

PENNSYLVANIA-AMERICAN WATER COMPANY

2020 GENERAL BASE RATE CASE

R-2020-3019369 (WATER)

R-2020-3019371 (WASTEWATER)

STATEMENT NO. 12

DIRECT TESTIMONY OF CONSTANCE E. HEPPENSTALL

EXHIBITS NO. 12-A, 12-B

WATER OPERATIONS EXCLUDING STEELTON

WATER STEELTON OPERATIONS

COST OF SERVICE AS OF DECEMBER 31, 2021, 2022

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**DIRECT TESTIMONY OF
CONSTANCE E. HEPPENSTALL**

ON BEHALF OF PENNSYLVANIA-AMERICAN WATER COMPANY

CONCERNING

COST OF SERVICE ALLOCATION

AND

CUSTOMER RATE DESIGN

**DOCKET NOS.
R-2020-3019369 (WATER)
R-2020-3019371 (WASTEWATER)**

DATE: April 29, 2020

**DIRECT TESTIMONY OF
CONSTANCE E. HEPPENSTALL**

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

2 A. My name is Constance E. Heppenstall. My business address is 1010 Adams
3 Avenue, Audubon, PA 19403.

4 **Q. By whom are you employed?**

5 A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC.

6 **Q. Please describe your position with Gannett Fleming Valuation and Rate
7 Consultants, LLC, and briefly state your general duties and responsibilities.**

8 A. My title is Senior Project Manager. My duties and responsibilities include the
9 preparation of accounting and financial data for revenue requirement, the allocation
10 of cost of service to customer classifications, and the design of customer rates in
11 support of public utility rate filings.

12 **Q. Have you presented testimony in rate proceedings before a regulatory agency?**

13 A. Yes. I have testified before the Pennsylvania Public Utility Commission
14 ("Commission" or "PUC"), the Kentucky Public Service Commission, the Arizona
15 Corporation Commission, the Missouri Public Service Commission, the Virginia
16 State Corporation Commission, the Hawaii Public Utility Commission, the West
17 Virginia Public Service Commission and the Indiana Utility Regulatory Commission
18 concerning revenue requirements, cost of service allocation, rate design and cash
19 working capital claims. A list of cases in which I have testified is attached to my
20 testimony.

21 **Q. What is your educational background?**

1 A. I have a Bachelor of Arts degree from the University of Virginia, Charlottesville,
2 Virginia and a Master of Science in Industrial Administration from the Carnegie-
3 Mellon University Tepper School of Business, Pittsburgh, Pennsylvania.

4 **Q. Would you please describe your professional affiliations?**

5 A. I am a member of the American Water Works Association (“AWWA”), the
6 Pennsylvania Municipal Authorities Association and the National Association of
7 Water Companies.

8 **Q. Briefly describe your work experience.**

9 A. I joined the Valuation and Rate Division of Gannett Fleming (formerly Gannett
10 Fleming, Inc.) in August 2006, as a Rate Analyst. Prior to my employment at
11 Gannett Fleming, I was a Vice President of PriMuni, LLP where I developed
12 financial analyses to test proprietary software in order to ensure its pricing accuracy
13 in accordance with securities industry conventions. From 1987 to 2001, I was
14 employed by Commonwealth Securities and Investments, Inc. as a public finance
15 professional where I created and implemented financial models for public finance
16 clients in order to create debt structures to meet clients’ needs. From 1986 to 1987, I
17 was a public finance associate with Mellon Capital Markets.

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

19 A. The purpose of my testimony is to explain the cost of service allocation and rate
20 design studies conducted under my direction and supervision for Pennsylvania-
21 American Water Company (“PAWC” or the “Company”) and to describe the results
22 produced by those studies.

1 **Q. What revenue requirement data did you use to prepare PAWC’s cost of service**
2 **studies?**

3 A. The cost of service and rate design studies I performed are based on data from
4 PAWC’s separate revenue requirement studies for the following operations: (1)
5 Water Operations Excluding Steelton Water Operations (“Water Operations Excl.
6 Steelton”); (2) Water Steelton Operations; (3) Wastewater Sanitary Sewer System
7 (“SSS”) Operations Excluding Sadsbury and Exeter Operations (“WW SSS Excl.
8 Sadsbury and Exeter”); (4) Wastewater (“WW”) SSS Sadsbury Operations; (5) WW
9 SSS Exeter Operations; (6) Scranton Wastewater Combined Sewer System (“CSS”) Operations (“WW CSS Scranton Operations”); (7) WW CSS McKeesport
10 Operations; and (8) WW CSS Kane Operations. The Company’s revenue
11 requirements for each of those operations are developed in PAWC Exhibit 3-A,
12 which is sponsored by PAWC witness Rod P. Nevirauskas and discussed in his
13 direct testimony.
14

15 **Q. Have you prepared exhibits presenting the results of your studies?**

16 A. Yes. The exhibits identified below accompany my testimony and are described in
17 detail further in my testimony. Exhibits 12-A through 12-H include separate cost of
18 service studies for the future test year ending December 31, 2021 (“Rate Year 1”) and the fully projected future test year ending December 31, 2022 (“Rate Year 2”).
19

Exhibit Number	Type of Study	Operation	Rate Zones
12-A	Cost of Service	Water Operations Excl. Steelton	Water Zones 1,2,3 and 4
12-B	Cost of Service	Water Steelton Operations	Water Zone 5

12-C	Cost of Service	WW SSS Operations Excl. Sadsbury and Exeter	Wastewater Zones 1,2,4,5 and 8 Delaware Sewer Company Acquisition
12-D	Cost of Service	WW SSS Exeter Operations	Wastewater Zone 9
12-E	Cost of Service	WW SSS Sadsbury Operations	Wastewater Zone 7
12-F	Cost of Service	WW CSS Scranton Operations	Wastewater Zone 3
12-G	Cost of Service	WW CSS McKeesport Operations	Wastewater Zone 6
12-H	Cost of Service	WW CSS Kane Operations	Acquisition
12-I	Bill Analysis	Water Operations Excl. Steelton	Water Zones 1,2,3 and 4
12-J	Bill Analysis	Water Steelton Operations	Water Zone 5
12-K	Bill Analysis	WW SSS Operations Excl. Sadsbury and Exeter Operations	Wastewater Zones 1,2,4,5 and 8
12-L	Bill Analysis	WW SSS Exeter Operations	Wastewater Zone 9
12-M	Bill Analysis	WW SSS Sadsbury Operations	Wastewater Zone 7
12-N	Bill Analysis	WW CSS Scranton Operations	Wastewater Zone 3
12-O	Bill Analysis	WW CSS McKeesport Operations	Wastewater Zone 6
12-P	Bill Analysis	WW CSS Kane Operations	Acquisition

1

2 **Q. Why did you perform a separate Steelton water cost of service study?**

3 A. I prepared the separate Water Steelton Operations cost of service study presented in
4 Exhibit 12-B, based on data from the separate Water Steelton Operations revenue
5 requirement study, consistent with PAWC's commitment under the settlement
6 approved by the Commission's final Order at Docket No. A-2019-3006880

1 authorizing the Company's acquisition of the water assets of the Steelton Borough
2 Authority under Section 1329 of the Public Utility Code ("Code").

3 **Q. Is the Company presenting separate cost-of-service and rate design studies for**
4 **CSS and SSS wastewater operations?**

5 A. Yes. A CSS collects and conveys a wastewater stream that consists of flows of
6 sewage from homes and businesses, infiltration and in-flow and storm water. As
7 explained by Mr. Nevirauskas in PAWC Statement No. 1, under the settlement of
8 PAWC's last base rate case at Docket No. R-2017-2595853, the Company agreed to
9 provide in its next base rate filing a separate revenue requirement study for each CSS
10 it owns and a cost of service study that separately identifies all storm water costs for
11 CSS operations. Accordingly, I prepared separate cost of service studies to identify
12 the cost of collecting, treating and disposing of storm water in the CSS wastewater
13 systems PAWC acquired from The Sewer Authority of the City of Scranton in 2016
14 and the Municipal Authority of the City of McKeesport in 2017. In addition, I
15 prepared a separate cost of service study for the CSS wastewater system currently
16 owned and operated by the Borough of Kane Authority, which PAWC expects to
17 obtain PUC approval to acquire in 2020.

18 **Q. Why is the Company presenting separate cost of service studies for PAWC's**
19 **Exeter and Sadsbury Wastewater SSS operations?**

20 A. As explained by Mr. Nevirauskas, PAWC is submitting separate cost of service
21 studies in this proceeding pursuant to the Commission-approved settlements
22 authorizing the Company to acquire the wastewater assets of Exeter and Sadsbury
23 Townships under Section 1329 of the Code.

1 **Q. Please provide a summary of the Company's rate design proposal in this case.**

2
3 A. The Company currently has five water rate zones and nine wastewater rate zones.
4 The Company plans to reduce number of rate zones in its water operations by
5 consolidating existing Rate Zones 2, 3 and 4 into Rate Zone 1 and maintaining Rate
6 Zone 5 (Steelton) as a separate rate zone. Rate Zones 3 and 4 will be consolidated
7 with Rate Zone 1 over a two-year period (Rate Year 1 and Rate Year 2), as described
8 by PAWC witness Ashley E. Everette in Statement No. 4. Schedule H of Exhibit
9 12-A provides a summary of present and proposed water rates.

10 PAWC is also proposing to reduce the number of rate zones in its wastewater
11 operations from nine to four, consisting of Rate Zone 1 (into which existing Rate
12 Zones 4, 5, 8 and 9 will be consolidated), Rate Zone 2 (New Cumberland), Rate
13 Zone 3 (Scranton), Rate Zone 4 (McKeesport) and Rate Zone 5 (Kane). The future
14 Rate Zone for the SSS wastewater system of the Delaware Sewer Company, which
15 the Company expects to acquire in 2020, will also be consolidated with Rate Zone 1.
16 Schedule F of Exhibit 12-C provides a summary of present and proposed wastewater
17 rates. Ms. Everette discusses the Company's rate design proposal in more detail in
18 her direct testimony.

19
20 **COST OF SERVICE ALLOCATION – WATER OPERATIONS**

21
22 **Q. Please describe the revenue requirements included in the cost of service studies**
23 **for PAWC's water operations being presented in this case.**

24 A. The cost of service studies for 2021 ("Rate Year 1") and 2022 ("Rate Year 2") for
25 Water Operations Excl. Steelton prepared for this case are based upon the
26 Company's revenue requirement for the applicable Rate Year, including a portion of

1 the revenue requirement of PAWC's wastewater operations, as authorized by
2 Section 1311(c) of the Code. The development of the Rate Year 1 and Rate Year 2
3 revenue requirements for Water Operations Excl. Steelton, including the revenue
4 requirement allocated to Water Operations Excl. Steelton from the Company's
5 Wastewater Operations, is explained by Mr. Nevirauskas in PAWC Statement No. 1.
6 The development of the revenue requirements for Water Operations Excl. Steelton
7 also includes the revenue requirement allocated from the Company's Water Steelton
8 Operations consistent with the rate increase limitation provided for in the PUC-
9 approved settlement of the Steelton acquisition proceeding.

10 The cost of service studies for Rate Year 1 and Rate Year 2 for PAWC's
11 Water Steelton Operations prepared for this case are based upon the Company's
12 revenue requirements for the applicable rate year, and does not include any revenue
13 requirement related to PAWC's wastewater operations, but includes a revenue
14 contribution from PAWC's Water Operations Excl. Steelton.

15 Using the total revenue requirements for Rate Year 1 and Rate Year 2
16 developed by the Company in the manner described by Mr. Nevirauskas, I prepared
17 the cost of service studies set forth in Exhibit No. 12-A (Water Operations Excl.
18 Steelton) and Exhibit No. 12-B (Water Steelton Operations). The cost of service
19 studies presented in Exhibit No. 12-A allocate among customer classes for Rate Year
20 1 and Rate Year 2: (1) the entire revenue requirement of the Company's Water
21 Operations Excl. Steelton; and (2) the portion of the revenue requirement of the
22 Company's Wastewater Operations that will not be recovered from wastewater
23 customers under the Company's proposed wastewater rates; and (3) the portion of

1 the Water Steelton Operations revenue requirement that will not be recovered from
2 Steelton area customers under proposed rates, which I will refer to, collectively, as
3 the cost of service or total revenue requirement for each Rate Year.

4 **Q. Briefly describe the purpose of your cost of water service allocation studies.**

5 A. The studies apply generally accepted cost of service principles and procedures to
6 allocate the total revenue requirement to the residential, commercial, industrial,
7 public, other water utilities, private fire protection and public fire protection
8 classifications. The results of the cost of service studies indicate the relative cost
9 responsibilities of each class of customers. The allocated cost of service is one of
10 several criteria that are appropriately considered in designing customer rates to
11 produce the required revenues.

12 **Q. Have you prepared exhibits that set forth the results of your studies?**

13 A. Yes. As I previously noted, Exhibit Nos. 12-A and 12-B set forth the results of my
14 allocation of the pro forma cost of service for Water Operations Excl. Steelton and
15 Water Steelton Operations, respectively, as of December 31, 2021 and December 31,
16 2022. Those exhibits also present the customer rates that the Company is proposing
17 for Rate Year 1 and Rate Year 2 to produce pro forma revenues equal to its revenue
18 requirements.

19 **Q. Please describe the method of cost allocation that was used in your studies.**

20 A. For both Exhibit No. 12-A and Exhibit No. 12-B, the base-extra capacity method, as
21 described in the 2017 (seventh edition) and prior editions of the Water Rates Manual
22 published by AWWA, was used to allocate the pro forma costs that comprise the
23 total revenue requirement. It is a recognized method for allocating the cost of

1 providing water service to customer classifications in proportion to each
2 classification's use of the commodity, facilities, and services of a water utility and
3 has been accepted by this Commission for that purpose. Indeed, it is the method that
4 was used in the Company's prior rate cases, including its last base rate case at Docket
5 No. R-2017-2595853, and has been accepted by the Commission for use by the
6 Company and other water utilities in the Commonwealth.

7 **Q. Is the base-extra capacity method described in Exhibit No. 12-A?**

8 A. Yes. It is described on pages 3 and 4 of the exhibit.

9 **Q. Please describe the procedure followed in the cost allocation studies.**

10 A. Each identified category of cost in the pro forma cost of service was allocated to the
11 customer classifications using appropriate allocation factors. This allocation is
12 presented in Schedule D of Exhibit Nos. 12-A and 12-B. The categories of cost,
13 which consist of operation and maintenance expenses, depreciation expense, taxes
14 and income available for return, are identified in columns 1 and 2 of Schedule D.
15 The costs in each category, shown in column 4, are allocated to the several customer
16 classifications based on allocation factors referenced in column 3. The development
17 of the allocation factors is presented in Schedule E of each exhibit.

18 I will use some of the larger cost items to illustrate the principles and
19 considerations used in the cost allocation methodology. Purchased water, purchased
20 electric power and treatment chemicals are examples of costs that tend to vary with
21 the amount of water consumed and are, therefore, considered base costs. These costs
22 are allocated to the several customer classifications in direct proportion to the

1 average daily consumption of those classifications through the use of Factor 1. The
2 development of Factor 1 is shown in Schedule E of Exhibit Nos. 12-A and 12-B.

3 Other source of supply, water treatment and transmission costs are associated
4 with meeting usage requirements in excess of the average. This means that these
5 costs are incurred generally to meet maximum day requirements. Costs of this
6 nature were allocated to customer classifications partially as base costs (i.e., in
7 proportion to average daily consumption, pursuant to Factor 1), partially as
8 maximum day extra capacity costs (i.e., in proportion to maximum day extra
9 capacity, pursuant to Factor 2) and, for certain pumping stations and transmission
10 mains, partially as fire protection costs (i.e., pursuant to Factor 3). Factors 2 and 3
11 are developed in Schedule E of Exhibit Nos. 12-A and 12-B.

12 Costs associated with storage facilities and the capital costs of distribution
13 mains were allocated partly on the basis of average consumption and partly on the
14 basis of maximum hour extra demand, including the demand for fire protection
15 service, because these facilities are designed to meet maximum hour and fire
16 demand requirements. The development of Factor 4, which is used for these
17 allocations, is shown in Schedule E of Exhibit Nos. 12-A and 12-B. Fire demand
18 costs were allocated to public and private fire protection service and to general
19 service in proportion to the relative potential demands on the system from hydrants
20 and fire services and from commercial service lines sized to provide both fire
21 protection and general service.

22 Costs associated with pumping facilities and the operation and maintenance
23 of mains were allocated on the combined bases of maximum day and maximum hour

1 extra capacity because these facilities serve both functions. The relative weightings
2 of Factor 3 (maximum day) and Factor 4 (maximum hour) for pumping facilities and
3 the operation and maintenance of mains were based on the functional use of pumps
4 and footage of mains, respectively, serving maximum day and maximum hour
5 functions. The weighted factors, identified as Factor 5, Factor 5A and Factor 8, are
6 developed on Schedule E of Exhibit Nos. 12-A and 12-B.

7 Costs associated with meters and services were allocated to customer
8 classifications in proportion to the capital costs of the sizes and quantities of meters
9 and services serving each classification. The factors for allocating the cost of meters
10 and services, identified as Factor 10 and Factor 11, are developed on Schedule E of
11 Exhibit Nos. 12-A and 12-B.

12 The costs of customer accounting, billing and collecting were allocated on
13 the basis of the number of customers for each customer classification. The costs of
14 meter reading were allocated on the basis of the pro forma number of meters by
15 classification. These factors, identified as Factor 14 and Factor 15, are developed on
16 Schedule E of Exhibit Nos. 12-A and 12-B. Bad Debt expense was allocated based
17 on the average net write-offs for 2019 (Factor 22).

18 Administrative and general costs were allocated on the basis of allocated
19 direct costs excluding those costs that require little administrative and general
20 expense, such as purchased water, power, chemicals, and waste disposal. The factor
21 for this allocation is identified as Factor 16.

22 Annual depreciation accruals were allocated on the basis of the function of
23 the facilities in each plant account to which depreciation expense is recorded. The

1 original cost less accrued depreciation of utility plant in service was also allocated
2 based on the function of the plant recorded in each account for the purpose of
3 developing Factor 19, which is used to allocate items such as return and income
4 taxes.

5 **Q. What was the source of the total cost of service data set forth in column 4 of**
6 **Schedule D of Exhibit Nos. 12-A and 12-B?**

7 A. The pro forma costs of service were furnished by the Company and are the same as
8 those set forth in PAWC Exhibit No. 3-A for Water Operations Excl. Steelton and
9 Water Steelton Operations for Rate Year 1 and 2.

10 **Q. Refer to Schedule E of Exhibit Nos. 12-A and 12-B and explain the source of the**
11 **system maximum day and maximum hour ratios used in the development of**
12 **Factors 2, 3 and 4.**

13 A. The ratios were based on a review of experienced Company data as a whole. The
14 maximum day ratio of 1.4 times the average day approximates the ratio of maximum
15 daily send-out experienced by the Company in 1988, 1995, 1996, 1999 and 2003.
16 The maximum hour ratio of 2.1 times the average hour approximates the results of
17 an analysis that was performed to determine the peak hour consumption experienced
18 by the Company's three largest operating districts.

19 **Q. Are the system maximum day and maximum hour ratios the same as those used**
20 **in studies presented on behalf of the Company in prior proceedings before this**
21 **Commission?**

22 A. Yes, they are.

1 **Q. Are the customer class extra capacity factors the same as those used in the**
2 **most recent prior study for the Company?**

3 A. Yes, the extra capacity factors used in Exhibit Nos. 12-A and 12-B reflect the results
4 of PAWC's most recent customer class demand study submitted in the Company's
5 2017 base rate case. A detailed explanation of the methods and procedures used, the
6 sampling techniques, the areas and customers monitored, the results of the
7 monitoring during the 2013-2015 period, and the conclusions from the study results
8 are described in the text of the study provided in Appendix A of Exhibit No. 12-A.

9 **Q. For Exhibit No. 12-A, did you make any adjustments to the cost allocation**
10 **study?**

11 A. Yes, four adjustments were made to the study. I will describe each adjustment and
12 explain why it was made.

13 **Q. Please explain the first adjustment.**

14 A. The first adjustment was made to exclude the volume of contract sales under Riders
15 DIS (Demand Industrial Sales) and DRS (Demand Resale Sales) in developing the
16 allocation factors for the industrial classification and the sales for resale – Group A
17 classification. As a result, costs are allocated only to the non-Rider DIS and non-
18 Rider DRS customers. Correspondingly, the revenues received from those contract
19 sales were deducted from the total cost of service and from each of the classes of
20 service, as shown on Schedule D of Exhibit No. 12-A.

21 **Q. Why did you make this adjustment?**

22 A. This adjustment was made in order to provide a more meaningful comparison of
23 allocated costs and revenues. Including contract sales would inappropriately reduce

1 the relative rate of return for the applicable class because revenues from the contract
2 sales reflect contract rates that, to address competitive situations and avoid loss of
3 load (or gain incremental load), are lower than the non-Rider DIS and non-Rider
4 DRS rates. By excluding contract sales, as I have done, the resulting cost of service
5 and revenues properly reflect the costs and the rates for non-contract customers. The
6 Commission, in approving Riders DIS and DRS, found that those riders create
7 benefits for all of the Company's customers by preserving or attracting incremental
8 sales that, because of competitive forces, could not otherwise be made. Accordingly,
9 the revenues derived from Rider DIS and Rider DRS customers are reflected as
10 deductions from all classes' cost of service.

11 **Q. Please describe the second adjustment.**

12 A. The second adjustment excludes from the extra capacity portion of Factors 2, 3 and 4
13 the curtailment volumes associated with service provided under the Company's
14 industrial curtailment rate schedule. This adjustment properly accounts for the fact
15 that curtailment volumes are interruptible and that a customer, to be eligible for this
16 service, is required to meet certain minimum load factor requirements and have
17 sufficient on-site storage capacity to meet its demands during periods of curtailment
18 or interruption. This adjustment reflects the fact that a customer on this rate does not
19 impose extra-capacity demand costs.

20 **Q. Are the volumes associated with curtailment service included in the base**
21 **portion of Factors 2, 3 and 4 in Exhibit No. 12-A?**

22 A. Yes, they are.

23 **Q. Please describe the third adjustment.**

1 A. The third adjustment reallocates the unrecovered portion of public fire protection
2 costs to the residential, commercial, industrial and public classifications. This was
3 done to comply with Section 1328 of the Public Utility Code, which provides that
4 public fire hydrant rates may only recover 25% of the cost of public fire protection
5 service and that the unrecovered portion should be recovered in the fixed charges of
6 other customer classifications. This adjustment was also made in Exhibit No. 12-B.

7 **Q. How did you allocate the unrecovered portion of public fire service costs in**
8 **Exhibit Nos. 12-A and 12-B?**

9 A. Consistent with the statutory requirement that these costs are to be recovered in fixed
10 charges, I allocated the unrecovered public fire costs using Factor 21, which is based
11 on the meter equivalents of the residential, commercial, industrial and public
12 classifications.

13 **Q. Please describe the fourth adjustment.**

14 A. As discussed earlier, the Company is adding a portion of the revenue requirement of
15 its wastewater operations and Water Steelton Operations to the revenue requirement
16 of its Water Operations Excl. Steelton. Accordingly, the fourth adjustment to the
17 water cost of service study in Exhibit No. 12-A allocates a portion of the Company's
18 total wastewater cost of service and Water Steelton Operations cost of service to the
19 cost of service of the Company's water operations. The wastewater cost of service
20 allocated to Water Operations Excl. Steelton is the cost of wastewater service less
21 the revenues the Company's proposed wastewater rates are expected to produce.
22 The cost of service allocated to Water Operations Excl. Steelton is the cost of the

1 Steelton area water service less the revenues the Company's proposed Water
2 Steelton Operations rates are expected to produce.

3 **Q. What is the total amount of wastewater and Water Steelton Operations revenue**
4 **requirement allocated to the Company's Water Operations Excl. Steelton?**

5 A. As shown in column 3 of Schedule A - 2021 of Exhibit No. 12-A, the other cost of
6 service allocated to the cost of service for PAWC's Water Operations Excl. Steelton
7 totals \$34,628,396 for Rate Year 1. Of this amount, \$32,851,567 and \$1,776,829
8 was allocated from the cost of service for PAWC's Wastewater Operations and
9 Water Steelton Operations, respectively. For Rate Year 2, as shown in column 3 of
10 Schedule A-2022 of Exhibit No. 12-A, the other cost of service allocated to PAWC's
11 Water Operations Excl. Steelton totals \$36,532,806 comprised of \$35,171,958 from
12 wastewater cost of service and \$1,360,848 from Water Steelton Operations cost of
13 service.

14 **Q. How was the Wastewater Operations and Water Steelton Operations revenue**
15 **requirements allocated to the customer classes in Exhibit No. 12-A?**

16 A. Both the wastewater and Water Steelton Operations revenue requirements are
17 allocated to the customer classes in Exhibit No. 12-A based on the cost of service
18 allocation of each class revenue contribution shown in the applicable cost of service
19 studies for Rate Year 1 and Rate Year 2.

20 **Q. Have you summarized the results of your cost allocation studies in Exhibit No.**
21 **12-A and 12-B?**

22 A. Yes. In Exhibit No. 12-A, The results for the combined water and wastewater
23 operations are summarized in columns 2, 3 and 4 of Schedule A-2021 and Schedule

1 A-2022 for Rate Year 1 and Rate Year 2, respectively. Column 5 presents each
2 customer classification's cost responsibility as a percent of the total cost. The results
3 for the Water Steelton Operations are summarized in column 2 of Schedule A-2021
4 and A-2022 in Exhibit No. 12-B for Rate Year 1 and 2, respectively.

5 **Q. Have you compared these cost responsibilities with the proportionate revenue**
6 **under existing rates for each customer classification in Exhibit 12-A and**
7 **Exhibit 12-B?**

8 A. Yes. Allocated cost responsibilities can be compared to the percentage revenue
9 under present rates, as shown on Schedule A of both exhibits. The percentage cost
10 responsibilities (relative cost of service) can be compared to the percentage of pro
11 forma revenues (relative revenues) under proposed rates, as shown on Schedule A-
12 2021 and Schedule A-2022 in Exhibit Nos. 12-A and 12-B for Rate Year 1 and Rate
13 Year 2, respectively.

14
15 **COST OF SERVICE ALLOCATION – WASTEWATER SSS OPERATIONS**

16 **Q. Please describe the overall cost of service allocation studies for the Company's**
17 **Wastewater SSS Operations.**

18 A. The cost of service allocation studies for the Company's Wastewater SSS Operations
19 include separate studies for Rate Year 1 and Rate Year 2. The studies for the
20 Company's WW SSS Operations Excl. Sadsbury and Exeter include the combined
21 wastewater revenue requirements for Rate Year 1 and Rate Year 2 for PAWC's
22 Wastewater Rate Zones 1, 2, 4, 5 and 8 and the anticipated Delaware Sewer
23 Company acquisition. As previously noted, I performed separate cost of service

1 allocation studies for the Company's WW SSS Sadsbury Operations (Wastewater
2 Rate Zone 7) and WW SSS Exeter Operations (Wastewater Rate Zone 9).

3 The purpose of each of those studies was to allocate the total cost of service,
4 which is the total revenue requirement, to the several customer classifications. In the
5 studies, the total costs were allocated to the residential, non-residential, large
6 industrial, and bulk use customer classifications in accordance with generally
7 accepted cost of service principles and procedures.

8 For the purposes of cost allocation in the WW SSS Operations Excl.
9 Sadsbury and Exeter studies presented in Exhibit No. 12-C, small industrial
10 customers are included in the non-residential class, which also includes commercial
11 and public customers. In Exhibit No. 12-C, two large industrial customers are
12 included in the large industrial class. The bulk user class for PAWC's WW SSS
13 Operations Excl. Sadsbury and Exeter, which also includes the Veterans
14 Administration Hospital, is served from the Coatesville system.

15 In addition, prior to PAWC's acquisition, Sadsbury Township was a bulk
16 customer of WW SSS Operations Excl. Sadsbury and Exeter. Therefore, costs
17 incurred by WW SSS Operations Excl. Sadsbury and Exeter to provide wastewater
18 treatment service to Sadsbury area customers were reallocated to the Company's
19 WW SSS Sadsbury Operations in Exhibit Nos. 12-C and 12-E.

20 In Exhibit No. 12-D, costs were allocated to the residential, non-residential
21 and bulk user class. In Exhibit No. 12-E, costs were allocated to the residential and
22 non-residential classes.

23 **Q. Have you prepared exhibits presenting the results of your studies?**

1 A. Yes. The results of my allocations of the pro forma cost of service as of December
2 31, 2021 and December 31, 2022 and proposed rates for Rate Year 1 and Rate Year
3 2 to produce the pro forma revenue requirements as of those dates are presented in
4 Exhibit Nos. 12-C (WW SSS Operations Excl. Sadsbury and Exeter), 12-D (WW
5 SSS Exeter Operations) and 12-E (WW SSS Sadsbury Operations).

6 **Q. Please describe the method of cost allocation that was used in your studies**
7 **presented in Exhibit Nos. 12-C, 12-D and 12-E.**

8 A. I used the functional cost allocation methodology described in “Financing and
9 Charges for Wastewater Systems”, Manual of Practice No. 27, published by the
10 Water Environment Federation (“Manual of Practice No. 27”). This method
11 allocates the cost of providing wastewater service to customer classifications in
12 proportion to each classification’s use of the service provider’s facilities and
13 services. Costs are assigned to cost components using predominant operational
14 purposes as cost-causative factors. The functional cost method is generally accepted
15 as a sound method for allocating the cost of wastewater service.

16 **Q. What procedures did you use to apply the cost allocation methodology for**
17 **wastewater operations?**

18 A. Each element of the cost of service is allocated to customer classifications according
19 to the functional categories of flow, infiltration and inflow (“I&I”), customer
20 facilities and customer accounting. With the exception of certain depreciation and
21 rate base items that are directly assigned to the bulk use class in Exhibit No. 12-C,
22 the functional costs are allocated to customer classifications based on the amount of

1 flow contributed to the system, the amount of I&I allocated to each class, and the
2 number and relative size of customers.

3 **Q. What costs have you directly assigned to the bulk user class for the Company's**
4 **WW SSS Operations Excl. Sadsbury and Exeter in Exhibit No. 12-C?**

5 A. I have directly assigned certain components of rate base and annual depreciation
6 expense related to wastewater treatment, gravity mains, and manholes based on the
7 result of the allocation in the 2010 Coatesville cost of service study in Docket R-
8 2010-216612 ("Prior Cost of Service Study"). This study allocated Coatesville
9 Wastewater System capital costs to the bulk users in accordance with the design-
10 basis methodology described in Manual of Practice No. 27 and the I&I study
11 submitted in compliance with the terms of the settlement at Docket No. R-2008-
12 2032689. Pursuant to the terms of that settlement, the Company conducted a
13 comprehensive study to determine the current and future flow volumes for each
14 classification and the volume of I&I in the system as it relates to direct and bulk
15 customers. The study was submitted with the Company's wastewater base rate
16 filing at Docket No. 2010-2166212 and was used in determining the cost of service
17 for the bulk user class in that case. In this case, it is appropriate to continue to
18 allocate certain capital costs related to treatment and mains to the bulk user class in
19 Exhibit No. 12-C based on the Prior Cost of Service Study and I&I study.

20 **Q. What is the basis for the volumes used to allocate costs to customer**
21 **classifications in Factor 1?**

22 A. Factor 1 is used to allocate costs related to wastewater treatment. In Factor 1, for the
23 residential and non-residential classes, the flows were based on pro forma water

usage billing determinants multiplied by a factor of 88%, consistent with the Coatesville I&I study, which determined that 88% of water use is returned to the sewer system. I then added average daily I&I in column 3 of Schedule E. In Exhibit No. 12-C, using the Company's flow records for the Coatesville District (which represent the majority of the Company's wastewater flow), it was determined that 37.5% of the average daily flow was from I&I. Using the Company's flow records for Wastewater Rate Zones 7 and 9, it was determined that 68.5% and 52.85% of the average daily flow was from I&I for WW SSS Exeter Operations and WW SSS Sadsbury Operations, respectively. Except for the bulk user class for WW SSS Operations Excl. Sadsbury and Exeter, 1/3 of I&I was allocated to the customer classes based on average daily flow and 2/3 was allocated based on service equivalents. The I&I allocated to the bulk use class in Exhibit No. 12-C was based on the amount allocated in Factor 1 in the Prior Cost of Service Study.

Q. Please give a similar description of Factor 2 for Exhibit Nos. 12-C, 12-D and 12-E.

A. Factor 2 is used to allocate costs related to collection. This factor was calculated in a similar manner as Factor 1. However, based on Company records, maximum day volumes were found to be 3 times total average flow for PAWC's WW SSS Operations Excl. Sadsbury and Exeter and WW SSS Sadsbury Operations and 7 times total average flow for the Company's WW SSS Exeter Operations. Except for the bulk use class for PAWC's WW SSS Operations Excl. Sadsbury and Exeter, 1/3 of I&I was allocated to the customer classes based on average daily flow and 2/3 was allocated based on service equivalents. The I&I allocated to the bulk use class in

1 Exhibit No. 12-C was based on the amount allocated in Factor 2 in the Prior Cost of
2 Service Study.

3 **Q. Please explain the factors used to allocate capital costs.**

4 A. Factors 3 and 3A are similar to Factors 1 and 2 except that Factors 3 and 3A exclude
5 the bulk use class in Exhibit No. 12-C because assets for these customers have been
6 directly assigned. Factors 3 and 3A are not used in Exhibit 12-D and 12-E as these
7 areas do not have bulk customers who have specific allocations relate to a
8 wastewater treatment plant.

9 **Q. Please explain the remaining cost allocation factors.**

10 A. Factors 4 and 5 were used to allocate customer facilities and customer accounting
11 costs. These factors were based on the number and relative size of the customers.

12 Factor 6 is a composite factor used to allocate employee pension and benefit
13 expenses and payroll taxes. Factor 6 is based on the allocation of direct labor
14 expense.

15 Factors 7 and 8 are based on the allocation of plant in service and rate base,
16 respectively. Factor 7 allocates other rate base elements and Factor 8 is used to
17 allocate return and taxes.

18 Factor 9 is based on the total cost of service and is used to allocate regulatory
19 commission expense and other revenues.

20 Factor 10 is used to allocate administrative and general expenses and is based
21 on the allocation of all other operating expenses exclusive of power, chemicals and
22 waste disposal. Factor 11 allocates cash working capital and is based on the
23 allocation of all operating expenses.

1 **Q. Please explain the procedure for allocating costs to the several customer**
2 **classifications.**

3 A. The items of cost, which include operation and maintenance expenses, depreciation
4 expense, taxes and income available for return, are identified in column 1 of
5 Schedule D in Exhibit Nos. 12-C, 12-D and 12-E. The cost of each item, shown in
6 column 3, is allocated to the several customer classifications based on allocation
7 factors referenced in column 2. The development of the allocation factors is
8 presented in Schedule E of each exhibit.

9 **Q. What was the source of the total cost of service data set forth in column 3 of**
10 **Schedule D of Exhibit Nos. 12-C, 12-D and 12-E?**

11 A. The pro forma costs of service were furnished by the Company and are the same as
12 those set forth in Exhibit No. 3-A. The 2021 pro forma cost of service in Exhibit
13 Nos. 12-C, 12-D and 12-E was reduced by \$2,428,123, \$4,059,372 and \$878,532 in
14 revenue requirement, respectively, that is proposed to be recovered in water rates,
15 excluding Steelton, in Rate Year 1. The 2022 pro forma cost of service in Exhibit
16 Nos. 12-C, 12-D and 12-E was reduced by \$3,506,461, \$3,719,978 and \$826,706 in
17 revenue requirement, respectively, that is proposed to be recovered in water rates,
18 excluding Steelton, in Rate Year 2.

19 The pro forma cost of service in Exhibit No. 12-C was reduced by \$672,275
20 and \$699,423 in Rate Year 1 and 2, respectively, for wastewater treatment that is
21 proposed to be recovered in wastewater rates from Sadsbury area customers.

22 **Q. Have you summarized the results of your cost allocation studies for the**
23 **Company's SSS Wastewater Operations?**

1 A. Yes. The results are summarized in columns 1, 2 and 3 of Schedule A of Exhibit
2 Nos. 12-C, 12-D and 12-E. Column 2 sets forth the total allocated pro forma cost of
3 service as of December 31, 2021 for Rate Year 1 and December 31, 2022 for Rate
4 Year 2 for each customer classification identified in column 1. Column 3 presents
5 each customer classification's cost responsibility as a percent of the total cost.

6 **Q. Have you compared these cost responsibilities with the proportionate revenue**
7 **under existing rates for each customer classification?**

8 A. Yes. A comparison of the allocated cost responsibilities and the percentage revenue
9 under existing rates can be made by comparing columns 3 and 5 of Schedule A of
10 Exhibit Nos. 12-C, 12-D and 12-E. A similar comparison of the percentage cost
11 responsibilities (relative cost of service) and the percentage of pro forma revenues
12 (relative revenues) under proposed rates can be made by comparing columns 3 and 7
13 of Schedule A of each exhibit. The rate of return by customer classification under
14 present and proposed rates is set forth on Schedules B and C, respectively.

15

16 **COST OF SERVICE ALLOCATION – WW CSS SCRANTON OPERATIONS**

17 **Q. Please describe the cost of service allocation for the Company's WW CSS**
18 **Scranton Operations.**

19 A. The cost of service allocation studies for Rate Year 1 and Rate Year 2 are based on
20 the revenue requirements developed by the Company in Exhibit 3-A for the WW
21 CSS Scranton Operations. The study allocated the cost of service to residential, non-
22 residential, industrial, and stormwater classifications.

23 **Q. Have you prepared an exhibit presenting the results of your study?**

1 A. Yes. The results of my allocation of the pro forma cost of service as of December
2 31, 2021 and 2022, and proposed customer rates for Rate Year 1 and Rate Year 2 are
3 presented in Exhibit No. 12-F.

4 **Q. Please describe the method of cost allocation that was used in your study.**

5 A. For this study, I also used the functional cost allocation methodology described in
6 Manual of Practice No. 27. I modified the allocation method in order to determine
7 the incremental cost related to handling stormwater for a CSS and combined sewer
8 overflows (“CSO”).

9 **Q. What procedures did you use to apply the cost allocation methodology for WW**
10 **CSS Scranton Operations?**

11 A. Each element of the cost of service is allocated to customer classifications according
12 to the functional categories of sanitary flow (including normal I&I), stormwater
13 introduced from surface sources, customer facilities and customer accounting. With
14 the exception of certain operating costs, depreciation, and rate base items that are
15 directly assigned to either the sanitary system or to the stormwater function, the
16 functional costs are allocated to customer classifications based on the amount of
17 flow contributed to the system, the amount of I&I allocated to each class, the volume
18 of stormwater, and the number and relative size of customers.

19 **Q. What costs have you directly assigned to the sanitary sewer classifications?**

20 A. I directly assigned rate base items and annual depreciation expense associated with
21 pumping stations, wastewater treatment structures and equipment, gravity mains, and
22 manholes to the sanitary sewer classes (residential, non-residential and large
23 industrial). The Scranton wastewater collection system is not entirely a CSS.

1 Approximately 63% of the collection system is combined sewers and the remaining
2 37% comprises sanitary sewers only. Therefore, for gravity mains, after assigning
3 specific stormwater assets to the stormwater class described below, I allocated 37%
4 of the remaining costs of gravity mains to the sanitary classes, and I allocated 63%
5 on a combined system basis. The cost of manholes in Account 361.2 were allocated
6 in the same manner.

7 The Froude Ave. pumping station serves only sanitary sewers and, therefore,
8 its cost was assigned solely to the sanitary classifications. The remaining pumping
9 stations were allocated on a combined system basis.

10 For the wastewater treatment plant, a detailed analysis of the structures
11 account and the equipment account was performed in order to identify the portions
12 of the plant specifically related to secondary sanitary treatment. The portions of the
13 plant thus identified were allocated to the sanitary classifications. The remaining
14 portions of the wastewater treatment structures and equipment accounts, sized to
15 handle 60 mgd of flow, was assigned 41.67% (25 mgd) to the sanitary classes and
16 58.33% (35 mgd) to stormwater.

17 **Q. What costs have you directly assigned to the stormwater classification?**

18 A. I directly assigned operating labor for five collection system employees who are
19 specifically tasked with operating and maintaining the CSO assets within the
20 collection system. In addition to the pumping stations and portions of the treatment
21 plant related to stormwater that I previously discussed, I also identified rate base
22 items and associated annual depreciation expense for specific CSO assets within
23 Account 361.10, Gravity Mains. These assets include catch basins, CSO outfalls,

1 regulator chambers, diversion manholes, culverts, detention basins, and biofiltration
2 catch basin systems. The costs of these assets were directly assigned to the
3 stormwater classification.

4 **Q. What other costs were directly assigned to the stormwater function?**

5 A. For Account 391, Transportation Equipment, the cost of one vector truck and the
6 cost of a street sweeper were allocated directly to stormwater.

7 **Q. What is the basis for the volumes used to allocate costs to customer**
8 **classifications for operating and maintenance expenses?**

9 A. Factors 1 and 2 are used to allocate operation and maintenance costs related to
10 wastewater collection and treatment. For Factor 1, for the residential, non-
11 residential, and industrial classes, the flows were based on pro forma water usage
12 billing determinants multiplied by a factor of 88%, consistent with the Coatesville
13 I&I study. I then added average daily I&I in column 3 of Schedule E. Using
14 Company flow records for Wastewater Rate Zones 1, 2 and 3 (which represent 80%
15 of the Company's wastewater flow excluding Scranton), it was determined that
16 37.5% of the average daily flow was from I&I. One-third of the I&I was allocated to
17 the customer classes based on average daily flow and 2/3 was allocated based on
18 service equivalents using Factor 1A.

19 Factor 2 is based on average daily sanitary flows from Factor 1 plus average
20 daily stormwater flow. The total wastewater flow (sanitary and stormwater) is based
21 on the experienced average daily total flow for 2019 of 13.722 mgd.

22 **Q. Please explain the factors used to allocate the capital costs.**

1 A. Factors 3 and 4 are similar to Factors 1 and 2 except that Factors 3 and 4 include
2 peak flows. For Factor 3, the total peak sanitary flow is based on 25 mgd, which
3 reflects additional I&I under peak conditions. For Factor 4, the total peak
4 wastewater flow is based on 60 mgd, with the addition of 35 mgd of peak
5 stormwater flow.

6 **Q. Please explain the remaining cost allocation factors.**

7 A. Factors 5 and 6 were used to allocate customer facilities and customer accounting
8 costs. These factors were based on the number and relative size of the customers.

9 Factor 7 is a composite factor used to allocate employee pension and benefit
10 expenses and payroll taxes. Factor 7 is based on the allocation of direct labor
11 expense.

12 Factors 8 and 9 are based on the allocation of plant in service and rate base,
13 respectively. Factor 8 allocates other rate base elements, and Factor 9 is used to
14 allocate return and taxes.

15 Factor 10 is based on the total cost of service and is used to allocate
16 regulatory commission expense and other revenues. Factor 10A is based on the total
17 cost of service with stormwater costs reallocated to the sanitary classes and is used to
18 allocate the portion of the Scranton wastewater cost of service to be recovered from
19 water rates, excluding Steelton.

20 Factor 11 is used to allocate administrative and general expenses and is based
21 on the allocation of all other operating expenses exclusive of power, chemicals and
22 waste disposal. Factor 12 allocates cash working capital and is based on the
23 allocation of all operating expenses.

1 **Q. Please explain the procedure for allocating costs to the several customer**
2 **classifications.**

3 A. The items of cost, which include operation and maintenance expenses, depreciation
4 expense, taxes and income available for return, are identified in column 1 of
5 Schedule D. The cost of each item, shown in column 3, is allocated to the several
6 customer classifications based on allocation factors referenced in column 2. The
7 development of the allocation factors is presented in Schedule E of the exhibit.

8 **Q. What was the source of the total cost of service data set forth in column 3 of**
9 **Schedule D of Exhibit No. 12-F?**

10 A. The pro forma costs of service for Rate Years 1 and 2 were furnished by the
11 Company and are the same as those set forth in Exhibit No. 3-A. This pro forma
12 cost of service was reduced by \$8,457,047 in 2021 and \$10,843,561 in 2022, which
13 are the amounts the Company proposes to recover in water rates, excluding Steelton,
14 in Rate Year 1 and Rate Year 2. The revenues under the 2021 and 2022 proposed
15 rates for the WW CSS Scranton Operations are sufficient to recover the remaining
16 revenue requirement in 2021 and 2022.

17 **Q. Have you summarized the results of your cost allocation studies for the**
18 **Company's WW CSS Scranton Operations?**

19 A. Yes. The results are summarized in columns 1, 2 and 3 of Schedules A-2021 and
20 2022 of Exhibit No. 12-F for Rate Year 1 and Rate Year 2, respectively. Column 2
21 sets forth the total allocated pro forma cost of service as of December 31, 2021 and
22 2022 for each customer classification identified in column 1. Column 3 presents
23 each customer classification's cost responsibility as a percent of the total cost. The

1 total cost of service associated with stormwater for the combined system is
2 \$13,993,144 in 2021 and \$14,968,640 in 2022, as shown in column 7 of Schedule D-
3 2021 and Schedule D-2022. This cost was reallocated to the sanitary classes based
4 on Factor 1A.

5 **Q. Have you compared these cost responsibilities with the proportionate revenue**
6 **under existing rates for each customer classification?**

7 A. Yes. A comparison of the allocated cost responsibilities and the percentage revenue
8 under existing rates can be made by comparing columns 3 and 5 of Schedules A-
9 2021 and A-2022 of Exhibit No. 12-F. A similar comparison of the percentage cost
10 responsibilities (relative cost of service) and the percentage of pro forma revenues
11 (relative revenues) under proposed rates can be made by comparing columns 3 and 7
12 of Schedules A-2021 and A-2022 of Exhibit No. 12-F. The rate of return by
13 customer classification under present and proposed rates is set forth on Schedules B
14 and C for 2021 and 2022.

15
16 **COST OF SERVICE ALLOCATION – WW CSS MCKEESPORT OPERATIONS**

17 **Q. Please describe the cost of service allocation for the Company's WW CSS**
18 **McKeesport Operations in Exhibit No. 12-G.**

19 A. The cost of service allocation studies are based on the revenue requirements for Rate
20 Year 1 and Rate Year 2 developed by the Company in Exhibit 3-A for the WW CSS
21 McKeesport CSS Operations. The studies allocated the cost of service to residential,
22 non-residential, bulk, and stormwater classifications.

23 **Q. Have you prepared an exhibit presenting the results of your study?**

1 A. Yes. The results of my allocation of the pro forma cost of service as of December
2 31, 2021 and 2022, and proposed customer rates for Rate Year 1 and Rate Year 2 are
3 presented in Exhibit No. 12-G.

4 **Q. Please describe the method of cost allocation and procedures that were used in**
5 **your WW CSS McKeesport studies.**

6 A. For Exhibit No. 12-G, I also used the functional cost allocation methodology
7 described in Manual of Practice No. 27. I modified the allocation method in order to
8 determine the incremental cost related to handling CSS and CSO stormwater, similar
9 to the cost allocation method used in Exhibit No. 12-F. I also employed the same
10 procedures to apply the cost allocation methodology employed in Exhibit No. 12-F
11 for the Company's WW CSS McKeesport Operations, except for addition of a bulk
12 user customer class.

13 **Q. Please describe the primary differences in volumes and assumptions used in the**
14 **studies for WW CSS Scranton Operations and WW CSS McKeesport**
15 **Operations.**

16 A. As I previously explained, the Scranton wastewater collection system consists of
17 both sanitary and combined sewers. In contrast, the McKeesport collection system is
18 almost entirely a CSS, except for the Port Vue Borough system, which is
19 approximately 25% combined sewers and the remaining 75% is comprised of
20 sanitary sewers only. Accordingly, I directly assigned the Port Vue sanitary sewer
21 assets to sanitary sewer service only

22 In addition, all the wastewater treatment plants costs were assigned based on
23 the capacity of the McKeesport wastewater treatment plant (the largest treatment

1 plant). This plant is sized to handle 56 mgd of combined flow, and 35.71% (20 mgd)
2 was assigned to the sanitary classes and 64.29% (36 mgd) to stormwater.

3 Finally, the experienced average daily flow for 2019 used to develop Factors
4 1 and 2 was 13.306 mgd at the three wastewater treatment plants (including the
5 Duquesne Plant and Dravosburg Plant) in the Company's WW CSS McKeesport
6 Operations.

7 **Q. What was the source of the total cost of service data set forth in column 3 of**
8 **Schedule D of Exhibit No. 12-G?**

9 A. The pro forma costs of service for Rate Year 1 and 2 were furnished by the
10 Company and are the same as those set forth in Exhibit No. 3-A. This pro forma
11 cost of service was reduced by \$15,544,509 in 2021 and \$14,619,421 in 2022, which
12 are the amounts the Company proposes to recover in water rates, excluding Steelton,
13 in Rate Year 1 and Rate Year 2. The revenues under the proposed rates for PAWC's
14 WW CSS McKeesport Operations are sufficient to recover the remaining revenue
15 requirement in Rate Year 1 and Rate Year 2.

16 **Q. Have you summarized the results of your cost allocation study?**

17 A. Yes. The results are summarized in columns 1, 2 and 3 of Schedule A of Exhibit
18 No. 12-G. Column 2 sets forth the total allocated pro forma cost of service as of
19 December 31, 2021 and 2022 for each customer classification identified in column 1.
20 Column 3 presents each customer classification's cost responsibility as a percent of
21 the total cost. The total cost of service associated with stormwater for the combined
22 system is \$16,169,242 in 2021 and \$16,180,937 in 2022, as shown in column 7 of

Schedules D-2021 and D-2022. This cost was reallocated to the sanitary classes based on Factor 1A.

Q. Have you compared these cost responsibilities with the proportionate revenue under existing rates for each customer classification?

A. Yes. A comparison of the allocated cost responsibilities and the percentage revenue under existing rates can be made by comparing columns 3 and 5 of Schedule A of Exhibit 12-G. A similar comparison of the percentage cost responsibilities (relative cost of service) and the percentage of pro forma revenues (relative revenues) under proposed rates can be made by comparing columns 3 and 7 of Schedule A-2021 and 2022 of Exhibit No. 12-G. The rate of return by customer classification under present and proposed rates is set forth on Schedules B and C for both 2021 and 2022.

COST OF SERVICE ALLOCATION – WW CSS KANE OPERATIONS

Q. Please describe the cost of service allocation for the Company's WW CSS Kane Operations.

A. The cost of service allocation studies for Rate Year 1 and Rate Year 2 are based on the revenue requirement developed by the Company in Exhibit 3-A for the WW CSS Kane Operations. The studies allocated the cost of service to residential, non-residential and stormwater classifications.

Q. Have you prepared an exhibit presenting the results of your study?

A. Yes. The results of my allocation of the pro forma cost of service as of December 31, 2021 and 2022, and proposed customer rates as of that date are presented in Exhibit No. 12-H.

1 **Q. Please describe the method of cost allocation that was used in your study.**

2 A. For Exhibit No. 12-H, I also used the functional cost allocation methodology
3 described in Manual of Practice No. 27. I modified the allocation method in order to
4 determine the incremental cost related to handling CSS and CSO stormwater, similar
5 to the cost allocation method used in Exhibits 12-F and 12-G. I also employed the
6 same procedures to apply the cost allocation methodology employed in Exhibit Nos.
7 12-F and 12-G for the Company's WW CSS Kane Operations.

8 **Q. Please describe the principal differences in volumes and assumptions used in**
9 **the studies for WW CSS Kane Operations.**

10 A. The original wastewater collection system in Kane Borough constructed in the
11 1960's is a combined system, whereas the collection system constructed in the
12 1990's that extends beyond the Kane Borough boundaries is sanitary only.
13 Accordingly, the assignment of assets to the sanitary only and combined system
14 classifications was based on the vintages of the assets in Accounts 361.10 and
15 361.20.

16 In addition, the Kinzua and Pine Street wastewater treatment plants in Kane
17 Borough are each sized for 1.5 mgd or a total of 3.0 mgd of combined flow. This
18 capacity was assigned 66.67% (2 mgd) to the sanitary classes and 33.33% (1 mgd) to
19 stormwater.

20 Finally, the experienced average daily flow for 2019 used to develop Factors
21 1 and 2 was 1.194 mgd at the two wastewater treatment plants in Kane Borough.

22 **Q. What was the source of the total cost of service data set forth in column 3 of**
23 **Schedule D of Exhibit No. 12-H?**

1 A. The pro forma costs of service for Rate Year 1 and 2 were furnished by the
2 Company and are the same as those set forth in Exhibit No. 3-A. This pro forma
3 cost of service was reduced by \$1,483,984 in 2021 and \$1,655,831 in 2022, which
4 are the amounts the Company proposes to recover in water rates, excluding Steelton.
5 The revenues under the proposed rates for the WW CSS Kane Operations are
6 sufficient to recover the remaining revenue requirement in Rate Years 1 and 2.

7 **Q. Have you summarized the results of your cost allocation study?**

8 A. Yes. The results are summarized in columns 1, 2 and 3 of Schedules A-2021 and A-
9 2022 of Exhibit No. 12-H. Column 2 sets forth the total allocated pro forma cost of
10 service as of December 31, 2021 and 2022 for each customer classification identified
11 in column 1. Column 3 presents each customer classification's cost responsibility as
12 a percent of the total cost. The total cost of service associated with stormwater for
13 the combined system is \$781,029 in 2021 and \$1,042,586 in 2022, as shown in
14 column 6 of Schedule D in 2021 and 2022. This cost was reallocated to the sanitary
15 classes based on Factor 1A.

16 **Q. Have you compared these cost responsibilities with the proportionate revenue**
17 **under existing rates for each customer classification?**

18 A. Yes. A comparison of the allocated cost responsibilities and the percentage revenue
19 under existing rates can be made by comparing columns 3 and 5 of Schedule A-2021
20 and 2022 of Exhibit 12-H. A similar comparison of the percentage cost
21 responsibilities (relative cost of service) and the percentage of pro forma revenues
22 (relative revenues) under proposed rates can be made by comparing columns 3 and 7
23 of Schedule A-2021 and A-2022 of Exhibit No. 12-H. The rate of return by

customer classification under present and proposed rates is set forth on Schedules B and C for 2021 and 2022.

CUSTOMER RATE DESIGN

Q. What are the appropriate factors to be considered in designing a rate structure?

A. In preparing a proposed rate structure, one should consider the allocated costs of service, the impact of radical changes from the present rate structure, the understandability and ease of application of the rate structure, community and social influences, and the value of service. General guidelines should be developed with management to determine the extent to which each of these criteria is to be incorporated in the rate structure to be designed, inasmuch as the pricing of a commodity or service is a function of management.

Q. Did the Company's management provide rate design guidelines to you for water rates?

A. Yes, it did. As described in Ms. Everette's testimony, the Company furnished the following guidelines: (1) increase customer charges to recover, at a minimum, the direct customer costs; (2) increase private fire protection charges to recover the cost of service; (3) increase the public fire hydrant charges in all zones that are below 25% of the public fire protection cost of service to a rate that is 25% of that cost of service; and (4) increase rates by customer classification in a manner that moves the revenues recovered from each classification toward the indicated cost of service,

1 where possible including the combined wastewater revenue requirement and Water
2 Steelton Operations revenue requirement allocated to water operations.

3 **Q. Do the proposed rates comply with these guidelines?**

4 A. Yes, they do.

5 **Q. Please describe the proposed water rates.**

6 A. As shown in Schedule H of Exhibit No. 12-A, the metered rates for all classes of
7 customers in Rate Zone 2 are consolidated into Rate Zone 1 under proposed rates.
8 The customer charges in Rate Zone 3 (McEwensville) and 4 (Turbotville) are set
9 equal to Rate Zone 1 in 2021, while consumption charges move toward or equal to
10 Rate Zone 1 in 2021 and are set equal to Rate Zone 1 in 2022. Rate Zone 5
11 (Steelton) maintains its existing rate structure with a 20% increase for all classes of
12 customers in the Company's Steelton service territory, except for the specific
13 contractual rates for public fire protection in certain municipalities. As explained by
14 Ms. Everette, the Company is not proposing to consolidate Rate Zone 5 into Rate
15 Zone 1 in this case because of the rate limitation provided under the settlement of the
16 Steelton acquisition proceeding.

17 **Q. Please explain the increases in customer charges for water service.**

18 A. The customer charges for residential, commercial and municipal classes for all meter
19 sizes in the present Rate Zone 1, including the effect of a roll-in of a 5.00%
20 Distribution System Improvement Charge ("DSIC") and a 6.79% negative surcharge
21 to implement the effects of the Tax Cuts and Jobs Act of 2018 ("TCJA Voluntary
22 Surcharge"), were increased by 10.8% in 2021 and 2.8% in 2022. This compares to
23 the overall revenue increase for water sales of about 12.6% over present rates,

1 including the 5.00% DSIC. Customer charges in all other water rate zones, except
2 Zone 5, are being increased to the same rate as the Rate Zone 1 customer charges in
3 Rate Year 1.

4 The 5/8-inch customer charge is being increased from \$16.25 (\$16.50 plus a
5 5.00% DSIC and a -6.79% TCJA Voluntary Surcharge credit) to \$18.00 per month
6 in 2021 and \$18.50 in 2022. The fully allocated customer costs for a 5/8-inch
7 metered customer for are \$21.23 per month in 2021 and \$21.52 in 2022 as set forth
8 on A-45 thru A-47 of the Appendix to Exhibit No. 12-A. Consequently, the
9 proposed increases continue moving the customer charges toward the fully allocated
10 cost of service. The proposed customer charges are also comparable to the subset of
11 fully-allocated customer costs consisting solely of “direct” customer costs, which are
12 \$17.08 per month in 2021 and \$17.50 in 2022, including the unrecovered cost of
13 public fire service. The direct customer costs for a customer with a 5/8-inch meter
14 for each classification are set forth on pages A-48 to A-50 of the Appendix to
15 Exhibit No. 12-A.

16 **Q. Are fully-allocated customer costs the appropriate basis for designing customer**
17 **charges?**

18 A. Yes. I believe that customer costs should be determined based on all of the costs
19 properly allocated to the customer function and that such costs are the appropriate
20 basis for determining customer charges. The use of fully allocated customer costs is
21 recommended by the AWWA’s Water Rates Manual as the appropriate way to
22 capture all customer-related costs in the customer charge. In addition to properly
23 recognizing all customer costs, the use of fully allocated customer costs to establish

1 the customer charge provides greater revenue stability by recovering a slightly larger
2 percentage of the Company's total revenue requirement through a fixed charge. This
3 effect is important given that the Company continues to experience declining per-
4 customer sales and associated declines in revenue per-customer.

5 I also prepared and submitted a "direct" customer cost study because, in the
6 past, "direct" customer costs have been considered by the Commission in assessing
7 proposed customer charges.

8 **Q. What are the proposed water customer charges for the Industrial and Other**
9 **Water Utilities classes?**

10 A. Customer charges for the Industrial class were increased approximately 3.6% in
11 2021 and 2.8% in 2022 in order to mitigate the increase in volumetric rates for
12 industrial customers. Customer charges for other water utilities were increased 9.2%
13 in 2021 and 2.7% in 2022 in order to mitigate the increase in the volumetric rate for
14 other water utilities customers.

15 **Q. What changes are you proposing to private fire protection rates?**

16 A. Because the revenues under present rates are below the indicated cost of private fire
17 protection service, the Rate Zone 1 base rates for private fire protection, with the
18 exception of the rate for hydrants, which was increased by approximately 15.5% in
19 2021 and 5.5% in 2022. The rate for private hydrants was increased to move toward
20 equalizing the private and public hydrant rates.

21 **Q. Please explain the proposed public fire protection hydrant rates.**

22 A. The 2021 and 2022 costs of providing public fire protection service is \$67.48 and
23 \$71.18 per month, respectively. Section 1328 of the Public Utility Code prohibits

1 increasing public fire protection rates if the revenues under existing rates recover
2 more than 25 percent of the cost of public fire protection service. The present
3 monthly rate per hydrant prior to 1/1/2000 is \$20.00, or approximately 29.6% of the
4 cost of service in 2021 and 28.1% if the cost of service in 2022. Therefore, the
5 Company does not propose to increase that rate.

6 The public fire hydrant rate calculated at 25% of the cost of service is
7 approximately \$16.87 per month, or \$202.44 annually in 2021. All public hydrant
8 rates below this level will increase to \$16.87 per month in 2021. In 2022, the public
9 fire hydrant rate calculated at 25% of the cost of service is approximately \$17.80 per
10 month, or \$213.60 annually. All public hydrant rates below this level will increase to
11 \$16.87 per month in 2022.

12 Additionally, pursuant to the terms of the Commission-approved settlement
13 of the Company's water rate case at Docket No. R-994638, the applicable rate for
14 public fire hydrants placed in service after January 1, 2000, will be 25% of the cost
15 of service, or \$16.87 per month under proposed rates in 2021 and \$17.80 per month
16 under proposed rates in 2022.

17 **Q. Do the proposed rates result in movement toward the cost of service for each**
18 **classification?**

19 A. Yes, as shown by the data in Schedules A-2021 and 2022 in Exhibit No. 12-A, the
20 revenues under proposed rates are more closely aligned with the cost of service by
21 classification than the revenues under present rates.

22 **Q. Please describe the proposed wastewater rates.**

1 A. The proposed Zone 1 wastewater rates increase the customer charge for residential
2 customers to \$11.00 in 2021 and \$12.00 in 2022 from \$10.00 under present rates.
3 Wastewater Rate Zones 4, 5, 6, 7, 8 and 9 are consolidated with Rate Zone 1 in
4 2021. Rate Zone 2 (New Cumberland) moved to the rate structure of Rate Zone 1 in
5 2021 but maintains separate volumetric charges in 2021 and 2022 in order to
6 mitigate a large increase for customers in the Company's New Cumberland
7 wastewater service area. Zones 6 and the Kane remain as separate rate areas.

8 **Q. Please explain the increases in customer charges for wastewater service.**

9 A. The wastewater customer charges for all customer classes in Rate Zone 1 were
10 increased by 10% in 2021 and 9% in 2022. Customer charges in all other
11 wastewater rate zones, except Rate Zone 3 and the WW CSS Kane Operations Rate
12 Zone, increased to the same rate as the Rate Zone 1 customer charges. This increase
13 provides movement toward the goal of recovering in the customer charge all
14 customer costs and 2/3 of I&I costs, which total \$29.14 per month for WW SSS
15 Operations Excl. Sadsbury and Exeter in 2021.

16 **Q. Have you prepared comparisons of present and proposed rates for each**
17 **classification and each rate zone?**

18 A. Yes. Schedule H of Exhibit No. 12-A presents comparisons of the present and
19 proposed water rates. Schedule F in Exhibit No. 12-C presents comparisons of the
20 present and proposed wastewater rates.

21 **Q. Have you prepared proof of revenue schedules under present and proposed**
22 **rates?**

1 A. Yes. Exhibits No. 12-I through 12-P set forth the proof of revenues from the
2 application of present and proposed water rates to the customer consumption
3 analysis for Rate Year 1 and 2 for each area.

CONCLUSION

6 Q. Does this complete your testimony at this time?

7 A. Yes, it does.

1
2

CONSTANCE E. HEPPENSTALL – LIST OF CASES TESTIFIED

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client/Utility</u>	<u>Subject</u>
1.	2010	AZ CC	W-01303A-09-0343 and SW-01303A-09-0343	Arizona American Water Company	Rate Consolidation
2.	2010	Pa PUC	R-2010-2179103	City of Lancaster – Water Fund	Revenue Requirements
3.	2012	Pa PUC	R-2012-2311725	Hanover Borough	Cost of Service/Rev Reqmts.
4.	2012	Pa PUC	R-2012-2310366	City of Lancaster – Sewer Fund	Revenue Requirements
5.	2013	Pa PUC	R-2013-2350509	City of DuBois – Bureau of Water	Revenue Requirements
6.	2013	Pa PUC	R-2013-2390244	City of Bethlehem – Bureau of Water	Revenue Requirements
7.	2014	Pa PUC	R-2014-2418872	City of Lancaster – Water Fund	Revenue Requirements
8.	2014	Pa PUC	R-2014-2428304	Hanover Borough	Revenue and Revenue Reqmts.
9.	2015	KY PSC	Case No.2015-000143	Northern Kentucky Water District	Cost of Service
10.	2016	Pa PUC	R-2016-2554150	City of DuBois – Bureau of Water	Cost of Service/Revenue Reqmts.
11.	2016	AZ CC	WS-01303A-16-0145	EPCOR Water Arizona, Inc.	Cost of service/Rate Design
12.	2017	MO PSC	WR-2017-0285	Missouri-American Water Company	Cost of Service/Rate Design
13.	2017	MO PSC	SR-2017-0286	Missouri-American Water Company	Cost of Service/Rate Design
14.	2017	VA SCC	PUR-2017-00082	Aqua Virginia, Inc.	Cost of Service/Rate Design
15.	2017	AZ CC	WS-01303A-17-0257	EPCOR Water Arizona, Inc.	Cost of Service/Rate Design
16.	2017	HI PUC	2017-0446	Hana Water Systems LLC – North	Cost of Service/Rate Design
17.	2017	HI PUC	2017-0447	Hana Water Systems LLC – South	Cost of Service/Rate Design
18.	2018	PA PUC	2018-3000834	SUEZ Water Pennsylvania, Inc.	Revenue Requirements
19.	2018	KY PSC	2018-00208	Water Service Corp. of KY	Cost of Service/Rate Design
20.	2018	WV PSC	18-0573-W-42T	West Virginia American Water Company	Cost of Service
21.	2018	IN IRC	50208	Indiana American Water Company	Cost of Service/Demand Study
22.	2018	KY PSC	2018-00291	Northern Kentucky Water District	Cost of Service/Rate Design
23.	2018	KY PSC	2018-00358	Kentucky American Water	Cost of Service/Rate Design
24.	2019	PA PUC	R-2019-3006904	Newtown Artesian Water Co.	Revenue Reqmts/Rate Design
25.	2019	PA PUC	R-2019-3010955	City of Lancaster – Sewer Fund	Rev. Reqmts/Cost of Service/Rates
26.	2020	PA PUC	R-2020-3017206	Philadelphia Gas Works	Cost of Service

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA PUBLIC UTILITY
COMMISSION**

v.

**PENNSYLVANIA-AMERICAN
WATER COMPANY**


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:
:
:
:

**DOCKET NOS. R-2020-3019369
(WATER)
R-2020-3019371
(WASTEWATER)**

VERIFICATION

I, **Constance E. Heppenstall**, hereby state that the facts set forth in the pre-marked Statement No. 12 and accompanying exhibits, if any, are true and correct to the best of my knowledge, information and belief. I understand that this verification is made subject to the provisions and penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsifications to authorities).

Date: April 29, 2020



Constance E. Heppenstall

EXHIBIT NO. 12-A - WATER OPERATIONS
EXCLUDING STEELTON WATER OPERATIONS
COST OF SERVICE AS OF DECEMBER 31, 2021
AND DECEMBER 31, 2022

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WATER OPERATIONS
EXCLUDING STEELTON WATER OPERATIONS

WATER COST OF SERVICE

ALLOCATION STUDY

AS OF DECEMBER 31, 2021 (RATE YEAR 1) AND
DECEMBER 31, 2022 (RATE YEAR 2)

AND

PROPOSED CUSTOMER RATES

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashely E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have conducted a cost of service allocation study based on pro forma revenue requirements estimated for the test year ended December 31, 2021 or Rate Year 1 and December 31, 2022 or Rate Year 2 and have prepared proposed water rate schedules designed to produce pro forma revenues more commensurate with the allocated costs.

The attached report presents the results of the allocation study, as well as supporting schedules which set forth the detailed cost allocation calculations and the proposed schedule of rates. Schedule A presents a comparison of the cost of service by customer classification with the pro forma revenues produced by each classification under present and proposed rates. The proof of revenue calculations are set forth in Exhibit No. 12-I.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink, appearing to read "C. Heppenstall", written over the printed name.

CONSTANCE E. HEPPENSTALL
Senior Project Manager, Rate Studies

A handwritten signature in black ink, appearing to read "G. R. Herbert", written over the printed name.

GREGORY R. HERBERT
Analyst, Rate Studies

CEH:mle

066548.200

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. INTRODUCTION

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER COST OF SERVICE ALLOCATION STUDY
AS OF DECEMBER 31, 2021 (RATE YEAR 1) AND
DECEMBER 31, 2022 (RATE YEAR 2) AND
PROPOSED CUSTOMER RATES

PART I. INTRODUCTION

PLAN OF REPORT

The report sets forth the results of the cost of service allocation study for the water operations based on pro forma costs as of December 31, 2021 or Rate Year 1 (RY1) and December 31, 2022 or Rate Year (RY2), for Pennsylvania- American Water Company. Part I, Introduction, contains statements with respect to the basis of the study, the procedures employed, and a summary of the results of the study. Schedule A summarizes the cost allocation for the water and wastewater operations and total revenues under present and proposed rates. Part II, Cost of Service by Customer Classification - Water Operations, presents detailed schedules of the allocation of costs to customer classifications, as well as the basis for the allocations for RY1 and RY2. Schedule A in Part II summarizes the water cost allocation and the revenues produced under present and proposed rates. Part III, Comparisons of Present and Proposed Customer Rates, sets forth the proposed RY1 and RY2 rate schedules for water and wastewater service.

BASIS OF STUDY

The purpose of the cost allocation study was to determine the relative cost of service responsibilities of the several customer classifications based on considerations of quantity of water consumed, variability of rate of consumption, and costs associated with customer metering, billing and accounting. The allocation study incorporated generally- accepted principles and procedures for allocating the several categories of cost to customer classifications in proportion to each classification's use of facilities, commodities and services required in providing water service.

ALLOCATION PROCEDURES

The allocation study was based on the Base-Extra Capacity Method for allocating costs to customer classifications. The method is described in the 2017 and prior editions of the Water Rates Manual published by the American Water Works Association. The four basic categories of cost responsibility are base, extra capacity, customer, and fire protection costs. The following discussion presents a brief description of these costs and the manner in which they were allocated.

Base Costs are costs that tend to vary with the quantity of water used, plus costs associated with supplying, treating, pumping, and distributing water to customers under average load conditions, without the elements necessary to meet peak demands. Base costs were allocated to customer classifications on the basis of average daily usage.

Extra Capacity Costs are costs associated with meeting usage requirements in excess of the average. They include operating and capital costs for additional plant and system capacity beyond that required for average use. The extra capacity costs in this study are subdivided into costs necessary to meet maximum day extra demand and costs to meet maximum hour extra demand. The extra capacity costs were allocated to customer

classifications on the bases of each classification's maximum day and hour usage in excess of average usage.

Customer Costs are costs associated with serving customers regardless of their usage or demand characteristics. Customer costs include the operating and capital costs related to meters and services, meter reading costs, and billing and collecting costs. The customer costs were allocated on the bases of the capital cost of meters and services, the man-hours required to read meters and the number of customers.

Fire Protection Costs are costs associated with providing the facilities to meet the potential peak demand of fire protection service. Fire Protection costs are subdivided into costs to meet Public Fire Protection and Private Fire Protection demands. The extra capacity costs assigned to fire protection service were allocated to Public and Private Fire Protection and Commercial General Service on the basis of the total relative demands of the hydrants, fire service lines, and commercial service lines sized to provide fire protection, as well as general service.

RESULTS OF STUDY

The results for RY1 and RY2 of the cost of service allocation studies are set forth on the following pages. The data summarized in Schedule A, Comparison of Pro Forma Cost of Service with Revenues Under Present and Proposed Rates for the Twelve Months Ended December 31, 2021 and December 31, 2022, constitute the principal results of the cost allocation studies and subsequent rate design.

The water operations cost of service by customer classification for RY1 and RY2 are shown in column 2 of Schedule A and are developed in Schedule D, Allocation of Cost of Service to Customer Classifications water operations. The allocation of the total cost of service to the several customer classifications was performed by applying the allocation

factors referenced in column 2 of Schedule D to the cost of service set forth in column 3. The bases for the allocation factors for RY1 and RY2 are presented in Schedule E. The other cost of service shown in column 3 which includes wastewater and Steelton Water Operations cost of service. This cost allocation is developed in Exhibits 12-B, 12-C, 12-D, 12-E, 12-F, 12-G and 12-H and includes the costs not recovered by wastewater rates or recovered by Steelton Water Operation rates.

Schedule F presents the calculation of the firm standby service and interruptible standby service commodity-demand rates based on the unit costs of service by function for the water operation.

Schedule G sets forth the average day, maximum day system sendout, and maximum day ratios.

Comparisons of present and proposed RY1 and RY2 rates for each of the customer classifications are set forth on Schedule H (Water Operations) is a comparison of present and proposed service charges by meter size and consumption rates by rate block, as well as a comparison of present and proposed rates for private and public fire protection service. Revenues from application of present and proposed rates to the customer bill analysis for the water and wastewater operations are presented in Exhibit No. 12-I.

PART II. RATE YEAR 1 COST OF SERVICE BY CUSTOMER CLASSIFICATION

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

COMPARISON OF PRO FORMA COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Customer Classification (1)	Cost of Service (2)	Pro Forma Cost of Service, as of December 31, 2021		Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Proposed Increase	
		Allocation of Other COS* (3)	Total Amount (4)	Percent of Total (5)	Amount (6)	Percent of Total (7)	Amount (8)	Percent of Total (9)	Amount (10) Percent Increase (11)
Residential	\$ 442,738,220	\$ 24,446,952	\$ 467,185,172	66.5%	\$ 411,275,976	66.0%	\$ 465,994,024	66.2%	\$ 54,718,048 13.3%
Commercial	166,342,736	7,499,059	173,841,795	24.7%	153,439,150	24.6%	173,365,188	24.7%	19,926,038 13.0%
Industrial	26,863,483	1,587,843	28,451,326	4.0%	25,850,899	4.1%	28,290,394	4.0%	2,439,495 9.4%
Public (Municipal)	18,048,262	904,066	18,952,328	2.7%	19,986,305	3.2%	20,894,149	3.0%	907,844 4.5%
Other Water Utilities - Group A	694,867		694,867	0.1%	667,212	0.1%	694,619	0.1%	27,408 4.1%
Other Water Utilities - Group B	231,804		231,804	0.0%	100,640	0.0%	119,850	0.0%	19,210 19.1%
Private Fire Protection	4,822,411		4,822,411	0.7%	4,179,699	0.7%	4,821,047	0.7%	641,348 15.3%
Public Fire Protection	8,607,527	190,476	8,798,003	1.3%	8,222,893	1.3%	8,798,003	1.3%	575,109 7.0%
Total Sales of Water	668,349,310	34,628,396	702,977,706	100.0%	623,722,773	100.0%	702,977,272	100.0%	79,254,499 12.7%
Other Water Revenues	10,874,802		10,874,802		10,596,199		10,874,802		278,603 2.6%
Contract Sales - Industrial	3,396,189		3,396,189		3,396,189		3,396,189		- 0.0%
Contract Sales - Resale	1,825,161		1,825,161		1,825,161		1,825,161		- 0.0%
Total	\$ 684,445,462	\$ 34,628,396	\$ 719,073,858		\$ 639,540,322		\$ 719,073,424		\$ 79,533,102 12.4%

* Includes unrecovered Wastewater Cost of Service and Steelton Cost of Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PRESENT RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	OTHER WATER UTILITIES		FIRE PROTECTION	
						GROUP A (7)	GROUP B (8)	PRIVATE (9)	PUBLIC (10)
1. REVENUES FROM SALES	\$ 623,722,773	\$ 411,275,976	\$ 153,439,150	\$ 25,850,899	\$ 19,986,305	\$ 667,212	\$ 100,640	\$ 4,179,699	\$ 8,222,893
2. OTHER REVENUES	15,817,549	11,668,069	2,870,854	415,653	291,016	10,443	3,211	103,578	454,722
3. TOTAL OPERATING REVENUES	639,540,322	422,944,045	156,310,004	26,266,552	20,277,321	677,655	103,851	4,283,277	8,677,615
4. LESS: OPERATING EXPENSES	359,897,840	254,097,739	86,738,767	13,926,069	9,444,573	349,207	105,521	2,090,640	(6,854,682)
5. RETURN AND INCOME TAXES	279,642,482	168,846,306	69,571,237	12,340,483	10,832,748	328,448	(1,670)	2,192,637	15,532,297
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	64,817,022	39,531,902	16,431,115	2,676,943	1,775,986	71,299	25,927	570,390	3,733,460
7. TAXABLE INCOME	214,825,460	129,314,405	53,140,122	9,663,540	9,056,761	257,149	(27,597)	1,622,247	11,798,837
8. LESS: INCOME TAXES (TAX. INC.)	45,982,005	27,678,915	11,374,301	2,068,418	1,938,541	55,041	(5,907)	347,231	2,525,465
9. NET RETURN (Line 5 - Line 8)	233,660,477	141,167,391	58,196,937	10,272,064	8,894,206	273,407	4,237	1,845,405	13,006,832
10. ORIGINAL COSTS MEASURE OF VALUE	3,304,569,812	2,015,539,000	837,694,798	136,620,794	90,616,304	3,732,786	1,166,666	28,993,580	190,205,878
11. RATE OF RETURN, PERCENT	7.07	7.00	6.95	7.52	9.82	7.32	0.36	6.36	6.84
12. RELATIVE RATE OF RETURN	1.00	0.99	0.98	1.06	1.39	1.04	0.05	0.90	0.97

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PROPOSED RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	OTHER WATER UTILITIES		FIRE PROTECTION	
						GROUP A (7)	GROUP B (8)	PRIVATE (9)	PUBLIC (10)
1. REVENUES FROM SALES	\$ 702,977,272	\$ 465,994,024	\$ 173,365,188	\$ 28,290,394	\$ 20,894,149	\$ 694,619	\$ 119,850	\$ 4,821,047	\$ 8,798,003
2. OTHER REVENUES	16,096,152	11,836,774	2,940,330	426,272	298,040	10,722	3,295	106,361	474,356
3. TOTAL OPERATING REVENUES	719,073,424	477,830,798	176,305,518	28,716,666	21,192,189	705,341	123,145	4,927,408	9,272,359
4. LESS: OPERATING EXPENSES	395,325,966	281,503,358	94,744,410	15,506,811	10,379,676	349,466	105,599	2,079,791	(9,343,145)
5. RETURN AND INCOME TAXES	323,747,458	196,327,440	81,561,108	13,209,854	10,812,512	355,875	17,546	2,847,617	18,615,504
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	68,553,052	41,824,217	17,371,343	2,831,241	1,878,354	75,408	27,421	603,267	3,941,800
7. TAXABLE INCOME	255,194,406	154,503,223	64,189,765	10,378,613	8,934,159	280,467	(9,876)	2,244,350	14,673,703
8. LESS: INCOME TAXES (TAX. INC.)	58,721,389	35,551,892	14,770,356	2,388,166	2,055,790	64,537	(2,272)	516,435	3,376,486
9. NET RETURN (Line 5 - Line 8)	265,026,069	160,775,548	66,790,753	10,821,688	8,756,722	291,338	19,818	2,331,182	15,239,018
10. ORIGINAL COSTS MEASURE OF VALUE	3,304,569,812	2,015,875,081	837,392,463	136,624,924	90,654,625	3,732,786	1,166,666	28,972,576	190,150,689
11. RATE OF RETURN, PERCENT	8.02	7.98	7.98	7.92	9.66	7.80	1.70	8.05	8.01
12. RELATIVE RATE OF RETURN	1.00	0.99	0.99	0.99	1.20	0.97	0.21	1.00	1.00

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
OPERATION AND MAINTENANCE EXPENSES											
Source of Supply Expenses											
---Operation---											
601.1	Salaries and Wages	2	\$ 181,586	\$ 106,446	\$ 55,838	\$ 11,276	\$ 6,592	\$ 254	\$ 91	\$ 182	\$ 908
610.1	Purchased Water	1	2,965,191	1,714,474	873,842	217,052	129,282	5,041	593	4,151	20,756
615.1	Purchased Power	1	2,430,558	1,405,349	716,285	177,917	105,972	4,132	486	3,403	17,014
616.1	Purchased Fuel	1	28,576	16,523	8,421	2,092	1,246	49	6	40	200
618.1	Chemicals	1	-	-	-	-	-	-	-	-	-
620.1	Materials and Supplies	2	31,728	18,599	9,756	1,970	1,152	44	16	32	159
631.1	Contract Services -Engineering	2	49,465	28,996	15,210	3,072	1,796	69	25	49	247
633.1	Contract Services -Legal	2	-	-	-	-	-	-	-	-	-
636.1	Contract Services -Other	2	741,618	434,736	228,048	46,054	26,921	1,038	371	742	3,708
641.1	Rental of Building	2	-	-	-	-	-	-	-	-	-
642.1	Rental of Equipment	2	656	385	202	41	24	1	-	1	3
650.1	Transportation	2	-	-	-	-	-	-	-	-	-
675.1	Miscellaneous Expenses	2	2,767,162	1,622,110	850,902	171,841	100,448	3,874	1,384	2,767	13,836
	Total Operation		9,196,540	5,347,618	2,758,504	631,315	373,433	14,502	2,972	11,367	56,831
---Maintenance---											
601.2	Salaries and Wages	2	371,193	217,593	114,142	23,051	13,474	520	186	371	1,856
620.2	Materials and Supplies	2	51,759	30,341	15,916	3,214	1,879	72	26	52	259
636.2	Contract Services	2	-	-	-	-	-	-	-	-	-
631.2	Contract Services - Engineering	2	41,725	24,459	12,830	2,591	1,515	58	21	42	209
636.2	Contract Services - Other	2	523,900	307,110	161,099	32,534	19,018	733	262	524	2,620
650.1	Transportation	2	(93)	(65)	(29)	(6)	(3)	-	-	-	-
675.2	Misc. Maintenance Expense	2	7,916	4,640	2,434	492	287	11	4	8	40
	Total Maintenance		996,400	584,088	306,392	61,876	36,170	1,394	499	997	4,984
	Total Source of Supply Expenses		10,192,940	5,931,706	3,064,896	693,191	409,603	15,896	3,471	12,364	61,815
Water Treatment Expenses											
---Operation---											
601.3	Salaries and Wages	5A	\$ 1,114,008	\$ 646,348	\$ 336,542	\$ 65,726	\$ 39,102	\$ 1,560	\$ 567	\$ 3,676	\$ 20,498
	Power and Pumping and Other Dept Exp	2	10,620,201	6,225,562	3,265,712	659,514	385,513	14,868	5,310	10,620	53,101
615.3	Purification and Laboratory	1	9,028,246	5,220,132	2,660,624	660,868	393,632	15,348	1,806	12,640	63,198
618.3	Chemicals	1	10,907,117	6,306,495	3,214,327	798,401	475,550	18,542	2,181	15,270	76,350
620.3	Materials and Supplies	6	301,201	176,383	92,469	18,614	10,903	422	151	361	1,898
631.3	Contract Services -Engineering	6	50,830	29,766	15,605	3,141	1,840	71	25	61	320
635.3	Contract Services -Testing	6	179,379	105,044	55,069	11,086	6,494	251	90	215	1,130
636.3	Contract Services -Other	6	1,102,638	645,705	338,510	68,143	39,915	1,544	551	1,323	6,947
641.3	Rental of Building	6	2,360	1,382	725	146	85	3	1	3	15
642.3	Rental of Equipment	6	48,817	28,587	14,987	3,017	1,767	68	24	59	308
650.3	Transportation	6	27,669	16,203	8,494	1,710	1,002	39	14	33	174
675.3	Miscellaneous Expenses	1	1,830,364	1,058,316	539,408	133,983	79,804	3,112	366	2,563	12,813
	Waste Disposal	6	4,605,142	2,696,771	1,413,779	284,598	166,706	6,447	2,303	5,526	29,012
	Other										
	Total Operation		39,817,972	23,156,694	11,956,251	2,708,947	1,602,313	62,275	13,379	52,350	265,764

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
---Maintenance---											
601.4	Salaries and Wages		592,454	343,742	178,980	34,955	20,795	829	296	1,955	10,901
	Power and Pumping	5A	2,731,447	1,601,174	839,920	169,623	99,152	3,824	1,366	2,731	13,657
620.4	Purification and Laboratory	2	264,343	154,694	61,021	16,257	9,543	370	132	370	1,996
636.4	Materials and Supplies	7	23,789	7,285	7,285	1,462	858	33	12	33	176
636.4	Contract Services - Other	7	828,660	484,932	253,984	50,963	29,915	1,160	414	1,160	6,132
650.4	Transportation	7	1,140	667	349	70	41	2	1	2	8
675.4	Miscellaneous Expenses - Waste Disposal	1	312,714	180,811	92,157	22,891	13,634	532	63	438	2,189
	Total Maintenance		4,754,527	2,779,930	1,453,696	296,221	173,938	6,750	2,284	6,689	35,019
	Total Water Treatment Expenses		\$ 44,572,499	\$ 25,936,624	\$ 13,409,947	\$ 3,005,168	\$ 1,776,251	\$ 69,025	\$ 15,663	\$ 59,039	\$ 300,783
Transmission & Distribution Expenses											
---Operation---											
601.5	Salaries and Wages		2,832,009	\$ 1,761,226	\$ 737,738	\$ 104,784	\$ 75,898	\$ 3,115	\$ 850	\$ 27,187	\$ 121,210
	Supervision & Other Dept. Exps.	12	2,645,334	1,523,183	754,978	118,511	78,831	3,439	1,058	24,866	140,467
8	Mains	4	112,232	65,263	31,582	4,388	3,143	146	45	1,145	6,521
	Storage Facilities	10	458,923	357,790	87,131	34,28	8,449	165	64	1,895	-
	Miscellaneous Meter Expense	11	217,384	189,068	20,938	572	1,656	24	9	5,117	-
	Services on Customer Premises	1	526,666	304,518	155,208	38,552	22,963	895	105	737	3,687
615.5	Purchased Power	12	580,301	360,889	151,168	21,471	15,552	638	174	5,571	24,837
620.5	Materials and Supplies	12	213,285	132,642	55,561	7,892	5,716	235	64	2,048	9,129
636.5	Contract Services - Engineering	12	271,858	169,068	70,819	10,059	7,286	299	82	2,610	11,636
641.5	Contract Services - Other	12	72,840	45,299	18,975	2,895	1,952	80	22	689	3,118
642.5	Rental of Building	12	40,182	24,989	10,467	1,487	1,077	44	12	386	1,720
650.5	Rental of Equipment	12	35,510	22,084	9,250	1,314	952	39	11	341	1,520
675.5	Transportation	12	2,139,214	1,330,377	557,265	79,151	57,331	2,353	642	20,536	91,558
	Miscellaneous Expenses										
	Total Operation		10,145,738	6,286,396	2,661,080	394,304	280,806	11,472	3,138	93,138	415,403
---Maintenance---											
601.6	Salaries and Wages		172,091	110,896	30,615	3,889	3,012	120	34	2,478	21,047
	Supervision and Engineering	4	36,255	21,082	10,202	1,418	1,015	47	15	370	2,106
	Structures and Improvements	8	1,385,242	797,622	395,348	62,059	41,280	1,801	554	13,021	73,556
	Mains	11	1,250,966	1,088,015	120,493	3,290	9,532	138	50	29,448	-
	Services	10	5,207	4,060	989	39	96	2	1	22	-
	Meters	4	4,730	2,751	1,331	185	132	6	2	48	275
	Storage Facilities	9	287,380	-	-	-	-	-	-	-	287,380
	Fire Hydrants	13	5,621,056	3,622,208	999,986	127,036	98,368	3,935	1,124	80,943	687,455
	Other	13	951,554	613,181	169,281	21,505	16,652	666	190	13,702	116,375
620.6	Materials and Supplies	13	1,285,025	828,070	228,606	29,042	22,488	900	257	18,504	157,159
636.6	Contract Services	13	12,198	7,860	2,170	276	213	9	2	176	1,492
637.6	Contract Services - Engineering	13	480,866	309,870	85,546	10,868	8,415	337	96	6,924	58,810
650.6	Transportation	13	1,603,267	1,033,145	285,221	36,234	28,057	1,122	321	23,087	196,080
675.6	Miscellaneous Expenses										
	Total Maintenance		13,095,837	8,438,760	2,329,788	295,841	229,260	9,083	2,646	188,723	1,601,735
	Total Transmission and Distribution Expenses		\$ 23,241,575	\$ 14,725,156	\$ 4,990,868	\$ 690,145	\$ 510,066	\$ 20,555	\$ 5,784	\$ 281,861	\$ 2,017,138

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Public Authority	Water Utilities Group A	Water Utilities Group B	Fire Protection	Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Customer Accounting Expenses											
601.7	Salaries and Wages	15	\$ 3,943,680	\$ 3,656,225	\$ 289,156	\$ 3,194	\$ 14,355	\$ 39	\$ 39	\$ 670	\$ -
	Meter Reading and Other Expense	10	2,216,912	1,728,371	420,903	16,560	40,813	798	310	9,156	-
620.7	Materials and Supplies	14	35,902	33,073	2,435	29	130	-	-	213	22
636.7	Contract Services-Other	14	217,091	199,982	14,723	178	786	2	2	1,285	132
642.7	Rental of Equipment	14	8,741	8,052	593	7	32	-	-	52	5
650.7	Transportation	14	36,804	33,903	2,496	30	133	-	-	218	22
670.7	Bad Debt	22	8,247,579	7,344,469	875,893	4,949	10,722	-	-	11,547	-
675.7	Miscellaneous Expenses	14	2,392,182	2,203,654	162,238	1,962	8,660	24	24	14,162	1,459
	Total Customer Accounting Expenses		17,098,891	15,207,729	1,748,437	26,909	75,631	863	375	37,303	1,640
Administrative and General Expenses											
601.8	Salaries and Wages	16	\$ 18,563,891	\$ 12,619,733	\$ 4,137,891	\$ 653,449	\$ 428,826	\$ 16,708	\$ 5,569	\$ 96,532	\$ 605,183
603.8	Salaries of Officers	16	-	-	-	-	-	-	-	-	-
604.8	Employee Pension and Benefits	17	10,477,151	6,944,256	2,424,413	390,798	258,786	9,429	3,143	58,672	387,655
615.8	Purchased Power	16	23,405	15,911	5,217	824	541	21	7	122	763
621	Materials and Supplies	16	806,129	548,006	179,686	28,376	18,622	726	242	4,192	26,280
631.8	Contract Services-Engineering	16	52,388	35,613	11,677	1,844	1,210	47	16	272	1,708
632.8	Contract Services-Accounting	16	804,766	547,080	179,382	28,328	18,590	724	241	4,185	26,235
633.8	Contract Services-Legal	16	1,744,193	1,185,702	388,781	61,396	40,291	1,570	523	9,070	56,861
634.8	Contract Services-Management										
	Customer Related	14	15,290,482	14,085,439	1,037,001	12,538	55,352	153	153	90,520	9,327
	Employee Related	17	4,336,064	2,873,943	1,003,365	161,735	107,101	3,902	1,301	24,282	160,434
	Water Quality Related	1	443,280	256,304	130,634	32,448	19,327	754	89	621	3,103
	Other	16	36,616,410	24,891,835	8,161,798	1,288,898	845,839	32,955	10,985	190,405	1,193,695
636.8	Contract Services-Other	16	847,309	576,001	188,865	29,825	19,573	763	254	4,406	27,822
641.8	Rental of Buildings	16	127,280	86,511	28,366	4,480	2,940	115	38	662	4,149
642.8	Rental of Equipment	16	89,203	60,640	19,883	3,140	2,061	80	27	464	2,908
650.8	Transportation	16	1,894,961	1,288,194	422,387	66,703	43,774	1,705	568	9,854	61,776
656.8	Insurance - Vehicles	16	213,709	145,279	47,636	7,523	4,937	192	64	1,111	6,967
657.8	Insurance - General Liability	16	9,095,669	6,183,236	2,027,425	320,168	210,110	8,186	2,729	47,297	296,519
658.8	Insurance - Workers Comp	17	1,455,366	964,630	336,776	54,286	35,948	1,310	437	8,150	53,849
659.8	Insurance - Other	16	2,402,106	1,632,951	535,429	84,554	55,489	2,162	721	12,491	78,309
660.8	Advertising	14	-	-	-	-	-	-	-	-	-
666.8	Amortization of Rate Case Exp.	20	695,061	444,352	167,649	27,524	18,211	695	209	5,004	31,417
667.8	Regulatory Commission	20	21,327	13,634	5,144	845	559	21	6	154	964
675.8	Miscellaneous Expenses	16	11,640,690	7,913,341	2,594,710	409,752	268,900	10,477	3,492	60,532	379,486
	Total Administrative and General Expenses		117,640,838	83,312,591	24,034,115	3,669,434	2,456,987	92,695	30,814	628,998	3,415,210
Total Operation & Maintenance Expenses											
			\$ 212,746,744	\$ 145,113,806	\$ 47,248,263	\$ 8,084,847	\$ 5,228,538	\$ 199,034	\$ 56,107	\$ 1,019,565	\$ 5,796,586

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
303.14	Water Rights - Hybernian Dam	1	\$ 490	\$ 283	\$ 144	\$ 36	\$ 21	\$ 1	\$ -	\$ 1	\$ 3
303.35	Waste Handling & Treatment Land	1	6,944	4,015	2,046	508	303	12	-	10	49
303.99	Comprehensive Planning Studies	18	957,787	583,771	243,086	39,557	26,243	1,054	383	8,429	55,264
304.15	Other Water Source Structures	2	1,081,970	634,251	332,706	67,190	39,275	1,515	541	1,082	5,410
304.20	Power and Pumping Structures	5A	3,006,185	1,744,188	908,168	177,365	105,517	4,209	1,503	9,920	55,314
304.30	Purification Buildings	2	6,342,926	3,718,223	1,950,450	393,886	230,248	8,860	3,171	6,343	31,715
304.36	Waste Handling & Treatment Structures	1	322,443	186,437	95,024	23,603	14,059	548	64	451	2,257
304.39	Purification Buildings - Tank Painting	2	3,331	1,953	1,024	207	121	5	2	3	17
304.61	Office Buildings	16	1,188,840	808,173	264,992	41,847	27,462	1,070	357	6,182	38,756
304.62	Stores, Shop and Garage Bldgs.	16	1,390,961	945,575	310,045	48,962	32,131	1,252	417	7,233	45,345
304.63	Misc. Structures and Improvements	16	84,373	57,357	18,807	2,970	1,949	76	25	439	2,751
305.00	Collecting & Impounding Reservoirs	1	2,273,155	1,314,338	689,899	166,395	99,110	3,864	455	3,182	15,912
306.00	Lake, River and Other Intakes	2	459,398	269,299	141,265	28,529	16,676	643	230	459	2,297
307.00	Wells and Springs	2	263,228	154,304	80,943	16,346	9,555	369	132	263	1,316
310.00	Power Generation Equipment	5A	538,177	312,250	162,583	31,752	18,890	753	289	1,776	9,902
311.00	Pumping Equipment Other	5	810,271	460,315	235,627	42,701	26,334	1,053	324	6,563	37,353
311.52	Pumping Equipment Source of Supply	2	449,968	263,771	138,365	27,943	16,334	630	225	450	2,250
311.53	Pumping Equipment Water Treatment	2	1,564,560	917,145	481,102	97,159	56,794	2,190	782	1,565	7,823
311.54	Pumping Equipment Transmission and Distribution	8	200,751	115,592	57,294	8,994	5,982	261	80	1,887	10,660
320.00	Purification System	2	10,885,853	6,381,287	3,347,400	676,011	395,156	15,240	5,443	10,886	54,429
330.00	Distr. Reservoirs and Standpipes	4	6,764,418	3,933,509	1,903,507	264,489	189,404	8,794	2,706	68,997	393,013
331.00	Mains and Accessories										
	10-Inch and Over	3	17,510,925	9,825,380	5,174,478	1,041,900	609,380	24,515	8,755	124,328	702,188
	Under 10-Inch	4	28,025,412	16,296,777	7,886,351	1,095,794	784,712	36,433	11,210	285,859	1,628,276
333.00	Services	11	11,442,715	9,952,187	1,102,162	30,094	87,193	1,259	458	289,362	-
334.00	Meters	10	11,748,245	9,159,284	2,230,522	87,759	216,285	4,229	1,645	48,520	-
335.00	Fire Hydrants	9	2,281,237	-	-	-	-	-	-	-	2,281,237
340.00	Office Furniture	16	334,745	227,559	74,615	11,763	7,733	301	100	1,741	10,913
340.00	Computers and Peripheral Equipment	16	4,736,675	3,219,982	1,055,805	166,731	109,417	4,263	1,421	24,631	154,416
340.00	Other Office Equipment	16	740	503	165	26	17	1	-	4	24
340.00	Computer Software	16	8,781,583	5,969,720	1,957,415	309,112	202,855	7,903	2,634	45,664	286,280
340.00	Computer Software - CIS	16	6,326,847	4,300,991	1,410,254	222,705	146,150	5,694	1,898	32,900	206,255
340.00	Computer Software - CIS	14	2,893,070	2,665,067	196,208	2,372	10,473	29	29	17,127	1,765
341.00	Transportation Equipment	16	7,021,261	4,773,053	1,565,039	247,148	162,191	6,319	2,106	36,511	228,893
342.00	Stores Equipment	16	28,890	19,639	6,440	1,017	667	26	9	150	942
343.00	Tools and work Equipment	16	1,824,038	1,239,981	406,578	64,206	42,135	1,642	547	9,485	59,464
344.00	Laboratory Equipment	2	165,555	97,048	50,908	10,281	6,010	232	83	166	828
345.00	Power Operated Equipment	16	106,309	72,269	23,696	3,742	2,456	96	32	553	3,466
346.00	Communication Equipment	16	893,075	607,112	189,066	31,436	20,630	804	288	4,644	29,114
347.00	Miscellaneous Equipment	16	829,734	564,053	164,948	29,207	19,167	747	249	1,047	27,049
348.00	Other Tangible Equipment	16	32,125	21,838	7,161	1,131	742	29	10	167	1,047
	Citizens Acquisition CIAC and CAC	4	(333,486)	(193,922)	(93,843)	(13,039)	(9,339)	(434)	(133)	(3,402)	(19,376)
	Total Depreciation Expense		\$ 143,245,719	\$ 91,624,567	\$ 34,782,445	\$ 5,499,865	\$ 3,730,439	\$ 146,507	\$ 48,431	\$ 1,038,846	\$ 6,374,617

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
	Amortizations										
	Taxes, Other Than Income										
19	Local Property and Miscellaneous		\$ (6,789,516)	\$ (4,142,284)	\$ (1,720,463)	\$ (280,407)	\$ (186,033)	\$ (7,468)	\$ (2,716)	\$ (59,748)	\$ (390,397)
19	Federal and State Payroll Taxes		\$ 1,117,073	\$ 681,526	\$ 283,066	\$ 46,135	\$ 30,608	\$ 1,229	\$ 447	\$ 9,830	\$ 64,232
17	State Capital Stock Tax		\$ 4,305,591	\$ 2,853,746	\$ 996,314	\$ 160,599	\$ 106,348	\$ 3,875	\$ 1,292	\$ 24,111	\$ 159,307
19	PUC and OCA Assessments		\$ 3,903,525	\$ 2,495,524	\$ 941,530	\$ 154,580	\$ 102,272	\$ 3,904	\$ 1,171	\$ 28,105	\$ 176,439
19	Public Utility Realty Taxes		\$ 2,168,435	\$ 1,322,962	\$ 549,481	\$ 89,556	\$ 59,415	\$ 2,385	\$ 867	\$ 19,082	\$ 124,685
	Total Taxes Other Than Income Taxes		\$ 11,494,624	\$ 7,353,758	\$ 2,770,391	\$ 450,870	\$ 298,643	\$ 11,393	\$ 3,777	\$ 81,128	\$ 524,663
	Total O&M, Depreciation, Amort, and Taxes Other than Inc.		\$ 360,697,569	\$ 239,949,847	\$ 83,080,636	\$ 13,755,175	\$ 9,071,587	\$ 349,466	\$ 105,599	\$ 2,079,791	\$ 12,305,469
19	Federal and State Income Taxes		\$ 58,721,389	\$ 35,825,920	\$ 14,880,000	\$ 2,425,193	\$ 1,608,966	\$ 64,594	\$ 23,489	\$ 516,748	\$ 3,376,480
	Utility Operating Income Available for Return		\$ 265,026,499	\$ 161,692,668	\$ 67,157,715	\$ 10,945,594	\$ 7,261,726	\$ 291,529	\$ 106,011	\$ 2,332,233	\$ 15,239,024
	Total Cost of Service - Water		\$ 684,445,457	\$ 437,468,435	\$ 165,118,351	\$ 27,125,962	\$ 17,942,279	\$ 705,589	\$ 235,099	\$ 4,928,772	\$ 30,920,973
469	Other Water Revenues - Billing and Collecting	14	\$ (641,199)	\$ (590,666)	\$ (43,486)	\$ (526)	\$ (2,321)	\$ (6)	\$ (6)	\$ (3,796)	\$ (391)
470	Other Water Revenues - Late Payment Fees	20	\$ (4,205,101)	\$ (2,668,321)	\$ (1,014,270)	\$ (166,522)	\$ (110,174)	\$ (4,205)	\$ (1,262)	\$ (30,277)	\$ (190,071)
471	Other Water Revenues - Misc. Service Revenues	14	\$ (4,646,436)	\$ (4,280,250)	\$ (315,121)	\$ (3,810)	\$ (16,820)	\$ (46)	\$ (46)	\$ (27,507)	\$ (2,834)
472	Other Water Revenues - Rents from Other Properties	16	\$ (1,382,066)	\$ (939,528)	\$ (308,063)	\$ (48,649)	\$ (31,926)	\$ (1,244)	\$ (415)	\$ (7,187)	\$ (45,055)
	Revenue from Contract Sales	20	\$ (5,221,350)	\$ (3,338,009)	\$ (1,259,390)	\$ (206,765)	\$ (136,799)	\$ (5,221)	\$ (1,566)	\$ (37,594)	\$ (236,005)
	Unrecovered Public Fire	9	\$ (21,839,090)	-	-	-	-	-	-	-	\$ (21,839,090)
	Reallocate Unrecovered Public Fire	21	\$ 21,839,090	\$ 17,106,559	\$ 4,164,715	\$ 163,793	\$ 404,023	\$ -	\$ -	\$ -	\$ -
	Total Cost of Service Related to Sales of Water		\$ 668,349,305	\$ 442,738,220	\$ 166,342,736	\$ 26,863,483	\$ 18,048,262	\$ 694,867	\$ 231,804	\$ 4,822,411	\$ 8,607,527
DA	Wastewater Allocation		\$ 32,851,567	\$ 23,799,475	\$ 7,425,676	\$ 734,432	\$ 891,984	\$ -	\$ -	\$ -	\$ -
DA	Steelton Allocation		\$ 1,776,829	\$ 647,477	\$ 73,383	\$ 853,411	\$ 12,082	\$ -	\$ -	\$ -	\$ 190,476
	Total Allocation		\$ 34,628,396	\$ 24,446,952	\$ 7,499,059	\$ 1,587,843	\$ 904,066	\$ -	\$ -	\$ -	\$ 190,476
	Total Cost of Service Including WW Alloc.		\$ 702,977,702	\$ 467,185,172	\$ 173,841,795	\$ 28,451,326	\$ 18,952,328	\$ 694,867	\$ 231,804	\$ 4,822,411	\$ 8,798,003

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED.

Factors are based on the pro forma future test year average daily consumption for each customer classification.

Customer Classification	Average Daily Consumption, 100 Gallons	Allocation Factor
(1)	(2)	(3)
Residential	669,060	0.5782
Commercial	340,912	0.2947
Industrial	84,705	0.0732
Public	50,460	0.0436
Other Water Utilities A	1,926	0.0017
Other Water Utilities B	146	0.0002
Private Fire Protection	1,622	0.0014
Public Fire Protection	8,063	0.0070
Total	1,156,895	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM DAY EXTRA CAPACITY FUNCTIONS.

(Factor 1) and the factors derived from maximum day extra capacity demand for each customer classification, as follows:

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2)x 0.7143	(4)	(5)=(4)x 0.2857	(6)=(3)+(5)
Residential	0.5782	0.4131	0.6058	0.1731	0.5862
Commercial	0.2947	0.2105	0.3396	0.0970	0.3075
Industrial	0.0732	0.0523	0.0344	0.0098	0.0621
Public	0.0436	0.0311	0.0183	0.0052	0.0363
Other Water Utilities A	0.0017	0.0012	0.0007	0.0002	0.0014
Other Water Utilities B	0.0002	0.0001	0.0012	0.0004	0.0005
Private Fire Protection	0.0014	0.0010			0.0010
Public Fire Protection	0.0070	0.0050			0.0050
Total	1.0000	0.7143	1.0000	0.2857	1.0000

The derivation of the maximum day extra capacity factors in column 4 and the basis for the column 3 and column 5 weightings are presented on the following page.

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PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM DAY EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Daily Consumption, 100 Gallons	Maximum Day Extra Capacity		
		Factor*	Rate of Flow, 100 Gallons Per Day	Allocation Factor
(1)	(2)	(3)	(4)	(5)
Residential	669,060	1.0	669,060	0.6058
Commercial	340,912	1.1	375,003	0.3396
Industrial	75,971	0.5	37,986	0.0344
Public	50,460	0.4	20,184	0.0183
Other Water Utilities A	1,926	0.4	770	0.0007
Other Water Utilities B	146	9.0	1,314	0.0012
Total	1,138,475		1,104,317	1.0000

The weighting of the factors is based on the maximum day ratio of 1.4,
based on a review of maximum day ratios experienced by the company. (See Schedule G)

	Maximum Day Ratio	Weight
Average Day	1.0	0.7143
Maximum Day Extra Capacity	0.4	0.2857
Total	1.4	1.0000

* Ratio of maximum day to average day minus 1.0.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS.

Factors are based on the weighting of the average daily consumption, the maximum day extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Fire Protection		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2) X 0.6840	(4)	(5)=(4) X 0.2736	(6)	(7)=(6) X 0.0424	(8)=(3)+ (5)+(7)
Residential	0.5782	0.3954	0.6058	0.1657			0.5611
Commercial	0.2947	0.2016	0.3396	0.0929	0.0227	0.0010	0.2955
Industrial	0.0732	0.0501	0.0344	0.0094			0.0595
Public	0.0436	0.0298	0.0183	0.0050			0.0348
Other Water Utilities A	0.0017	0.0012	0.0007	0.0002			0.0014
Other Water Utilities B	0.0002	0.0001	0.0012	0.0004			0.0005
Private Fire Protection	0.0014	0.0010			0.1448	0.0061	0.0071
Public Fire Protection	0.0070	0.0048			0.8325	0.0353	0.0401
Total	1.0000	0.6840	1.0000	0.2736	1.0000	0.0424	1.0000

The basis for the column 3, column 5 and column 7 weightings are presented on the following page.

PENNSYLVANIA AMERICAN WATER COMPANY -
WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum day ratio of 1.4 and the average pumpage for the test year ended 12/31/19. The system demand for fire protection is 20,000 gpm, for 10 hours.

	<u>Ratio</u>	<u>Rate of Flow, (GPD)</u>	<u>Weight</u>
Average Day	1.0	193,710,438	0.6840
Maximum Day Extra Capacity	<u>0.4</u>	<u>77,484,175</u>	<u>0.2736</u>
Subtotal	1.4	271,194,613	0.9576
Fire Protection		<u>12,000,000</u>	<u>0.0424</u>
Total		<u><u>283,194,613</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 6 on the preceding page are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS.

fire protection demand for each customer classification.

Customer Classification	Average Hourly Consumption			Maximum Hour Extra Capacity			Fire Protection		Allocation Factor (9)=(4)+(6)+(8)
	100 Gals. (2)	Allocation Factor (3)	Weighted Factor (4)=(3) X 0.4447	Allocation Factor (5)	Weighted Factor (6)=(5) X 0.4892	Allocation Factor (7)	Weighted Factor (8)=(7) X 0.0661		
Residential	27,877.5	0.5782	0.2570	0.6633	0.3245			0.5815	
Commercial	14,204.7	0.2947	0.1311	0.3042	0.1488	0.0227	0.0015	0.2814	
Industrial	3,529.4	0.0732	0.0326	0.0132	0.0065			0.0391	
Public	2,102.5	0.0436	0.0194	0.0175	0.0086			0.0280	
Other Water Utilities A	80.3	0.0017	0.0008	0.0011	0.0005			0.0013	
Other Water Utilities B	6.1	0.0002	0.0001	0.0007	0.0003			0.0004	
Private Fire Protection	67.6	0.0014	0.0006			0.1448	0.0096	0.0102	
Public Fire Protection	336.0	0.0070	0.0031			0.8325	0.0550	0.0581	
Total	48,204.0	1.0000	0.4447	1.0000	0.4892	1.0000	0.0661	1.0000	

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum hour ratio of 2.1, and the average pumpage for the test year ended 12/31/2019. The system demand for fire protection is 20,000 gpm.

	<u>Ratio</u>	<u>Rate of Flow, (GPM)</u>	<u>Weight</u>
Average Hour	1.0	134,521	0.4447
Maximum Hour Extra Capacity	<u>1.1</u>	<u>147,973</u>	<u>0.4892</u>
Subtotal	2.1	282,494	0.9339
Fire Protection		<u>20,000</u>	<u>0.0661</u>
Total		<u><u>302,494</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 7 of Factor 4 are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service..

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Hourly Consumption 100 Gals.	Maximum Hour Extra Capacity		
		Factor*	Rate, 100 Gals. Per Hour	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
Residential	27,877.5	4.0	111,510.0	0.6633
Commercial	14,204.7	3.6	51,136.8	0.3042
Industrial	3,165.5	0.7	2,215.9	0.0132
Public	2,102.5	1.4	2,943.5	0.0175
Other Water Utilities A	80.3	2.2	176.6	0.0011
Other Water Utilities B	6.1	19.0	115.5	0.0007
Total	47,436.5		168,098.2	1.0000

* Ratio Of Maximum Hour To Average Hour Minus 1.0.

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PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM
HOUR EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

BASIS FOR ALLOCATING DEMAND RELATED COSTS OF FIRE SERVICE TO COMMERCIAL,
PRIVATE FIRE PROTECTION AND PUBLIC FIRE PROTECTION CUSTOMER CLASSIFICATIONS

Description	Restrictive Diameters Squared	Quantity	Relative Demand	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
<u>General Service - Commercial</u>				
4 -inch meter	16.00	249	3,984	
6 -inch meter	36.00	357	12,852	
8 -inch meter	64.00	<u>77</u>	<u>4,928</u>	
		683	21,764	0.0227
<u>Private Fire Protection</u>				
<u>Fire Lines</u>				
1 -inch fire line	1.00	14	14	
1.25 -inch fire line	1.56	2	3	
1.5 -inch fire line	2.25	6	14	
2 -inch fire line	4.00	82	328	
3 -inch fire line	9.00	26	234	
4 -inch fire line	16.00	360	5,760	
6 -inch fire line	36.00	1,258	45,288	
8 -inch fire line	64.00	624	39,936	
10 -inch fire line	100.00	60	6,000	
12 -inch fire line	144.00	19	2,736	
Hydrants	25.00	<u>1,537</u>	<u>38,425</u>	
Total Private Fire Protection		3,988	138,738	0.1448
<u>Public Fire Protection</u>				
Total Fire Hydrants	20.75 Avg.	<u>38,427</u>	<u>797,360</u>	
Total Public Fire Protection		<u>38,427</u>	<u>797,360</u>	<u>0.8325</u>
Total Fire Protection		<u><u>43,098</u></u>	<u><u>957,862</u></u>	<u><u>1.0000</u></u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING EQUIPMENT OTHER

Factors are based on the weighting of the maximum daily consumption with fire, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows.

Customer Classification	Maximum Daily Consumption		Maximum Hourly Consumption		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.6667	(4)	(5)=(4)x 0.3333	(6)=(3)+5
Residential	0.5611	0.3742	0.5815	0.1939	0.5681
Commercial	0.2955	0.1970	0.2814	0.0938	0.2908
Industrial	0.0595	0.0397	0.0391	0.0130	0.0527
Public	0.0348	0.0232	0.0280	0.0093	0.0325
Other Water Utilities A	0.0014	0.0009	0.0013	0.0004	0.0013
Other Water Utilities B	0.0005	0.0003	0.0004	0.0001	0.0004
Private Fire Protection	0.0071	0.0047	0.0102	0.0034	0.0081
Public Fire Protection	0.0401	0.0267	0.0581	0.0194	0.0461
Total	1.0000	0.6667	1.0000	0.3333	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5A. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING FACILITIES.

Factors are based on the a composite of rate base costs related to pumping equipment.

Customer Classification	Account 311 Original Cost Measure of Value	Allocation Factor
(1)	(2)	(3)
Residential	\$ 36,386,352	0.5802
Commercial	18,940,098	0.3021
Industrial	3,701,875	0.0590
Public	2,198,602	0.0351
Other Water Utilities A	85,756	0.0014
Other Water Utilities B	29,324	0.0005
Private Fire Protection	207,546	0.0033
Public Fire Protection	1,152,647	0.0184
Total	<u>\$ 62,702,200</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 6. ALLOCATION OF WATER TREATMENT OPERATION EXPENSES.

Factors are based on the allocation of water treatment operation salaries and wages, as follows:

Customer Classification (1)	Water Treatment Operation Salaries and Wages (2)	Allocation Factor (3)
Residential	\$ 6,871,910	0.5856
Commercial	3,602,254	0.3070
Industrial	725,240	0.0618
Public	424,615	0.0362
Other Water Utilities A	16,428	0.0014
Other Water Utilities B	5,867	0.0005
Private Fire Protection	14,296	0.0012
Public Fire Protection	73,599	0.0063
Total	<u>\$ 11,734,209</u>	<u>1.0000</u>

FACTOR 7. ALLOCATION OF WATER TREATMENT MAINTENANCE EXPENSES.

Factors are based on the allocation of water treatment maintenance salaries and wages, as follows:

Customer Classification (1)	Water Treatment Maintenance Salaries and Wages (2)	Allocation Factor (3)
Residential	\$ 1,944,916	0.5852
Commercial	1,018,900	0.3065
Industrial	204,578	0.0615
Public	119,947	0.0361
Other Water Utilities A	4,653	0.0014
Other Water Utilities B	1,662	0.0005
Private Fire Protection	4,686	0.0014
Public Fire Protection	24,558	0.0074
Total	<u>\$ 3,323,900</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 8. ALLOCATION OF COSTS ASSOCIATED WITH MAINS.

Factors are based on the weighting of the maximum daily consumption, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows:

Customer Classification	10-inch and Larger		Under 10-inch		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.2770	(4)	(5)=(4)x 0.7230	(6)=(3)+(5)
Residential	0.5611	0.1554	0.5815	0.4204	0.5758
Commercial	0.2955	0.0819	0.2814	0.2035	0.2854
Industrial	0.0595	0.0165	0.0391	0.0283	0.0448
Public	0.0348	0.0096	0.0280	0.0202	0.0298
Other Water Utilities A	0.0014	0.0004	0.0013	0.0009	0.0013
Other Water Utilities B	0.0005	0.0001	0.0004	0.0003	0.0004
Private Fire Protection	0.0071	0.0020	0.0102	0.0074	0.0094
Public Fire Protection	0.0401	0.0111	0.0581	0.0420	0.0531
Total	1.0000	0.2770	1.0000	0.7230	1.0000

The weighting of the factors is based on the length of transmission mains and distribution mains, as follows:

	Length of Mains (Feet)	Weight
10-inch and Larger	14,824,111	0.2770
Under 10-inch	38,694,833	0.7230
Total	53,518,944	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 9. ALLOCATION OF COSTS ASSOCIATED WITH FIRE HYDRANTS.

These costs are assigned directly to Public Fire Protection.

Customer Classification	Allocation Factor
(1)	(2)
Public Fire Protection	1.0000

FACTOR 10. ALLOCATION OF COSTS ASSOCIATED WITH METERS.

Factors are based on the relative cost of meters by size and customer classification, as developed on the following page and summarized below.

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	633,038	0.77963
Commercial	154,164	0.18986
Industrial	6,067	0.00747
Public	14,951	0.01841
Other Water Utilities A	295	0.00036
Other Water Utilities B	111	0.00014
Private Fire Protection	3,352	0.00413
Total	811,978	1.00000

FACTOR 11. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES.

Factors are based on the relative cost of services by size and customer classification, as developed on the second of the following pages, and summarized below.

Customer Classification	3/4" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	612,870	0.86974
Commercial	67,871	0.09632
Industrial	1,854	0.00263
Public	5,369	0.00762
Other Water Utilities A	76	0.00011
Other Water Utilities B	25	0.00004
Private Fire Protection	16,590	0.02354
Total	704,655	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size (1)	5/8" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Other Water Utilities A		Other Water Utilities B		Private Fire Protection		Total	
		Number of Meters (3)	Weighting (4)=(2)X(3)	Number of Meters (5)	Weighting (6)=(2)X(5)	Number of Meters (7)	Weighting (8)=(2)X(7)	Number of Meters (9)	Weighting (10)=(2)X(9)	Number of Meters (11)	Weighting (12)=(2)X(11)	Number of Meters (13)	Weighting (14)=(2)X(13)	Number of Meters (15)	Weighting (16)=(2)X(15)	Number of Meters (17)	Weighting (18)
5/8	1.0	608,391	608,391	28,662	28,662	47	47	824	824	0	0	0	0	0	0	637,924	637,924
3/4	1.5	866	1,299	1,794	2,691	6	9	55	83	0	0	0	0	0	0	2,721	4,082
1	2.0	11,075	22,150	6,761	13,522	93	186	468	936	0	0	0	0	14	28	18,411	36,822
1-1/2	2.2	189	416	1,285	2,827	43	95	79	174	0	0	0	0	2	4	1,598	3,516
2	3.5	122	427	3,638	12,733	164	574	601	2,104	1	4	3	11	30	105	4,559	15,958
3	7.0	0	0	115	805	13	91	28	196	0	0	1	7	11	77	168	1,176
4	20.8	8	166	1,504	31,283	64	1,331	137	2,850	1	21	3	62	36	749	1,753	36,462
6	30.8	4	123	1,392	42,874	66	2,033	194	5,975	4	123	1	31	56	1,725	1,717	52,884
8	33.1	2	66	485	16,054	37	1,225	46	1,523	3	99	0	0	10	331	583	19,298
10	47.6	0	0	57	2,713	10	476	6	286	1	48	0	0	7	333	81	3,856
Total		620,657	633,038	45,693	154,164	543	6,067	2,438	14,951	10	295	8	111	166	3,352	669,515	811,978

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
BASIS FOR ALLOCATING SERVICE COSTS TO CUSTOMER CLASSIFICATIONS

Service Size (1)	3/4" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Other Water Utilities A		Other Water Utilities B		Private Fire Protection		Total	
		Number of Services (3)	Weighting (4)=(2)X(3)	Number of Services (5)	Weighting (6)=(2)X(5)	Number of Services (7)	Weighting (8)=(2)X(7)	Number of Services (9)	Weighting (10)=(2)X(9)	Number of Services (11)	Weighting (12)=(2)X(11)	Number of Services (13)	Weighting (14)=(2)X(13)	Number of Services (15)	Weighting (16)=(2)X(15)	Number of Services (17)	Weighting (18)
3/4 & 1"	1.00	612,128 *	612,128	36,743 **	36,743	146	146	1,347	1,347	0	0	0	0	16	16	650,380	650,380
1-1/2	1.10	189	208	1,285	1,414	43	47	79	87	0	0	0	0	6	7	1,602	1,763
2	3.30	122	403	3,638	12,005	164	541	601	1,983	1	3	3	10	82	271	4,611	15,216
3	3.10	0	0	115	357	13	40	28	87	0	0	1	3	26	81	183	568
4	2.80	8	22	1,504	4,211	64	179	137	384	1	3	3	8	360	1,008	2,077	5,815
6	3.70	8	30	1,392	5,150	66	244	194	718	4	15	1	4	1,258	4,655	2,923	10,816
8	15.50	4	62	485	7,518	37	574	46	713	3	47	0	0	624	9,672	1,199	18,586
10	8.30	2	17	57	473	10	83	6	50	1	8	0	0	60	498	136	1,129
12	20.10	0	0	0	0	0	0	0	0	0	0	0	0	19	382	19	382
Total		612,461	612,870	45,219	67,871	543	1,854	2,438	5,369	10	76	8	25	2,451	16,590	663,130	704,655

* Reduced by 8,204 service lines.

** Reduced by 474 service lines.

474

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 12. ALLOCATION OF TRANSMISSION AND DISTRIBUTION OPERATION SUPERVISION
AND ENGINEERING AND OTHER OPERATION DEPARTMENT EXPENSES.

The factors are based on the allocation of Transmission and Distribution Operation Salaries
and Wages, as follows:

Customer Classification	Transmission & Distribution Operation Salaries & Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 2,135,304	0.6219
Commercial	894,629	0.2605
Industrial	126,899	0.0370
Public	92,079	0.0268
Other Water Utilities A	3,774	0.0011
Other Water Utilities B	1,176	0.0003
Private Fire Protection	33,023	0.0096
Public Fire Protection	146,988	0.0428
Total	<u>\$ 3,433,872</u>	<u>1.0000</u>

FACTOR 13. ALLOCATION OF TRANSMISSION AND DISTRIBUTION MAINTENANCE SUPERVISION
AND ENGINEERING AND OTHER MAINTENANCE DEPARTMENT EXPENSES.

The factors are based on the allocation of Transmission and Distribution Maintenance Salaries
and Wages, as follows:

Customer Classification	Transmission & Distribution Maintenance Salaries & Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 1,913,530	0.6444
Commercial	528,363	0.1779
Industrial	66,991	0.0226
Public	52,055	0.0175
Other Water Utilities A	1,994	0.0007
Other Water Utilities B	622	0.0002
Private Fire Protection	42,909	0.0144
Public Fire Protection	363,317	0.1223
Total	<u>\$ 2,969,781</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 14. ALLOCATION OF CUSTOMER ACCOUNTING, BILLING AND COLLECTING COSTS.

Factors are based on the pro forma number of customers, as follows:

Customer Classification	Proforma Number of Customers	Allocation Factor
(1)	(2)	(3)
Residential	620,657	0.92119
Commercial	45,693	0.06782
Industrial	543	0.00082
Public	2,438	0.00362
Other Water Utilities A	10	0.00001
Other Water Utilities B	8	0.00001
Private Fire Protection	3,988	0.00592
Public Fire Protection	409	0.00061
Total	673,746	1.00000

FACTOR 15. ALLOCATION OF METER READING COSTS.

Factors are based on the number of meters by class.

Customer Classification	Pro Forma Number of Meters	Allocation Factor
(1)	(2)	(3)
Residential	620,657	0.92711
Commercial	45,693	0.06825
Industrial	543	0.00081
Public	2,438	0.00364
Other Water Utilities A	10	0.00001
Other Water Utilities B	8	0.00001
Private Fire Protection	111	0.00017
Total	669,460	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 16. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSES.

The factors are based on the allocation of all other operation and maintenance expenses excluding purchased water, power, fuel, chemicals and waste disposal expenses.

Customer Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
Residential	\$ 45,594,597	0.6798
Commercial	14,953,876	0.2229
Industrial	2,363,657	0.0352
Public	1,549,468	0.0231
Other Water Utilities A	58,688	0.0009
Other Water Utilities B	19,687	0.0003
Private Fire Protection	351,325	0.0052
Public Fire Protection	2,185,169	0.0326
Total	<u>\$ 67,076,467</u>	<u>1.0000</u>

FACTOR 16A. ALLOCATION OF CASH WORKING CAPITAL - EXPENSES

The functions are based on the allocation of all other operation and maintenance expenses excluding regulatory commission expense.

Customer Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
Residential	\$ 144,655,820	0.6822
Commercial	47,075,470	0.2220
Industrial	8,056,478	0.0380
Public	5,209,768	0.0246
Other Water Utilities A	198,318	0.0009
Other Water Utilities B	55,892	0.0003
Private Fire Protection	1,014,407	0.0048
Public Fire Protection	5,764,205	0.0272
Total	<u>\$ 212,030,358</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 17. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

The factors are based on the allocation of direct salaries and wages as follows:

Customer Classification	Salaries and Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 36,688,358	0.6628
Commercial	12,810,415	0.2314
Industrial	2,066,947	0.0373
Public	1,370,034	0.0247
Other Water Utilities A	52,338	0.0009
Other Water Utilities B	17,530	0.0003
Private Fire Protection	312,433	0.0056
Public Fire Protection	2,046,121	0.0370
Total	<u>\$55,364,176</u>	<u>1.0000</u>

FACTOR 18. ALLOCATION OF ORGANIZATION, FRANCHISES AND CONSENTS, OTHER INTANGIBLE PLANT AND OTHER RATE BASE ELEMENTS.

The factors are based on the allocation of the original cost less depreciation other than those items being allocated, as follows:

Customer Classification	Original Cost Less Depreciation	Allocation Factor
(1)	(2)	(3)
Residential	\$ 2,583,293,656	0.6095
Commercial	1,075,669,698	0.2538
Industrial	175,232,924	0.0413
Public	116,320,429	0.0274
Other Water Utilities A	4,768,298	0.0011
Other Water Utilities B	1,542,369	0.0004
Private Fire Protection	37,301,066	0.0088
Public Fire Protection	244,676,467	0.0577
Total	<u>\$ 4,238,804,907</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 19. ALLOCATION OF INCOME TAXES AND INCOME AVAILABLE FOR RETURN.

The factors are based on the allocation of the original cost measure of value rate base as shown on the following pages and summarized below:

Customer Classification (1)	Original Cost Measure of Value (2)	Allocation Factor (3)
Residential	\$ 2,015,875,081	0.6101
Commercial	837,392,463	0.2534
Industrial	136,624,924	0.0413
Public	90,654,625	0.0274
Other Water Utilities A	3,732,786	0.0011
Other Water Utilities B	1,166,666	0.0004
Private Fire Protection	28,972,576	0.0088
Public Fire Protection	190,150,689	0.0575
Total	<u>\$ 3,304,569,810</u>	<u>1.0000</u>

FACTOR 20. ALLOCATION OF REGULATORY COMMISSION EXPENSES, ASSESSMENTS AND OTHER WATER REVENUES.

The factors are based on the allocation of the total cost of service, excluding those items being allocated.

Customer Classification (1)	Total Cost of Service (2)	Allocation Factor (3)
Residential	\$ 434,514,925	0.6393
Commercial	164,004,028	0.2412
Industrial	26,943,013	0.0396
Public	17,821,237	0.0262
Other Water Utilities A	700,969	0.0010
Other Water Utilities B	233,713	0.0003
Private Fire Protection	4,895,509	0.0072
Public Fire Protection	30,712,153	0.0452
Total	<u>\$ 679,825,547</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
Nondepreciable Plant											
301.00	Organization	18	\$ 766,405	\$ 467,124	\$ 194,514	\$ 31,653	\$ 21,000	\$ 843	\$ 307	\$ 6,744	\$ 44,222
302.00	Franchises and Consents	18	2,404,599	1,465,603	610,287	99,310	65,886	2,645	962	21,160	138,745
303.00	Other Intangible Plant	18	1,392,492	848,724	353,414	57,510	38,154	1,532	557	12,254	80,347
303.11	Water Rights	1	-	-	-	-	-	-	-	-	-
303.12	Reservoir Land	1	-	-	-	-	-	-	-	-	-
303.13	Other Sources of Supply Land	2	4,315,318	2,451,532	1,254,895	227,417	140,248	5,610	1,726	34,954	198,936
303.20	Power and Pumping Land	5	15,412	9,034	4,739	957	559	22	8	15	77
303.30	Purification Land	2	3,508,143	2,019,988	1,001,224	157,165	104,543	4,561	1,403	32,977	186,282
303.40	Transmission and Distribution Land	8	9,053,160	5,264,411	2,547,559	353,979	253,488	11,769	3,621	92,342	525,989
303.50	Distr. Reservoir & Standpipe Land	4	5,260,833	3,576,314	1,172,640	185,181	121,525	4,735	1,578	27,356	171,503
303.61	Office Land	16	-	-	-	-	-	-	-	-	-
303.62	Stores, Shop and Garage Land	16	-	-	-	-	-	-	-	-	-
Total Nondepreciable Plant			26,716,363	16,102,730	7,139,272	1,113,172	745,403	31,717	10,162	227,802	1,346,101
Depreciable Plant											
303.14	Water Rights - Hibernia Dam	1	-	-	-	-	-	-	-	-	-
303.35	Waste Handling & Treatment Plant	1	9,253	5,349	2,727	677	403	16	2	13	65
304	Comprehensive Planning Studies	18	2,139,004	1,303,723	542,879	88,341	58,609	2,353	856	18,823	123,421
304.15	Other Water Source Structures	2	34,334,782	20,127,048	10,557,946	2,132,190	1,246,353	48,069	17,167	34,335	171,674
304.20	Power and Pumping Structures	5A	97,823,181	66,734,973	21,716,746	3,717,281	2,406,450	88,041	29,347	469,551	2,660,791
304.30	Purification Buildings	2	188,102,753	110,265,834	57,841,597	11,681,181	6,828,130	263,344	94,051	188,103	940,514
304.36	Waste Handling & Treatment Structures	1	5,514,973	3,188,758	1,625,263	403,696	240,453	9,375	1,103	7,721	38,605
304.38	Waste Handling & Treatment Structure f	1	9,352	5,408	2,756	685	408	16	2	13	65
304.39	Purification Buildings - Tank Painting	2	13,323	7,810	4,097	827	484	19	7	13	67
304.61	Office Buildings	16	35,244,834	23,959,438	7,856,074	1,240,618	814,156	31,720	10,573	183,273	1,148,982
304.62	Stores, Shop and Garage Bldgs	16	40,310,233	27,402,896	8,985,151	1,418,920	931,166	36,279	12,093	209,613	1,314,114
304.63	Misc. Structures and Improvements	16	1,901,833	1,292,866	423,919	66,945	43,932	1,712	571	9,890	62,000
305.00	Collecting & Impounding Reservoirs	1	115,591,873	66,635,221	34,064,925	8,461,325	5,039,806	196,506	23,118	161,829	809,143
306.00	Lake, River and Other Intakes	2	12,474,541	7,312,576	3,835,921	774,669	452,826	17,464	6,237	12,475	62,373
307.00	Wells and Springs	2	7,044,893	4,129,715	2,166,305	437,488	255,730	9,863	3,522	7,045	35,224
310.00	Power Generation Equipment	5A	13,961,406	9,524,470	3,099,432	530,533	343,451	12,565	4,188	67,015	379,750
311.20	Pumping Equipment Other	5	20,266,238	11,513,250	5,889,422	1,068,031	658,653	26,346	8,106	164,157	934,274
311.52	Pumping Equipment Source of Supply	2	11,346,375	6,651,245	3,489,010	704,610	411,873	15,885	5,673	11,346	56,732
311.53	Pumping Equipment Water Treatment	2	26,325,670	15,432,108	8,095,144	1,634,824	955,622	36,856	13,163	26,326	131,628
311.54	Pumping Equipment T&D	6	4,763,916	2,789,749	1,462,522	294,410	172,454	6,669	2,382	5,717	30,013
320.00	Purification System	2	233,283,602	136,750,847	71,734,707	14,486,912	8,468,195	326,597	116,642	233,284	1,166,418
330.00	Distr. Reservoirs and Standpipes	4	122,756,607	71,382,967	34,543,709	4,799,783	3,437,185	159,584	49,103	1,252,117	7,132,159
331.00	Mains and Accessories	4	-	-	-	-	-	-	-	-	-
10-inch and Over			931,637,033	522,741,539	275,298,743	55,432,403	32,420,969	1,304,292	485,819	6,614,623	37,358,645
Under 10-inch			1,491,041,226	867,040,473	419,579,001	58,289,712	41,749,154	1,936,354	596,416	15,208,621	86,629,495
333.00	Services	11	469,532,539	408,371,230	45,225,374	1,234,871	3,577,838	51,649	18,761	11,052,796	-

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities Group A	Other Water Utilities Group B	Private Fire Protection	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
334.00	Meters	10	121,095,223	94,409,469	22,991,139	904,581	2,229,363	43,594	16,953	500,123	-
335.00	Fire Hydrants	9	96,369,957	-	-	-	-	-	-	-	98,369,957
340.00	Office Furniture	16	5,248,514	3,567,940	1,169,894	184,748	121,241	4,724	1,575	27,292	171,102
340.00	Computers and Peripheral Equipment	16	15,296,342	10,398,454	3,409,555	538,431	353,346	13,767	4,569	79,541	498,661
340.00	Other Office Equipment	16	5,917	4,022	1,319	208	137	5	2	31	193
340.00	Computer Software	16	24,638,031	16,748,933	5,491,817	867,259	569,139	22,174	7,391	128,118	803,200
340.00	Computer Software - CIS	16	11,040,085	7,505,950	2,460,835	388,611	255,026	9,936	3,312	57,408	359,907
341.00	Transportation Equipment	14	5,048,287	4,650,431	342,375	4,140	18,275	50	50	23,866	3,079
342.00	Stores Equipment	16	26,755,378	18,168,306	5,963,774	941,789	618,049	24,080	8,027	139,128	872,225
343.00	Tools and work Equipment	16	365,486	248,457	81,467	12,865	8,443	329	110	1,901	11,915
344.00	Laboratory Equipment	2	1,541,208	16,590,811	5,439,970	859,071	563,765	21,965	7,322	126,908	795,617
345.00	Power Operated Equipment	16	807,292	903,456	473,921	95,709	55,946	2,158	771	1,541	7,706
346.00	Communication Equipment	16	8,660,990	548,797	179,945	28,417	18,648	727	242	4,198	26,318
347.00	Miscellaneous Equipment	16	9,707,286	5,887,741	1,930,535	304,867	200,069	7,795	2,598	45,037	282,348
348.00	Other Tangible Equipment	16	376,180	6,599,013	2,163,754	341,696	224,238	8,737	2,912	50,478	316,458
	Total Depreciable Plant		4,218,791,046	2,571,276,100	1,070,231,520	174,396,566	115,758,675	4,743,954	1,534,889	37,132,245	243,717,101
	Total Utility Plant in Service (Net)		4,245,507,409	2,587,378,830	1,077,370,792	175,509,738	116,504,078	4,775,671	1,545,051	37,360,047	245,063,202
Other Rate Base Elements											
18	Materials and Supplies		10,331,405	6,296,990	2,622,111	426,687	283,080	11,365	4,133	90,916	596,122
16A	Cash Working Capital - Expenses		20,089,831	13,705,283	4,459,942	763,414	494,210	18,081	6,027	96,431	546,443
18	Cash Working Capital - Interest		(7,402,977)	(4,512,114)	(1,878,876)	(305,743)	(202,842)	(8,143)	(2,961)	(65,146)	(427,152)
18	Accrued and Prepaid Taxes		5,100,928	3,109,016	1,294,616	210,668	139,765	5,611	2,040	44,888	294,324
4	Extension Deposits in Suspense		(18,942)	(11,015)	(5,330)	(741)	(530)	(25)	(8)	(193)	(1,101)
18	Unamortized Investment Tax Credit		(268,499)	(163,650)	(68,145)	(11,089)	(7,357)	(295)	(107)	(2,363)	(15,492)
18	Deferred Taxes		(937,842,759)	(571,615,162)	(238,024,492)	(38,732,906)	(25,696,892)	(1,031,627)	(375,137)	(8,253,016)	(54,113,527)
4	Citizens Acquisition CIAC & CAC		(19,166,263)	(11,145,182)	(5,393,386)	(749,401)	(536,655)	(24,916)	(7,667)	(195,496)	(1,113,560)
18	Tax Cost and Jobs Act- Stub Period		(18,661,441)	(11,496,046)	(4,767,034)	(778,976)	(516,803)	(20,746)	(7,545)	(165,981)	(1,086,305)
18	Other Additions		443,352	270,223	112,523	18,310	12,148	488	177	3,901	25,581
18	Other Deductions		(842,243)	(513,347)	(213,761)	(34,785)	(23,077)	(926)	(337)	(7,412)	(48,597)
18	Acquisition Adjustments		7,500,012	4,571,257	1,903,503	309,750	205,500	8,250	3,000	66,000	432,751
	Total Other Rate Base Elements		(940,937,596)	(571,503,749)	(239,978,329)	(38,884,814)	(25,849,453)	(1,042,885)	(378,365)	(8,387,471)	(54,912,513)
	Total Original Cost Rate Base		3,304,569,812	2,015,875,081	837,392,463	136,624,924	90,654,625	3,732,786	1,166,666	28,972,576	190,150,689

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 21. ALLOCATION OF UNRECOVERED PUBLIC FIRE PROTECTION.

Factors are based on the relative cost of meters by size for the Residential, Commercial, Industrial, and Public classifications, as follows:

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	\$ 633,038	0.7833
Commercial	154,164	0.1907
Industrial	6,067	0.0075
Public	14,951	0.0185
Total	<u>\$ 808,218</u>	<u>1.0000</u>

FACTOR 22. ALLOCATION OF BAD DEBT EXPENSE.

Factors are based on the historic net charge offs by class.

Customer Classification	Net Charge Off	Allocation Factor
(1)	(2)	(3)
Residential	\$ 9,034,372	0.8905
Commercial	1,077,420	0.1062
Industrial	5,682	0.0006
Public	13,347	0.0013
Other Water Utilities A	-	0.0000
Other Water Utilities B	-	0.0000
Private Fire Protection	14,343	0.0014
Public Fire Protection	-	0.0000
Total	<u>\$ 10,145,164</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

CALCULATION OF COMMODITY/DEMAND RATES FOR STANDBY SERVICE
UNDER PROPOSED LEVEL OF REVENUE

Firm Standby Service:

Description	Cost of Service		Units Hundred Gals.	Cost Per Unit
	Annual	Per Month		
Total Base Costs	\$ 322,240,362			
Less: Variable Costs	<u>27,793,985</u>		418,731,318	\$ 0.0664 Per Hundred Gallons
Fixed Base Costs	294,446,377	24,537,198	1,147,209 Avg Day	21.3886 Per Hundred of Avg. Day
Max Day Extra Capacity	76,892,807	6,407,734	2,251,526 Peak Day	2.8460 Per Hundred of Peak Day
Max Hour Extra Capacity	99,585,778	8,298,815	261,912 Peak Hour	31.6855 Per Hundred of Peak Hour

Interruptible Standby Service:

Description	Cost of Service		Units Hundred Gals.	Cost Per Unit
	Annual	Per Month		
Fixed Base Costs	\$ 294,446,377			
Less: Depreciation Return and Taxes	<u>215,711,112</u>			
Total	78,735,265	6,561,272	1,147,209 Avg Day	\$ 5.7193 Per Hundred of Avg. Day
Max Day Extra Capacity	76,892,807			
Less: Depreciation Return and Taxes	<u>52,105,567</u>			
Total	24,787,240	2,065,603	2,251,526 Peak Day	0.9174 Per Hundred of Peak Day
Max Hour Extra Capacity	99,585,778			
Less: Depreciation Return and Taxes	<u>82,553,506</u>			
Total	17,032,272	1,419,356	261,912 Peak Hour	5.4191 Per Hundred of Peak Hour
Depreciation, Return & Taxes for Base, Max Day and Max Hour	350,370,185			
Plus: Variable Costs	<u>27,793,985</u>			
Total	378,164,170		418,731,318	0.9031 Per Hundred Gallons

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

SUMMARY OF AVERAGE AND MAXIMUM DAY SYSTEM SENDOUT AND MAXIMUM DAY RATIOS

Year	Average Daily Sendout (MGD)	Maximum Day Sendout (MGD)	Ratio, Maximum to Average
1987	153.4	207.7	1.35
1988	152.7	209.1	1.37
1989	144.8	188.6	1.30
1990	144.9	192.5	1.33
1991	145.1	192.3	1.32
1992	141.5	181.4	1.28
1993	138.7	184.3	1.33
1994	149.4	202.1	1.35
1995	144.1	198.5	1.38
1996	211.4	290.9	1.38
1997	220.3	297.7	1.35
1998	212.2	279.6	1.32
1999	199.1	275.0	1.38
2000	207.5	263.6	1.27
2001	200.5	249.5	1.24
2002	210.4	259.6	1.23
2003	199.8	273.7	1.37
2004	218.1	279.7	1.28
2005	215.3	268.2	1.25
2006	210.1	259.8	1.24
2007	220.9	266.6	1.21
2008	212.4	254.3	1.20
2009	206.0	267.8	1.30
2010	205.8	262.4	1.28
2011	202.3	240.0	1.19
2012	194.0	236.3	1.22
2013	192.7	221.3	1.15
2014	195.7	222.7	1.14
2015	194.7	226.7	1.16
2016	190.7	214.0	1.12
2017	184.8	207.3	1.12
2018	192.2	220.3	1.15
2019	193.7	215.8	1.11

PENNSYLVANIA AMERICAN WATER COMPANY
COMPARATIVE SCHEDULE OF PRESENT AND 2021 PROPOSED RATES
RESIDENTIAL, COMMERCIAL AND MUNICIPAL

Present Rates Per Month							2021 Proposed Rates						
		Zone 1 PAWC	Zone 2	Zone 3 - McEwensville	Zone 4 - Turbotville	Zone 5 - Steelton	Winola	Zone 1 PAWC	Zone 2	Zone 3 - McEwensville	Zone 4 - Turbotville	Zone 5 - Steelton	Winola
Residential													
Customer Charges		\$	\$	\$	\$	\$		\$	\$	\$	\$	\$	
5/8	3/4	16.50	25.00	16.50	41.03	14.78	**	18.00	18.00	18.00	18.00	17.74	
1	1	41.60	41.60	25.00	41.03	14.78	**	18.00	18.00	18.00	18.00	17.74	
1 1/2	1	67.90	67.90	41.60	41.03	32.37	**	18.00	18.00	18.00	18.00	38.84	
2	2	108.60	108.60	67.90	41.03	58.29	**	18.00	18.00	18.00	18.00	69.95	
3	3	202.60	202.60	108.60	41.03	84.20	**	118.50	118.50	118.50	118.50	101.04	
4	4	254.30	254.30	202.60	41.03	191.06	**	221.00	221.00	221.00	221.00	229.27	
6	6	380.60	380.60	254.30	41.03	249.52	**	277.40	277.40	277.40	277.40	299.42	
8	8	736.90	736.90	380.60	41.03	399.23	**	415.20	415.20	415.20	415.20	479.08	
10	10	1,067.20	1,067.20	736.90	41.03	579.97	**	803.90	803.90	803.90	803.90	695.96	
12	12	1,528.50	1,528.50	1,067.20	41.03	1,159.94	**	1,164.20	1,164.20	1,164.20	1,164.20	-	
16	16			1,528.50	41.03	1,391.93	**	1,667.50	1,667.50	1,667.50	1,667.50	1,391.93	
18	18					1,304.93	**					1,565.92	
20	20					1,449.92	**					1,739.90	
Flat Rate		60.80						65.91	65.91	49.06	65.91	35.17	33.23
Consumption Charges, per 100 Gallons:													
First Block or Allow		1.2217	0.9000	0.5000	-	-		1.3854	1.3854	0.8983	1.3854	-	
Second Block						0.8260		-				0.9912	
Third Block						0.9120						1.0944	
Fourth Block						0.7880						0.9456	
All Classes													
Commercial and Municipal													
Customer Charges		\$	\$	\$	\$	\$		\$	\$	\$	\$	\$	
5/8	3/4	16.50	25.00	16.50	41.03	14.78	**	18.00	18.00	18.00	18.00	17.74	
1	1	41.60	41.60	25.00	41.03	14.78	**	18.00	18.00	18.00	18.00	17.74	
1 1/2	1	67.90	67.90	41.60	41.03	32.37	**	18.00	18.00	18.00	18.00	38.84	
2	2	108.60	108.60	67.90	41.03	58.29	**	118.50	118.50	118.50	118.50	69.95	
3	3	202.60	202.60	108.60	41.03	84.20	**	221.00	221.00	221.00	221.00	101.04	
4	4	254.30	254.30	202.60	41.03	191.06	**	277.40	277.40	277.40	277.40	229.27	
6	6	380.60	380.60	254.30	41.03	249.52	**	415.20	415.20	415.20	415.20	299.42	
8	8	736.90	736.90	380.60	41.03	399.23	**	803.90	803.90	803.90	803.90	479.08	
10	10	1,067.20	1,067.20	736.90	41.03	579.97	**	1,164.20	1,164.20	1,164.20	1,164.20	695.96	
12	12	1,528.50	1,528.50	1,067.20	41.03	1,159.94	**	1,667.50	1,667.50	1,667.50	1,667.50	-	
16	16			1,528.50	41.03	1,391.93	**					1,391.93	
18	18					1,304.93	**					1,565.92	
20	20					1,449.92	**					1,739.90	
All Classes													
Consumption Charges, per 100 Gallons:													
Commercial													
First Block		1.2205	0.9000	0.5000	-	-		1.3854	1.3854	0.8983	0.8983		
Second Block		0.9153	0.9000	0.5000	-	-		1.0136	1.0136	0.8983	0.8983		
Construction rate		0.0604						0.0657					
Municipal													
First Block		1.4742	0.9000	0.5000	-	-		1.4742	1.4742	0.8983	1.4742		
Second Block		0.8705	0.9000	0.5000	-	-		0.8890	0.8890	0.8983	0.8890		
All Classes													
Allowance													
Next 1,100 gallons over allowance					-	-							
All over 4,100 gallons					0.9545	0.9545							
Allowance - First 17					0.5628	0.5628							
Next 183												0.9912	
Next 300												1.0944	
Over 500												0.9456	

* 3,000 gallon allowance.
** 1,700 gallon allowance

PENNSYLVANIA-AMERICAN WATER COMPANY
COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
INDUSTRIAL

ZONE 1

Customer Charges	Present Rates	2021 Proposed Rates
5/8	\$ 24.50	\$ 25.40
3/4	36.75	38.10
1	61.40	63.60
1 1/2	122.70	127.10
2	196.35	203.40
3	368.10	381.40
4	613.50	635.60
6	1,227.00	1,271.20
8	1,963.65	2,034.30
10	2,821.80	2,923.40
12	4,050.00	4,195.80

Consumption Charges, per 100 Gallons:

Industrial

First Block	1.1843	1.2796
Second Block	0.9010	0.9736
Third Block	0.7088	0.7658
Fourth Block (Curtailment)	0.4328	0.4676

ZONE 5 - STEELTON

5/8	\$ 14.78	\$ 17.74
3/4	14.78	17.74
1	32.37	38.84
1 1/2	58.29	69.95
2	84.20	101.04
3	191.06	229.27
4	249.52	299.42
6	399.23	479.08
8	579.97	695.96
Allowance or First Block	-	-
Second Block	0.8260	0.9912
Third Block	0.9120	1.0944
Fourth Block	0.7880	0.9456

PENNSYLVANIA-AMERICAN WATER COMPANY

COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
OTHER WATER UTILITIES

ZONE 1

Customer Charges	Present Rates Per Month		2021 Proposed Rates Per Month	
	Group A	Group B	Group A	Group B
5/8	\$ 24.00	\$ 24.00	\$ 26.20	\$ 26.20
3/4	36.00	36.00	39.30	39.30
1	60.10	60.10	65.60	65.60
1 1/2	120.00	120.00	130.90	130.90
2	192.10	192.10	209.60	209.60
3	360.00	360.00	392.70	392.70
4	600.10	600.10	654.70	654.70
6	1,200.00	1,200.00	1,309.10	1,309.10
8	1,921.00	1,921.00	2,095.60	2,095.60
10	2,760.00	2,760.00	3,010.90	3,010.90
12	3,960.00	3,960.00	4,320.00	4,320.00

Other Water Utilities

For all Consumptions Per 100 Gallons:	0.7219	0.9805	0.7220	1.2480
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PENNSYLVANIA-AMERICAN WATER COMPANY

COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
PRIVATE FIRE PROTECTION

<u>Size of Connection</u>	<u>Present Rates per Month</u>	<u>2021 Rates Per Month</u>
<u>Unmetered</u>		
1	\$ 4.41	\$ 5.09
1 1/4	4.41	5.09
1 1/2	6.35	7.33
2	11.29	13.04
3	25.67	29.65
4	45.19	52.19
6	102.68	118.60
8	182.77	211.10
10	285.45	329.69
12	410.72	474.38
Fire Hydrants	26.87	26.87
<u>Size of Connection</u>	<u>Present Rates per Month</u>	<u>2021 Rates Per Month</u>
<u>Metered</u>		
1	\$ 36.09	\$ 41.68
1 1/2	51.55	59.54
2	82.49	95.28
3	154.66	178.63
4	193.33	223.30
6	290.00	334.95
8	444.66	513.58
10	625.11	722.00
Hydrants	26.87	26.87
Sprinkler first 200	53.80	62.14
Sprinkler over 200	0.14	0.16
Standpipes	41.83	48.31

PENNSYLVANIA-AMERICAN WATER COMPANY

COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
PUBLIC FIRE PROTECTION

<u>Service Area</u>	<u>Public Fire Hydrant Rate Per Month</u>	
	<u>Present</u>	<u>2021 Proposed</u>
Hydrants prior to 1/1/2000	\$ 20.00	\$ 20.00
Hydrants at 1/4 the Cost of Service	17.11	16.87
Bradford Township	6.25	16.87
Brownsville Area	17.55	17.55
California Area	18.05	18.05
Reading Area	18.19	18.19
Turbotville	15.10	16.87
Steelton		

PART III. RATE YEAR 2 COST OF SERVICE BY CUSTOMER CLASSIFICATION

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

COMPARISON OF PRO FORMA COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Customer Classification (1)	Pro Forma Cost of Service, as of December 31, 2022			Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Proposed Increase	
	Cost of Service (2)	Allocation of Other COS* (3)	Total Amount (4)	Amount (6)	Percent of Total (7)	Amount (8)	Percent of Total (9)	Amount (10)	Percent Increase (11)
Residential	\$ 463,059,339	\$ 25,621,661	\$ 488,681,000	\$ 461,560,764	66.0%	\$ 488,185,859	66.1%	\$ 26,625,096	5.8%
Commercial	176,637,384	8,261,182	184,898,566	172,958,861	25.1%	184,537,254	24.9%	11,578,394	6.7%
Industrial	28,693,785	1,478,440	30,172,225	28,290,394	4.1%	30,106,390	4.1%	1,815,996	6.4%
Public (Municipal)	19,282,538	1,022,510	20,305,048	20,894,149	2.7%	21,339,170	2.9%	445,021	2.1%
Other Water Utilities - Group A	733,774		733,774	694,382	0.1%	734,019	0.1%	39,637	5.7%
Other Water Utilities - Group B	243,607		243,607	119,850	0.0%	130,408	0.0%	10,558	8.8%
Private Fire Protection	5,057,753		5,057,753	4,821,047	0.7%	5,058,921	0.7%	237,875	4.9%
Public Fire Protection	8,838,846	149,013	8,987,859	8,875,537	1.2%	8,987,859	1.2%	112,321	1.3%
Total Sales of Water	702,547,026	36,532,806	739,079,832	698,214,982	100.0%	739,079,880	100.0%	40,864,898	5.9%
Other Water Revenues	11,117,944		11,117,944	10,874,717		11,117,944		243,227	2.2%
Contract Sales - Industrial	3,448,166		3,448,166	3,448,166		3,448,166		-	0.0%
Contract Sales - Resale	1,898,504		1,898,504	1,898,504		1,898,504		-	0.0%
Total	\$ 719,011,639	\$ 36,532,806	\$ 755,544,445	\$ 714,436,369		\$ 755,544,493		\$ 41,108,125	5.8%

* Includes unrecovered Wastewater Cost of Service and Steelton Cost of Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PRESENT RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	OTHER WATER UTILITIES		FIRE PROTECTION	
						GROUP A (7)	GROUP B (8)	PRIVATE (9)	PUBLIC (10)
1. REVENUES FROM SALES	\$ 698,214,982	\$ 461,560,764	\$ 172,958,861	\$ 28,290,394	\$ 20,894,149	\$ 694,382	\$ 119,850	\$ 4,821,047	\$ 8,875,537
2. OTHER REVENUES	16,221,386	11,889,290	2,988,452	437,752	305,057	10,832	3,329	106,189	480,485
3. TOTAL OPERATING REVENUES	714,436,369	473,450,054	175,947,313	28,728,146	21,199,206	705,214	123,179	4,927,236	9,356,022
4. LESS: OPERATING EXPENSES	369,889,073	261,189,386	90,178,407	14,540,765	9,871,991	361,357	107,571	2,146,572	(8,506,977)
5. RETURN AND INCOME TAXES	344,547,296	212,260,668	85,768,906	14,187,381	11,327,215	343,857	15,608	2,780,664	17,862,999
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	68,553,052	41,563,715	17,529,015	2,879,228	1,905,775	75,408	27,421	596,412	3,976,077
7. TAXABLE INCOME	275,994,244	170,696,952	68,239,890	11,308,152	9,421,440	268,449	(11,814)	2,184,252	13,886,922
8. LESS: INCOME TAXES (TAX. INC.)	52,645,598	32,560,256	13,016,684	2,157,018	1,797,129	51,206	(2,253)	416,644	2,648,915
9. NET RETURN (Line 5 - Line 8)	291,901,698	179,700,412	72,752,222	12,030,363	9,530,085	292,651	17,861	2,364,020	15,214,084
10. ORIGINAL COSTS MEASURE OF VALUE	3,580,590,311	2,170,989,993	915,619,681	150,224,755	99,625,133	4,065,324	1,274,472	31,252,047	207,538,891
11. RATE OF RETURN, PERCENT	8.15	8.28	7.95	8.01	9.57	7.20	1.40	7.56	7.33
12. RELATIVE RATE OF RETURN	1.00	1.02	0.97	0.98	1.17	0.88	0.17	0.93	0.90

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PROPOSED RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	OTHER WATER UTILITIES		FIRE PROTECTION	
						GROUP A (7)	GROUP B (8)	PRIVATE (9)	PUBLIC (10)
1. REVENUES FROM SALES	\$ 739,079,880	\$ 488,185,859	\$ 184,537,254	\$ 30,106,390	\$ 21,339,170	\$ 734,019	\$ 130,408	\$ 5,058,921	\$ 8,987,859
2. OTHER REVENUES	16,464,613	12,035,218	3,050,419	447,275	311,387	11,075	3,402	108,754	497,084
3. TOTAL OPERATING REVENUES	755,544,493	500,221,077	187,587,673	30,553,665	21,650,557	745,094	133,810	5,167,675	9,484,943
4. LESS: OPERATING EXPENSES	407,120,062	289,396,825	98,891,712	16,020,519	10,930,237	361,582	107,639	2,135,215	(10,723,672)
5. RETURN AND INCOME TAXES	348,424,431	210,824,252	88,695,962	14,533,145	10,720,320	383,512	26,171	3,032,460	20,208,615
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	68,563,650	41,583,854	17,524,869	2,872,817	1,906,069	75,420	27,425	596,504	3,976,692
7. TAXABLE INCOME	279,860,781	169,240,398	71,171,093	11,660,329	8,814,250	308,092	(1,255)	2,435,956	16,231,923
8. LESS: INCOME TAXES (TAX. INC.)	63,767,457	38,562,137	16,216,633	2,656,855	2,008,364	70,200	(286)	555,043	3,698,512
9. NET RETURN (Line 5 - Line 8)	284,656,974	172,262,115	72,479,329	11,876,291	8,711,956	313,312	26,457	2,477,417	16,510,103
10. ORIGINAL COSTS MEASURE OF VALUE	3,580,590,311	2,171,226,781	915,364,149	150,167,886	99,684,359	4,065,324	1,274,472	31,230,628	207,576,697
11. RATE OF RETURN, PERCENT	7.95	7.93	7.92	7.91	8.74	7.71	2.08	7.93	7.95
12. RELATIVE RATE OF RETURN	1.00	1.00	1.00	0.99	1.10	0.97	0.26	1.00	1.00

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
OPERATION AND MAINTENANCE EXPENSES											
Source of Supply Expenses											
---Operation---											
601.1	Salaries and Wages	2	\$ 188,917	\$ 110,139	\$ 58,470	\$ 11,884	\$ 6,952	\$ 264	\$ 94	\$ 189	\$ 945
610.1	Purchased Water	1	3,024,495	1,739,387	896,763	223,813	133,380	5,142	605	4,234	21,171
615.1	Purchased Power	1	2,385,591	1,371,953	707,328	176,534	105,205	4,056	477	3,340	16,899
616.1	Purchased Fuel	1	28,576	16,434	8,473	2,115	1,260	49	6	40	200
618.1	Chemicals	1	-	-	-	-	-	-	-	-	-
620.1	Materials and Supplies	2	31,728	18,497	9,820	1,993	1,168	44	16	32	159
631.1	Contract Services -Engineering	2	49,465	28,838	15,309	3,106	1,820	69	25	49	247
633.1	Contract Services -Legal	2	-	-	-	-	-	-	-	-	-
636.1	Contract Services -Other	2	741,618	432,363	229,531	46,574	27,292	1,038	371	742	3,708
641.1	Rental of Building	2	-	-	-	-	-	-	-	-	-
642.1	Rental of Equipment	2	656	382	203	41	24	1	-	1	3
650.1	Transportation	2	-	-	-	-	-	-	-	-	-
675.1	Miscellaneous Expenses	2	2,767,162	1,613,255	856,437	173,778	101,832	3,874	1,384	2,767	13,836
	Total Operation		9,218,208	5,331,248	2,782,334	639,818	378,933	14,537	2,978	11,394	56,968
---Maintenance---											
601.2	Salaries and Wages	2	386,179	225,142	119,522	24,252	14,211	541	193	386	1,931
620.2	Materials and Supplies	2	51,759	30,175	16,019	3,250	1,905	72	26	52	259
636.2	Contract Services	2	-	-	-	-	-	-	-	-	-
631.2	Contract Services - Engineering	2	41,725	24,326	12,914	2,620	1,535	58	21	42	209
636.2	Contract Services - Other	2	523,900	305,434	162,147	32,901	19,280	733	262	524	2,620
650.1	Transportation	2	(93)	(54)	(29)	(6)	(3)	-	-	-	-
675.2	Misc. Maintenance Expense	2	7,916	4,615	2,450	497	291	11	4	8	40
	Total Maintenance		1,011,386	589,638	313,023	63,514	37,219	1,415	506	1,012	5,059
	Total Source of Supply Expenses		10,229,594	5,920,886	3,095,357	703,332	416,152	15,952	3,484	12,406	62,027
Water Treatment Expenses											
---Operation---											
601.3	Salaries and Wages	5A	\$ 1,158,633	\$ 668,763	\$ 352,340	\$ 69,170	\$ 41,247	\$ 1,622	\$ 579	\$ 3,823	\$ 21,087
	Power and Pumping and Other Dept Exp	2	11,046,974	6,441,552	3,419,657	693,876	406,602	15,469	5,524	11,049	55,245
615.3	Purchased Power	1	8,861,220	5,096,088	2,627,352	655,730	390,780	15,064	1,772	12,406	62,029
618.3	Chemicals	1	11,456,542	6,598,657	3,396,865	847,784	505,234	19,476	2,291	16,039	80,196
620.3	Materials and Supplies	6	301,201	175,419	93,071	18,825	11,054	422	151	361	1,898
631.3	Contract Services -Engineering	6	50,830	29,603	15,706	3,177	1,865	71	25	61	320

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
635.3	Contract Services -Testing	6	179,379	104,470	55,428	11,211	6,583	251	90	215	1,130
636.3	Contract Services -Other	6	1,102,638	642,176	340,715	68,915	40,467	1,544	551	1,323	6,947
641.3	Rental of Building	6	2,360	1,374	729	148	87	3	1	3	15
642.3	Rental of Equipment	6	48,817	28,431	15,084	3,051	1,792	68	24	59	308
650.3	Transportation	6	27,669	16,114	8,550	1,729	1,015	39	14	33	174
675.3	Miscellaneous Expenses										
	Waste Disposal	1	1,830,364	1,052,642	542,703	135,447	80,719	3,112	386	2,563	12,813
	Other	6	4,605,142	2,682,035	1,422,989	287,821	169,009	6,447	2,303	5,526	29,012
	Total Operation		40,673,769	23,527,324	12,291,189	2,796,884	1,656,454	63,588	13,691	53,461	271,174
601.4	---Maintenance----										
	Salaries and Wages	5A	616,374	355,771	187,439	36,798	21,943	863	308	2,034	11,218
	Power and Pumping	2	2,841,724	1,656,725	879,514	178,460	104,575	3,978	1,421	2,842	14,209
620.4	Purification and Laboratory	7	264,343	153,848	81,550	16,442	9,675	370	132	370	1,956
636.4	Materials and Supplies	7	23,769	13,834	7,333	1,478	870	33	12	33	176
636.4	Contract Services - Other	7	828,660	482,280	255,642	51,543	30,329	1,160	414	1,160	6,132
650.4	Transportation	7	1,140	663	352	71	42	2	1	2	8
675.4	Miscellaneous Expenses - Waste Disposal	1	312,714	179,842	92,720	23,141	13,791	532	63	438	2,189
	Total Maintenance		4,888,724	2,842,963	1,504,550	307,933	181,225	6,938	2,351	6,879	35,888
	Total Water Treatment Expenses		\$ 45,562,493	\$ 26,370,287	\$ 13,795,739	\$ 3,104,817	\$ 1,837,679	\$ 70,526	\$ 16,042	\$ 60,340	\$ 307,062
601.5	---Transmission & Distribution Expenses										
	Salaries and Wages	12	2,946,266	1,826,391	771,627	109,601	80,138	3,241	884	28,284	126,100
	Supervision & Other Dept. Exps.	8	2,752,135	1,577,524	790,413	124,121	83,390	3,578	1,101	25,870	146,138
	Mains	4	116,763	67,606	33,079	4,600	3,304	152	47	1,191	6,784
	Storage Facilities	10	477,451	372,684	90,272	3,547	8,747	172	67	1,962	-
	Miscellaneous Meter Expense	11	226,161	196,828	21,702	593	1,712	25	9	5,292	-
	Services on Customer Premises	1	516,921	297,281	163,267	38,252	22,796	879	103	724	3,618
615.5	Purchased Power	12	580,301	359,729	151,981	21,587	15,784	638	174	5,571	24,837
620.5	Materials and Supplies	12	213,285	132,215	55,859	7,934	5,801	235	64	2,048	9,129
631.5	Contract Services -Engineering	12	271,858	168,525	71,200	10,113	7,395	299	82	2,610	11,636
636.5	Contract Services -Other	12	72,840	45,154	19,077	2,710	1,981	80	22	699	3,118
641.5	Rental of Building	12	40,182	24,909	10,524	1,495	1,093	44	12	386	1,720
642.5	Rental of Equipment	12	35,510	22,013	9,300	1,321	966	39	11	341	1,520
650.5	Transportation	12	2,139,214	1,326,099	560,260	79,579	58,187	2,353	642	20,536	91,558
675.5	Miscellaneous Expenses										
	Total Operation		10,388,888	6,416,958	2,738,561	405,453	291,294	11,735	3,218	95,514	426,158

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
---Maintenance---											
601.6	Salaries and Wages	13	179,039	115,194	31,976	4,064	3,169	125	36	2,578	21,897
	Supervision and Engineering	4	37,718	21,839	10,686	1,486	1,067	49	15	385	2,191
	Structures and Improvements	8	1,441,168	826,078	413,904	64,997	43,667	1,874	576	13,547	76,526
	Mains	11	1,301,472	1,132,671	124,889	3,410	9,852	143	52	30,454	-
	Services	10	5,417	4,229	1,024	40	99	2	1	22	-
	Meters	4	4,921	2,849	1,394	194	139	6	2	50	286
	Storage Facilities	9	298,982	-	-	-	-	-	-	-	298,982
	Fire Hydrants	13	5,847,997	3,762,601	1,044,452	132,750	103,510	4,094	1,170	84,211	715,210
620.6	Other	13	1,081,823	696,045	193,214	24,557	19,148	757	216	15,578	132,307
636.6	Materials and Supplies	13	1,285,025	826,785	229,505	29,170	22,745	900	257	18,504	157,159
637.6	Contract Services - Engineering	13	12,198	7,848	2,179	277	216	9	2	176	1,492
650.6	Contract Services - Engineering	13	480,866	309,389	85,883	10,916	8,511	337	96	6,924	58,810
675.6	Transportation	13	1,603,267	1,031,542	286,343	36,394	28,378	1,122	321	23,087	196,080
	Miscellaneous Expenses										
	Total Maintenance		13,579,895	8,737,070	2,425,449	308,255	240,501	9,418	2,744	195,516	1,660,940
	Total Transmission and Distribution Expenses		\$ 23,968,783	\$ 15,154,028	\$ 5,164,010	\$ 713,708	\$ 531,795	\$ 21,153	\$ 5,962	\$ 291,030	\$ 2,087,098
Customer Accounting Expenses											
601.7	Salaries and Wages	15	\$ 4,102,798	\$ 3,804,648	\$ 279,236	\$ 3,323	\$ 14,852	\$ 41	\$ 41	\$ 656	\$ -
	Meter Reading and Other Expense	10	2,306,417	1,800,320	436,074	17,137	42,254	830	323	9,479	-
620.7	Materials and Supplies	14	35,902	33,082	2,428	29	129	-	-	211	22
636.7	Contract Services-Other	14	217,091	200,041	14,682	176	782	2	2	1,276	130
642.7	Rental of Equipment	14	8,741	8,054	591	7	31	-	-	51	5
650.7	Transportation	14	36,504	33,913	2,489	30	132	-	-	216	22
670.7	Bad Debt	22	8,664,101	7,715,382	920,128	5,198	11,263	-	-	12,130	-
675.7	Miscellaneous Expenses	14	2,427,317	2,236,676	164,159	1,966	8,738	24	24	14,273	1,456
	Total Customer Accounting Expenses		17,799,171	15,832,116	1,819,787	27,866	78,181	897	390	38,292	1,635
Administrative and General Expenses											
601.8	Salaries and Wages	16	\$ 19,311,977	\$ 13,108,970	\$ 4,314,296	\$ 683,644	\$ 449,969	\$ 17,381	\$ 5,794	\$ 100,422	\$ 631,502
603.8	Salaries of Officers	16	-	-	-	-	-	-	-	-	-
604.8	Employees Pension and Benefits	17	11,232,765	7,428,227	2,609,371	422,352	280,819	10,109	3,370	62,903	415,612
615.8	Purchased Power	16	23,405	15,887	5,229	829	545	21	7	122	765

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
621	Materials and Supplies	16	806,129	547,200	180,089	28,537	18,783	726	242	4,192	26,360
631.8	Contract Services-Engineering	16	52,388	35,561	11,703	1,855	1,221	47	16	272	1,713
632.8	Contract Services-Accounting	16	804,766	548,275	179,785	28,489	18,751	724	241	4,185	26,316
633.8	Contract Services-Legal	16	1,744,193	1,183,958	389,653	61,744	40,640	1,570	523	9,070	57,035
634.8	Contract Services-Management										
	Customer Related	14	15,806,128	14,564,715	1,088,968	12,803	56,902	158	158	92,940	9,484
	Employee Related	17	4,451,110	2,943,519	1,033,993	167,362	111,278	4,006	1,335	24,926	164,691
	Water Quality Related	1	454,685	261,489	134,814	33,647	20,052	773	91	637	3,183
	Other	16	37,145,526	25,214,383	8,298,311	1,314,952	865,491	33,431	11,144	193,157	1,214,659
636.8	Contract Services-Other	16	847,309	575,153	189,289	29,995	19,742	763	254	4,406	27,707
641.8	Rental of Buildings	16	127,260	86,384	28,430	4,505	2,965	115	38	662	4,161
642.8	Rental of Equipment	16	89,203	60,551	19,928	3,158	2,078	80	27	464	2,917
650.8	Transportation	16	1,993,455	1,353,157	445,338	70,568	46,448	1,794	598	10,366	65,186
656.8	Insurance-Vehicles	16	217,982	147,966	48,697	7,717	5,079	196	65	1,134	7,128
657.8	Insurance-General Liability	16	9,276,411	6,296,828	2,072,350	328,385	216,140	8,349	2,783	48,237	303,339
658.8	Insurance-Workers Comp	17	1,484,494	981,696	344,848	55,817	37,112	1,336	445	8,313	54,926
659.8	Insurance-Other	16	2,450,150	1,663,162	547,364	86,735	57,088	2,205	735	12,741	80,120
660.8	Advertising	14	-	-	-	-	-	-	-	-	-
666.8	Amortization of Rate Case Exp.	20	695,061	441,364	169,386	28,011	18,489	695	209	5,004	31,903
667.8	Regulatory Commission	20	21,327	13,543	5,197	859	567	21	6	154	979
675.8	Miscellaneous Expenses	16	12,199,123	8,280,764	2,725,284	431,849	284,240	10,979	3,660	63,435	398,911
	Total Administrative and General Expenses		121,234,847	85,750,752	24,822,323	3,803,813	2,554,399	95,479	31,741	647,742	3,528,597
	Total Operation & Maintenance Expenses		\$ 218,794,889	\$ 149,028,069	\$ 48,697,216	\$ 8,353,536	\$ 5,418,206	\$ 204,007	\$ 57,619	\$ 1,049,810	\$ 5,986,419

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
303.14	Water Rights - Hybernian Dam	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
303.35	Waste Handling & Treatment Land	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
303.99	Comprehensive Planning Studies	18	696,011	421,783	178,179	29,232	19,349	766	209	6,055	40,438
304.15	Other Water Source Structures	2	1,165,813	679,669	360,819	73,213	42,902	1,632	583	1,166	5,829
304.20	Power and Pumping Structures	5A	3,215,501	1,855,987	977,834	191,965	114,472	4,502	1,608	10,611	58,522
304.30	Purification Buildings	2	6,939,292	4,045,607	2,147,711	435,788	255,366	9,715	3,470	6,939	34,896
304.36	Waste Handling & Treatment Structures	1	319,789	183,911	94,817	23,664	14,103	544	64	448	2,239
304.39	Purification Buildings - Tank Painting	2	3,331	1,942	1,031	209	123	5	2	3	17
304.61	Office Buildings	16	1,147,012	778,592	256,242	40,604	26,725	1,032	344	5,964	37,507
304.62	Stores, Shop and Garage Bldgs.	16	1,368,614	929,015	305,748	48,449	31,889	1,232	411	7,117	44,754
304.63	Misc. Structures and Improvements	16	92,191	62,579	20,595	3,264	2,148	83	28	479	3,015
305.00	Collecting & Impounding Reservoirs	1	2,226,779	1,280,621	680,240	164,782	98,201	3,786	445	3,117	15,587
306.00	Lake, River and Other Intakes	2	440,664	258,907	136,386	27,674	16,216	617	220	2,203	10,139
307.00	Wells and Springs	2	337,948	197,024	104,595	21,223	12,436	473	169	338	1,890
310.00	Power Generation Equipment	5A	583,231	336,641	177,361	34,819	20,763	817	282	1,925	10,615
311.00	Pumping Equipment Other	5	846,648	478,695	247,729	45,042	27,855	1,101	339	6,858	39,030
311.52	Pumping Equipment Source of Supply	2	489,246	285,230	151,422	30,725	18,004	685	245	489	2,446
311.53	Pumping Equipment Water Treatment	2	1,650,406	962,187	510,801	103,645	60,735	2,311	825	1,650	8,252
311.54	Pumping Equipment Transmission and Distribution	8	190,941	109,447	54,838	8,611	5,786	248	76	1,795	10,139
320.00	Purification System	2	12,853,031	7,493,317	3,978,013	807,170	472,992	17,994	6,427	12,853	64,265
330.00	Distr. Reservoirs and Standpipes	4	6,556,672	3,796,313	1,857,505	258,333	185,554	8,524	2,623	66,878	380,943
331.00	Mains and Accessories										
	10-inch and Over	3	18,693,003	10,436,304	5,557,430	1,123,449	659,863	26,170	7,477	132,720	749,589
	Under 10-inch	4	29,917,272	17,322,100	8,475,563	1,178,741	846,659	38,892	11,967	305,156	1,738,193
333.00	Services	11	11,951,882	10,401,723	1,146,903	31,314	90,476	1,315	478	279,674	-
334.00	Meters	10	11,377,657	8,881,058	2,151,174	84,536	208,439	4,096	1,593	46,762	-
335.00	Fire Hydrants	9	2,440,499	-	-	-	-	-	-	-	2,440,499
340.00	Office Furniture	16	495,036	336,030	110,591	17,524	11,534	446	149	2,574	16,188
340.00	Computers and Peripheral Equipment	16	7,004,899	4,754,925	1,564,894	247,973	163,214	6,304	2,101	36,425	229,060
340.00	Other Office Equipment	16	739	502	165	26	17	1	-	4	24
340.00	Computer Software	16	8,930,868	6,062,273	1,995,156	316,153	208,089	8,038	2,679	46,441	292,039
340.00	Computer Software	16	1,328,259	901,622	296,733	47,020	30,948	1,195	388	6,907	43,434
340.00	Computer Software - CIS	14	1,480,265	1,364,005	100,110	1,199	5,329	15	15	8,704	888
341.00	Transportation Equipment	16	7,837,238	5,319,917	1,750,839	277,438	182,608	7,054	2,351	40,754	256,278
342.00	Stores Equipment	16	28,513	19,355	6,370	1,009	664	26	9	148	932
343.00	Tools and work Equipment	16	2,001,639	1,358,713	447,166	70,858	46,638	1,801	600	10,409	65,454
344.00	Laboratory Equipment	2	141,163	82,298	43,690	8,865	5,195	198	71	141	706
345.00	Power Operated Equipment	16	86,987	59,047	19,433	3,079	2,027	78	26	452	2,844
346.00	Communication Equipment	16	1,160,368	787,658	259,226	41,077	27,037	1,044	348	6,034	37,944
347.00	Miscellaneous Equipment	16	797,506	541,347	178,163	28,232	18,582	718	239	4,147	26,078
348.00	Other Tangible Equipment	16	32,101	21,790	7,171	1,136	748	29	10	167	1,050
	Citizens Acquisition CAC and CAC	4	(333,486)	(193,086)	(94,477)	(13,139)	(9,436)	(434)	(133)	(3,402)	(19,376)
Total Depreciation Expense			\$ 146,495,528	\$ 92,613,046	\$ 36,238,166	\$ 5,814,902	\$ 3,924,248	\$ 153,053	\$ 48,758	\$ 1,059,343	\$ 6,644,011

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
	Amortizations										
	Taxes, Other Than Income										
19	Local Property and Miscellaneous		\$ (6,781,127)	\$ (4,112,753)	\$ (1,733,256)	\$ (284,129)	\$ (188,515)	\$ (7,459)	\$ (2,712)	\$ (58,996)	\$ (393,305)
19	Federal and State Payroll Taxes		\$ 1,190,831	\$ 722,239	\$ 304,377	\$ 49,896	\$ 33,105	\$ 1,310	\$ 476	\$ 10,360	\$ 69,068
17	State Capital Stock Tax		\$ 4,473,084	\$ 2,958,050	\$ 1,039,097	\$ 168,188	\$ 111,827	\$ 4,026	\$ 1,342	\$ 25,049	\$ 165,504
19	PUC and OCA Assessments		\$ 4,102,437	\$ 2,605,047	\$ 999,764	\$ 165,328	\$ 109,125	\$ 4,102	\$ 1,231	\$ 29,538	\$ 188,302
19	Public Utility Realty Taxes		\$ 2,311,614	\$ 1,401,994	\$ 590,849	\$ 96,857	\$ 64,263	\$ 2,543	\$ 925	\$ 20,111	\$ 134,074
	Total Taxes Other Than Income Taxes		\$ 12,077,967	\$ 7,687,330	\$ 2,934,087	\$ 480,269	\$ 318,320	\$ 11,981	\$ 3,974	\$ 85,058	\$ 556,948
	Total O&M, Depreciation, Amort, and Taxes Other than Inc.		\$ 370,587,257	\$ 245,215,692	\$ 86,136,213	\$ 14,364,578	\$ 9,472,259	\$ 361,592	\$ 107,639	\$ 2,135,215	\$ 12,794,073
19	Federal and State Income Taxes		\$ 63,767,457	\$ 38,674,964	\$ 16,298,962	\$ 2,671,856	\$ 1,772,735	\$ 70,144	\$ 25,507	\$ 554,777	\$ 3,698,513
	Utility Operating Income Available for Return		\$ 284,656,930	\$ 172,644,429	\$ 72,758,311	\$ 11,927,125	\$ 7,913,463	\$ 313,123	\$ 113,863	\$ 2,476,515	\$ 16,510,102
	Total Cost of Service - Water		\$ 719,011,644	\$ 456,535,085	\$ 175,193,486	\$ 28,963,559	\$ 19,158,457	\$ 744,849	\$ 247,009	\$ 5,166,507	\$ 33,002,688
469	Other Water Revenues - Billing and Collecting	14	\$ (648,039)	\$ (597,142)	\$ (43,827)	\$ (525)	\$ (2,333)	\$ (6)	\$ (6)	\$ (3,810)	\$ (389)
470	Other Water Revenues - Late Payment Fees	20	\$ (4,419,380)	\$ (2,806,306)	\$ (1,077,003)	\$ (178,101)	\$ (117,556)	\$ (4,419)	\$ (1,326)	\$ (31,820)	\$ (202,850)
471	Other Water Revenues - Misc. Service Revenues	14	\$ (4,654,819)	\$ (4,289,230)	\$ (314,805)	\$ (3,770)	\$ (16,757)	\$ (47)	\$ (47)	\$ (27,370)	\$ (2,793)
472	Other Water Revenues - Rents from Other Properties	16	\$ (1,395,706)	\$ (947,405)	\$ (311,801)	\$ (49,408)	\$ (32,520)	\$ (1,256)	\$ (419)	\$ (7,258)	\$ (45,640)
	Revenue from Contract Sales	20	\$ (5,346,669)	\$ (3,395,135)	\$ (1,302,983)	\$ (215,471)	\$ (142,221)	\$ (5,347)	\$ (1,604)	\$ (38,496)	\$ (245,412)
	Unrecovered Public Fire	9	\$ (23,666,758)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (23,666,758)
	Reallocate Unrecovered Public Fire	21	\$ 23,666,758	\$ 18,559,472	\$ 4,494,317	\$ 177,501	\$ 435,468	\$ -	\$ -	\$ -	\$ -
	Total Cost of Service Related to Sales of Water		\$ 702,547,030	\$ 463,059,339	\$ 176,637,384	\$ 28,693,785	\$ 19,282,538	\$ 733,774	\$ 243,607	\$ 5,057,753	\$ 8,838,846
DA	Wastewater Allocation		\$ 35,171,958	\$ 25,115,153	\$ 8,212,464	\$ 831,221	\$ 1,013,120	\$ -	\$ -	\$ -	\$ -
DA	Steelton Allocation		\$ 1,360,948	\$ 506,508	\$ 48,718	\$ 647,219	\$ 9,390	\$ -	\$ -	\$ -	\$ 149,013
	Total Allocation		\$ 36,532,806	\$ 25,621,661	\$ 8,261,182	\$ 1,478,440	\$ 1,022,510	\$ -	\$ -	\$ -	\$ 149,013
	Total Cost of Service Including WW Alloc.		\$ 739,079,836	\$ 488,681,000	\$ 184,898,566	\$ 30,172,225	\$ 20,305,048	\$ 733,774	\$ 243,607	\$ 5,057,753	\$ 8,987,859

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED.

Factors are based on the pro forma future test year average daily consumption for each customer classification.

Customer Classification	Average Daily Consumption, 100 Gallons	Allocation Factor
(1)	(2)	(3)
Residential	658,549	0.5751
Commercial	339,421	0.2965
Industrial	84,705	0.0740
Public	50,460	0.0441
Other Water Utilities A	1,926	0.0017
Other Water Utilities B	146	0.0002
Private Fire Protection	1,622	0.0014
Public Fire Protection	8,063	0.0070
Total	1,144,893	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM DAY EXTRA CAPACITY FUNCTIONS.

(Factor 1) and the factors derived from maximum day extra capacity demand for each customer classification, as follows:

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2)x 0.7143	(4)	(5)=(4)x 0.2857	(6)=(3)+(5)
Residential	0.5751	0.4108	0.6029	0.1722	0.5830
Commercial	0.2965	0.2118	0.3419	0.0977	0.3095
Industrial	0.0740	0.0529	0.0348	0.0099	0.0628
Public	0.0441	0.0315	0.0185	0.0053	0.0368
Other Water Utilities A	0.0017	0.0012	0.0007	0.0002	0.0014
Other Water Utilities B	0.0002	0.0001	0.0012	0.0004	0.0005
Private Fire Protection	0.0014	0.0010			0.0010
Public Fire Protection	0.0070	0.0050			0.0050
Total	1.0000	0.7143	1.0000	0.2857	1.0000

The derivation of the maximum day extra capacity factors in column 4 and the basis for the column 3 and column 5 weightings are presented on the following page.

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PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM DAY EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Daily Consumption, 100 Gallons	Maximum Day Extra Capacity		
		Factor*	Rate of Flow, 100 Gallons Per Day	Allocation Factor
(1)	(2)	(3)	(4)	(5)
Residential	658,549	1.0	658,549	0.6029
Commercial	339,421	1.1	373,363	0.3419
Industrial	75,971	0.5	37,986	0.0348
Public	50,460	0.4	20,184	0.0185
Other Water Utilities A	1,926	0.4	770	0.0007
Other Water Utilities B	146	9.0	1,314	0.0012
Total	<u>1,126,473</u>		<u>1,092,166</u>	<u>1.0000</u>

The weighting of the factors is based on the maximum day ratio of 1.4,
based on a review of maximum day ratios experienced by the company. (See Schedule G)

	Maximum Day Ratio	Weight
Average Day	1.0	0.7143
Maximum Day Extra Capacity	<u>0.4</u>	<u>0.2857</u>
Total	<u>1.4</u>	<u>1.0000</u>

* Ratio of maximum day to average day minus 1.0.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS.

Factors are based on the weighting of the average daily consumption, the maximum day extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Fire Protection		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2) X 0.6840	(4)	(5)=(4) X 0.2736	(6)	(7)=(6) X 0.0424	(8)=(3)+ (5)+(7)
Residential	0.5751	0.3933	0.6029	0.1650			0.5583
Commercial	0.2965	0.2028	0.3419	0.0935	0.0227	0.0010	0.2973
Industrial	0.0740	0.0506	0.0348	0.0095			0.0601
Public	0.0441	0.0302	0.0185	0.0051			0.0353
Other Water Utilities A	0.0017	0.0012	0.0007	0.0002			0.0014
Other Water Utilities B	0.0002	0.0001	0.0012	0.0003			0.0004
Private Fire Protection	0.0014	0.0010			0.1448	0.0061	0.0071
Public Fire Protection	0.0070	0.0048			0.8325	0.0353	0.0401
Total	1.0000	0.6840	1.0000	0.2736	1.0000	0.0424	1.0000

The basis for the column 3, column 5 and column 7 weightings are presented on the following page.

SYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum day ratio of 1.4 and the average pumpage for the test year ended 12/31/19. The system demand for fire protection is 20,000 gpm, for 10 hours.

	<u>Ratio</u>	<u>Rate of Flow, (GPD)</u>	<u>Weight</u>
Average Day	1.0	193,710,438	0.6840
Maximum Day			
Extra Capacity	<u>0.4</u>	<u>77,484,175</u>	<u>0.2736</u>
Subtotal	1.4	271,194,613	0.9576
Fire Protection		<u>12,000,000</u>	<u>0.0424</u>
Total		<u><u>283,194,613</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 6 on the preceding page are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS.

fire protection demand for each customer classification.

Customer Classification	Average Hourly Consumption			Maximum Hour Extra Capacity		Fire Protection		Allocation Factor
	100 Gals.	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)	(4)=(3) X 0.4447	(5)	(6)=(5) X 0.4892	(7)	(8)=(7) X 0.0661	(9)=(4)+(6)+(8)
Residential	27,439.5	0.5751	0.2557	0.6607	0.3233			0.5790
Commercial	14,142.5	0.2965	0.1319	0.3065	0.1499	0.0227	0.0015	0.2833
Industrial	3,529.4	0.0740	0.0329	0.0133	0.0065			0.0394
Public	2,102.5	0.0441	0.0196	0.0177	0.0087			0.0283
Other Water Utilities A	80.3	0.0017	0.0008	0.0011	0.0005			0.0013
Other Water Utilities B	6.1	0.0002	0.0001	0.0007	0.0003			0.0004
Private Fire Protection	67.6	0.0014	0.0006			0.1448	0.0096	0.0102
Public Fire Protection	336.0	0.0070	0.0031			0.8325	0.0550	0.0581
Total	47,703.9	1.0000	0.4447	1.0000	0.4892	1.0000	0.0661	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum hour ratio of 2.1, and the average pumpage for the test year ended 12/31/2019. The system demand for fire protection is 20,000 gpm.

	<u>Ratio</u>	<u>Rate of Flow, (GPM)</u>	<u>Weight</u>
Average Hour	1.0	134,521	0.4447
Maximum Hour Extra Capacity	<u>1.1</u>	<u>147,973</u>	<u>0.4892</u>
Subtotal	2.1	282,494	0.9339
Fire Protection		<u>20,000</u>	<u>0.0661</u>
Total		<u><u>302,494</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 7 of Factor 4 are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service..

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Hourly Consumption 100 Gals.	Maximum Hour Extra Capacity		
		Factor*	Rate, 100 Gals. Per Hour	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
Residential	27,439.5	4.0	109,758.2	0.6607
Commercial	14,142.5	3.6	50,913.1	0.3065
Industrial	3,165.5	0.7	2,215.9	0.0133
Public	2,102.5	1.4	2,943.5	0.0177
Other Water Utilities A	80.3	2.2	176.6	0.0011
Other Water Utilities B	6.1	19.0	115.5	0.0007
Total	46,936.4		166,122.7	1.0000

* Ratio Of Maximum Hour To Average Hour Minus 1.0.

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PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM
HOUR EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

BASIS FOR ALLOCATING DEMAND RELATED COSTS OF FIRE SERVICE TO COMMERCIAL,
PRIVATE FIRE PROTECTION AND PUBLIC FIRE PROTECTION CUSTOMER CLASSIFICATIONS

Description	Restrictive Diameters Squared	Quantity	Relative Demand	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
<u>General Service - Commercial</u>				
4 -inch meter	16.00	249	3,984	
6 -inch meter	36.00	357	12,852	
8 -inch meter	64.00	<u>77</u>	<u>4,928</u>	
		683	21,764	0.0227
<u>Private Fire Protection</u>				
<u>Fire Lines</u>				
1 -inch fire line	1.00	14	14	
1.25 -inch fire line	1.56	2	3	
1.5 -inch fire line	2.25	6	14	
2 -inch fire line	4.00	82	328	
3 -inch fire line	9.00	26	234	
4 -inch fire line	16.00	360	5,760	
6 -inch fire line	36.00	1,258	45,288	
8 -inch fire line	64.00	624	39,936	
10 -inch fire line	100.00	60	6,000	
12 -inch fire line	144.00	19	2,736	
Hydrants	25.00	<u>1,537</u>	<u>38,425</u>	
Total Private Fire Protection		3,988	138,738	0.1448
<u>Public Fire Protection</u>				
Total Fire Hydrants	20.75 Avg.	<u>38,427</u>	<u>797,360</u>	
Total Public Fire Protection		<u>38,427</u>	<u>797,360</u>	<u>0.8325</u>
Total Fire Protection		<u><u>43,098</u></u>	<u><u>957,862</u></u>	<u><u>1.0000</u></u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING EQUIPMENT OTHER

Factors are based on the weighting of the maximum daily consumption with fire, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows.

Customer Classification	Maximum Daily Consumption		Maximum Hourly Consumption		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.6667	(4)	(5)=(4)x 0.3333	(6)=(3)+5
Residential	0.5583	0.3723	0.5790	0.1931	0.5654
Commercial	0.2973	0.1982	0.2833	0.0944	0.2926
Industrial	0.0601	0.0401	0.0394	0.0131	0.0532
Public	0.0353	0.0235	0.0283	0.0094	0.0329
Other Water Utilities A	0.0014	0.0009	0.0013	0.0004	0.0013
Other Water Utilities B	0.0004	0.0003	0.0004	0.0001	0.0004
Private Fire Protection	0.0071	0.0047	0.0102	0.0034	0.0081
Public Fire Protection	0.0401	0.0267	0.0581	0.0194	0.0461
Total	1.0000	0.6667	1.0000	0.3333	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5A. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING FACILITIES.

Factors are based on the a composite of rate base costs related to pumping equipment.

Customer Classification	Account 311 Original Cost Measure of Value	Allocation Factor
(1)	(2)	(3)
Residential	\$ 38,272,365	0.5772
Commercial	20,157,743	0.3041
Industrial	3,959,209	0.0597
Public	2,356,754	0.0356
Other Water Utilities A	90,695	0.0014
Other Water Utilities B	31,035	0.0005
Private Fire Protection	216,836	0.0033
Public Fire Protection	1,203,559	0.0182
Total	\$ 66,288,196	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 6. ALLOCATION OF WATER TREATMENT OPERATION EXPENSES.

Factors are based on the allocation of water treatment operation salaries and wages, as follows:

Customer Classification (1)	Water Treatment Operation Salaries and Wages (2)	Allocation Factor (3)
Residential	\$ 7,110,315	0.5824
Commercial	3,771,997	0.3090
Industrial	763,046	0.0625
Public	447,849	0.0367
Other Water Utilities A	17,091	0.0014
Other Water Utilities B	6,103	0.0005
Private Fire Protection	14,872	0.0012
Public Fire Protection	76,332	0.0063
Total	<u>\$ 12,207,605</u>	<u>1.0000</u>

FACTOR 7. ALLOCATION OF WATER TREATMENT MAINTENANCE EXPENSES.

Factors are based on the allocation of water treatment maintenance salaries and wages, as follows:

Customer Classification (1)	Water Treatment Maintenance Salaries and Wages (2)	Allocation Factor (3)
Residential	\$ 2,012,496	0.5820
Commercial	1,066,953	0.3085
Industrial	215,258	0.0622
Public	126,518	0.0366
Other Water Utilities A	4,841	0.0014
Other Water Utilities B	1,729	0.0005
Private Fire Protection	4,876	0.0014
Public Fire Protection	25,427	0.0074
Total	<u>\$ 3,458,098</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 8. ALLOCATION OF COSTS ASSOCIATED WITH MAINS.

Factors are based on the weighting of the maximum daily consumption, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows:

Customer Classification	10-inch and Larger		Under 10-inch		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.2770	(4)	(5)=(4)x 0.7230	(6)=(3)+(5)
Residential	0.5583	0.1546	0.5790	0.4186	0.5732
Commercial	0.2973	0.0824	0.2833	0.2048	0.2872
Industrial	0.0601	0.0166	0.0394	0.0285	0.0451
Public	0.0353	0.0098	0.0283	0.0205	0.0303
Other Water Utilities A	0.0014	0.0004	0.0013	0.0009	0.0013
Other Water Utilities B	0.0004	0.0001	0.0004	0.0003	0.0004
Private Fire Protection	0.0071	0.0020	0.0102	0.0074	0.0094
Public Fire Protection	0.0401	0.0111	0.0581	0.0420	0.0531
Total	1.0000	0.2770	1.0000	0.7230	1.0000

The weighting of the factors is based on the length of transmission mains and distribution mains, as follows:

	Length of Mains (Feet)	Weight
10-inch and Larger	14,824,111	0.2770
Under 10-inch	38,694,833	0.7230
Total	53,518,944	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 9. ALLOCATION OF COSTS ASSOCIATED WITH FIRE HYDRANTS.

These costs are assigned directly to Public Fire Protection.

Customer Classification	Allocation Factor
(1)	(2)
Public Fire Protection	1.0000

FACTOR 10. ALLOCATION OF COSTS ASSOCIATED WITH METERS.

Factors are based on the relative cost of meters by size and customer classification, as developed on the following page and summarized below.

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	637,120	0.78057
Commercial	154,320	0.18907
Industrial	6,067	0.00743
Public	14,951	0.01832
Other Water Utilities A	295	0.00036
Other Water Utilities B	111	0.00014
Private Fire Protection	3,352	0.00411
Total	816,216	1.00000

FACTOR 11. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES.

Factors are based on the relative cost of services by size and customer classification, as developed on the second of the following pages, and summarized below.

Customer Classification	3/4" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	616,952	0.87030
Commercial	68,027	0.09596
Industrial	1,854	0.00262
Public	5,369	0.00757
Other Water Utilities A	76	0.00011
Other Water Utilities B	25	0.00004
Private Fire Protection	16,590	0.02340
Total	708,893	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size (1)	5/8" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Other Water Utilities A		Other Water Utilities B		Private Fire Protection		Total	
		Number of Meters (3)	Weighting (4)=(2)X(3)	Number of Meters (5)	Weighting (6)=(2)X(5)	Number of Meters (7)	Weighting (8)=(2)X(7)	Number of Meters (9)	Weighting (10)=(2)X(9)	Number of Meters (11)	Weighting (12)=(2)X(11)	Number of Meters (13)	Weighting (14)=(2)X(13)	Number of Meters (15)	Weighting (16)=(2)X(15)	Number of Meters (17)	Weighting (18)
5/8	1.0	612,473	612,473	28,818	28,818	47	47	824	824	0	0	0	0	0	0	642,162	642,162
3/4	1.5	866	1,299	1,794	2,691	6	9	55	83	0	0	0	0	0	0	2,721	4,082
1	2.0	11,075	22,150	6,761	13,522	93	186	468	936	0	0	0	0	14	28	18,411	36,822
1-1/2	2.2	189	416	1,285	2,827	43	95	79	174	0	0	0	0	2	4	1,598	3,516
2	3.5	122	427	3,638	12,733	164	574	601	2,104	1	4	3	11	30	105	4,559	15,958
3	7.0	0	0	115	805	13	91	28	196	0	0	1	7	11	77	168	1,176
4	20.8	8	166	1,504	31,283	64	1,331	137	2,850	1	21	3	62	36	749	1,753	36,462
6	30.8	4	123	1,392	42,874	66	2,033	194	5,975	4	123	1	31	56	1,725	1,717	52,884
8	33.1	2	66	485	16,054	37	1,225	46	1,523	3	99	0	0	10	331	583	19,298
10	47.6	0	0	57	2,713	10	476	6	286	1	48	0	0	7	333	81	3,856
Total		624,739	637,120	45,849	154,320	543	6,067	2,438	14,951	10	295	8	111	166	3,352	673,753	816,216

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
BASIS FOR ALLOCATING SERVICE COSTS TO CUSTOMER CLASSIFICATIONS

Service Size (1)	3/4" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Other Water Utilities A		Other Water Utilities B		Private Fire Protection		Total	
		Number of Services (3)	Weighting (4)=(2)X(3)	Number of Services (5)	Weighting (6)=(2)X(5)	Number of Services (7)	Weighting (8)=(2)X(7)	Number of Services (9)	Weighting (10)=(2)X(9)	Number of Services (11)	Weighting (12)=(2)X(11)	Number of Services (13)	Weighting (14)=(2)X(13)	Number of Services (15)	Weighting (16)=(2)X(15)	Number of Services (17)	Weighting (18)
3/4 & 1"	1.00	616,210 *	616,210	36,899 **	36,899	146	146	1,347	1,347	0	0	0	0	16	16	654,618	654,618
1-1/2	1.10	189	208	1,285	1,414	43	47	79	87	0	0	0	0	6	7	1,602	1,763
2	3.30	122	403	3,638	12,005	164	541	601	1,983	1	3	3	10	82	271	4,611	15,216
3	3.10	0	0	115	357	13	40	28	87	0	0	1	3	26	81	183	568
4	2.80	8	22	1,504	4,211	64	179	137	384	1	3	3	8	360	1,008	2,077	5,815
6	3.70	8	30	1,392	5,150	66	244	194	718	4	15	1	4	1,258	4,655	2,923	10,816
8	15.50	4	62	485	7,518	37	574	46	713	3	47	0	0	624	9,672	1,199	18,586
10	8.30	2	17	57	473	10	83	6	50	1	8	0	0	60	498	136	1,129
12	20.10	0	0	0	0	0	0	0	0	0	0	0	0	19	382	19	382
Total		616,543	616,952	45,375	68,027	543	1,854	2,438	5,369	10	76	8	25	2,451	16,590	667,368	708,893

* Reduced by 8,204 service lines.
** Reduced by 474 service lines.

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PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 12. ALLOCATION OF TRANSMISSION AND DISTRIBUTION OPERATION SUPERVISION
AND ENGINEERING AND OTHER OPERATION DEPARTMENT EXPENSES.

The factors are based on the allocation of Transmission and Distribution Operation Salaries
and Wages, as follows:

Customer Classification	Transmission & Distribution Operation Salaries & Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 2,214,642	0.6199
Commercial	935,466	0.2619
Industrial	132,861	0.0372
Public	97,153	0.0272
Other Water Utilities A	3,927	0.0011
Other Water Utilities B	1,224	0.0003
Private Fire Protection	34,315	0.0096
Public Fire Protection	152,922	0.0428
Total	<u>\$ 3,572,510</u>	<u>1.0000</u>

FACTOR 13. ALLOCATION OF TRANSMISSION AND DISTRIBUTION MAINTENANCE SUPERVISION
AND ENGINEERING AND OTHER MAINTENANCE DEPARTMENT EXPENSES.

The factors are based on the allocation of Transmission and Distribution Maintenance Salaries
and Wages, as follows:

Customer Classification	Transmission & Distribution Maintenance Salaries & Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 1,987,666	0.6434
Commercial	551,897	0.1786
Industrial	70,127	0.0227
Public	54,824	0.0177
Other Water Utilities A	2,074	0.0007
Other Water Utilities B	646	0.0002
Private Fire Protection	44,458	0.0144
Public Fire Protection	377,985	0.1223
Total	<u>\$ 3,089,677</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 14. ALLOCATION OF CUSTOMER ACCOUNTING, BILLING AND COLLECTING COSTS.

Factors are based on the pro forma number of customers, as follows:

Customer Classification	Proforma Number of Customers	Allocation Factor
(1)	(2)	(3)
Residential	624,739	0.92146
Commercial	45,849	0.06763
Industrial	543	0.00081
Public	2,438	0.00360
Other Water Utilities A	10	0.00001
Other Water Utilities B	8	0.00001
Private Fire Protection	3,988	0.00588
Public Fire Protection	409	0.00060
Total	677,984	1.00000

FACTOR 15. ALLOCATION OF METER READING COSTS.

Factors are based on the number of meters by class.

Customer Classification	Pro Forma Number of Meters	Allocation Factor
(1)	(2)	(3)
Residential	624,739	0.92733
Commercial	45,849	0.06806
Industrial	543	0.00081
Public	2,438	0.00362
Other Water Utilities A	10	0.00001
Other Water Utilities B	8	0.00001
Private Fire Protection	111	0.00016
Total	673,698	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 16. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSES.

The factors are based on the allocation of all other operation and maintenance expenses excluding purchased water, power, fuel, chemicals and waste disposal expenses.

Customer Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
Residential	\$ 46,935,033	0.6788
Commercial	15,449,422	0.2234
Industrial	2,446,907	0.0354
Public	1,610,642	0.0233
Other Water Utilities A	60,218	0.0009
Other Water Utilities B	20,195	0.0003
Private Fire Protection	362,284	0.0052
Public Fire Protection	2,258,907	0.0327
Total	<u>\$ 69,143,608</u>	<u>1.0000</u>

FACTOR 16A. ALLOCATION OF CASH WORKING CAPITAL - EXPENSES

The functions are based on the allocation of all other operation and maintenance expenses excluding regulatory commission expense.

Customer Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
Residential	\$ 148,573,162	0.6812
Commercial	48,522,633	0.2225
Industrial	8,324,666	0.0382
Public	5,399,150	0.0248
Other Water Utilities A	203,291	0.0009
Other Water Utilities B	57,404	0.0003
Private Fire Protection	1,044,652	0.0048
Public Fire Protection	5,953,537	0.0273
Total	<u>\$ 218,078,495</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 17. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

The factors are based on the allocation of direct salaries and wages as follows:

Customer Classification	Salaries and Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 38,078,524	0.6613
Commercial	13,381,966	0.2323
Industrial	2,167,927	0.0376
Public	1,441,399	0.0250
Other Water Utilities A	54,450	0.0009
Other Water Utilities B	18,237	0.0003
Private Fire Protection	324,726	0.0056
Public Fire Protection	2,130,251	0.0370
Total	<u>\$57,597,480</u>	<u>1.0000</u>

FACTOR 18. ALLOCATION OF ORGANIZATION, FRANCHISES AND CONSENTS, OTHER INTANGIBLE PLANT AND OTHER RATE BASE ELEMENTS.

The factors are based on the allocation of the original cost less depreciation other than those items being allocated, as follows:

Customer Classification	Original Cost Less Depreciation	Allocation Factor
(1)	(2)	(3)
Residential	\$ 2,741,753,477	0.6060
Commercial	1,158,445,324	0.2560
Industrial	189,881,213	0.0420
Public	126,022,274	0.0278
Other Water Utilities A	5,112,513	0.0011
Other Water Utilities B	1,559,795	0.0003
Private Fire Protection	39,559,122	0.0087
Public Fire Protection	263,106,418	0.0581
Total	<u>\$ 4,525,440,136</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 19. ALLOCATION OF INCOME TAXES AND INCOME AVAILABLE FOR RETURN.

The factors are based on the allocation of the original cost measure of value rate base as shown on the following pages and summarized below:

Customer Classification (1)	Original Cost Measure of Value (2)	Allocation Factor (3)
Residential	\$ 2,171,226,781	0.6065
Commercial	915,364,149	0.2556
Industrial	150,167,886	0.0419
Public	99,684,359	0.0278
Other Water Utilities A	4,065,324	0.0011
Other Water Utilities B	1,274,472	0.0004
Private Fire Protection	31,230,628	0.0087
Public Fire Protection	207,576,697	0.0580
Total	<u>\$ 3,580,590,296</u>	<u>1.0000</u>

FACTOR 20. ALLOCATION OF REGULATORY COMMISSION EXPENSES, ASSESSMENTS AND OTHER WATER REVENUES.

The factors are based on the allocation of the total cost of service, excluding those items being allocated.

Customer Classification (1)	Total Cost of Service (2)	Allocation Factor (3)
Residential	\$ 453,475,131	0.6350
Commercial	174,019,139	0.2437
Industrial	28,769,361	0.0403
Public	19,030,276	0.0266
Other Water Utilities A	740,031	0.0010
Other Water Utilities B	245,563	0.0003
Private Fire Protection	5,131,811	0.0072
Public Fire Protection	32,781,504	0.0459
Total	<u>\$ 714,192,816</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON
FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Other Water Utilities Group A (9)	Other Water Utilities Group B (10)	Private Fire Protection (11)	Public Fire Protection (12)
Nondepreciable Plant											
301.00	Organization	18	\$ 766,405	\$ 464,442	\$ 196,200	\$ 32,189	\$ 21,306	\$ 843	\$ 230	\$ 6,668	\$ 44,528
302.00	Franchises and Consents	18	2,404,599	1,457,187	615,577	100,993	66,848	2,645	721	20,920	139,707
303.00	Other Intangible Plant	18	2,048,611	1,241,458	524,444	86,042	56,951	2,253	615	17,823	119,024
303.11	Water Rights	1	-	-	-	-	-	-	-	-	-
303.12	Reservoir Land	1	-	-	-	-	-	-	-	-	-
303.13	Other Sources of Supply Land	2	-	-	-	-	-	-	-	-	-
303.20	Power and Pumping Land	5	4,315,318	2,439,881	1,262,662	229,575	141,974	5,610	1,726	34,954	198,936
303.30	Purification Land	2	15,412	8,984	4,770	968	567	22	8	15	77
303.40	Transmission and Distribution Land	8	3,508,143	2,010,867	1,007,539	158,217	106,297	4,561	1,403	32,977	186,282
303.50	Distr. Reservoir & Standpipe Land	4	9,053,160	5,241,778	2,564,760	356,695	256,204	11,769	3,621	92,342	525,989
303.61	Office Land	16	5,260,833	3,571,053	1,175,270	186,233	122,577	4,735	1,578	27,356	172,029
303.62	Stores, Shop and Garage Land	16	-	-	-	-	-	-	-	-	-
Total Nondepreciable Plant			27,372,482	16,435,650	7,351,222	1,150,912	772,724	32,438	9,902	233,055	1,386,572
Depreciable Plant											
303.14	Water Rights - Hibernia Dam	1	-	-	-	-	-	-	-	-	-
303.35	Waste Handling & Treatment Land	1	(0)	(1)	-	-	-	-	-	-	-
304	Comprehensive Planning Studies	18	1,923,080	1,165,387	492,309	80,769	53,462	2,115	577	16,731	111,731
304.15	Other Water Source Structures	2	36,738,727	21,418,677	11,370,636	2,307,192	1,351,985	51,434	18,369	36,739	183,694
304.20	Power and Pumping Structures	5A	104,768,073	71,368,010	23,310,896	4,002,140	2,598,248	94,291	31,430	502,887	2,860,188
304.30	Purification Buildings	2	202,725,849	118,189,170	62,743,650	12,731,183	7,460,311	283,816	101,363	202,726	1,013,629
304.36	Waste Handling & Treatment Structures	1	5,035,859	2,896,122	1,493,132	372,654	222,081	8,561	1,007	7,050	35,251
304.38	Waste Handling & Treatment Structure f	1	5,845	3,362	1,733	433	258	10	1	8	41
304.39	Purification Buildings - Tank Painting	2	8,327	4,855	2,577	523	306	12	4	8	42
304.61	Office Buildings	16	34,551,553	23,453,594	7,718,817	1,223,125	805,051	31,096	10,365	179,688	1,129,836
304.62	Stores, Shop and Garage Bldgs	16	38,676,881	26,253,866	8,640,415	1,369,162	901,171	34,809	11,603	201,120	1,264,734
304.63	Misc. Structures and Improvements	16	2,049,951	1,391,507	457,959	72,568	47,764	1,945	615	10,660	67,033
305.00	Collecting & Impounding Reservoirs	1	112,179,261	64,514,293	33,261,151	8,301,265	4,947,105	190,705	22,436	157,051	785,255
306.00	Lake, River and Other Intakes	2	11,788,193	6,872,517	3,648,446	740,299	433,806	16,503	5,894	11,788	58,941
307.00	Wells and Springs	2	9,561,153	5,574,151	2,959,177	600,440	351,850	13,386	4,781	9,561	47,806
310.00	Power Generation Equipment	5A	14,934,605	10,173,452	3,322,950	570,502	370,378	13,441	4,480	171,686	407,715
311.20	Pumping Equipment Other	5	21,078,190	11,917,609	6,167,478	1,121,360	693,472	27,402	8,431	170,733	971,705
311.52	Pumping Equipment Source of Supply	2	12,268,901	7,152,769	3,797,225	770,487	451,496	17,176	6,134	12,269	61,345
311.53	Pumping Equipment Water Treatment	2	28,476,670	16,601,899	8,813,529	1,768,335	1,047,941	39,867	14,238	28,477	142,383
311.54	Pumping Equipment T&D	6	4,464,437	2,600,088	1,379,511	279,027	163,845	6,250	2,232	5,357	28,126
320.00	Purification System	4	284,761,156	166,015,754	88,133,578	17,863,001	10,479,211	398,666	142,381	284,761	1,423,806
330.00	Distr. Reservoirs and Standpipes	4	133,406,840	77,242,560	37,794,158	5,256,229	3,775,414	173,429	53,363	1,360,750	7,750,937
331.00	Mains and Accessories	4	-	-	-	-	-	-	-	-	-
10-inch and Over			995,214,521	555,628,267	295,877,277	59,812,393	35,131,073	1,393,300	398,086	7,066,023	39,908,102
Under 10-inch			1,592,794,003	922,227,727	451,236,541	62,756,084	45,076,070	2,070,632	637,118	16,246,499	92,541,332
333.00	Services	11	496,387,250	432,005,824	47,633,321	1,300,535	3,757,651	54,503	19,855	11,615,462	-

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Other Water Utilities Group A	Other Water Utilities Group B	Private Fire Protection	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
334.00	Meters	10	117,931,413	92,053,723	22,297,292	876,230	2,160,503	42,455	16,510	484,698	-
335.00	Fire Hydrants	9	106,963,068	-	-	-	-	-	-	-	-
340.00	Office Furniture	16	7,901,745	5,363,704	1,765,250	279,722	184,111	7,112	2,371	41,089	258,387
340.00	Computers and Peripheral Equipment	16	23,633,871	16,042,671	5,279,807	836,639	550,669	21,270	7,090	122,896	772,828
340.00	Other Office Equipment	16	4,807	3,263	1,074	170	112	4	1	25	157
340.00	Computer Software	16	24,465,278	16,607,031	5,465,543	866,071	570,041	22,019	7,340	127,219	800,015
340.00	Computer Software - CIS	16	1,397,668	948,730	312,237	49,477	32,565	1,258	419	7,268	45,703
341.00	Transportation Equipment	14	1,357,607	1,435,273	105,341	1,262	5,607	16	16	9,159	935
342.00	Stores Equipment	16	28,218,279	19,154,568	6,303,963	998,927	657,486	25,396	8,465	146,735	922,738
343.00	Tools and work Equipment	16	322,222	218,724	71,984	11,407	7,508	290	97	1,676	10,537
344.00	Laboratory Equipment	2	26,029,571	17,668,873	5,815,006	921,447	606,489	23,427	7,809	135,354	851,167
345.00	Power Operated Equipment	16	1,297,370	756,367	401,536	81,475	47,743	1,816	649	1,297	6,487
346.00	Communication Equipment	16	651,328	442,121	145,507	23,057	15,176	586	195	3,387	21,298
347.00	Miscellaneous Equipment	16	12,049,565	8,179,244	2,691,873	426,555	280,755	10,845	3,615	62,658	394,021
348.00	Other Tangible Equipment	16	8,659,261	5,877,906	1,934,479	306,538	201,761	7,793	2,598	45,028	283,158
			327,997	222,644	73,274	11,611	7,642	295	98	1,706	10,725
	Total Depreciable Plant		4,505,210,362	2,729,646,301	1,152,922,632	189,030,294	125,448,117	5,087,931	1,552,036	39,388,209	262,134,836
	Total Utility Plant in Service (Net)		4,532,582,844	2,746,081,951	1,160,273,854	190,181,206	126,220,841	5,120,369	1,561,938	39,621,264	263,521,408
Other Rate Base Elements											
18	Materials and Supplies		10,331,405	6,260,830	2,644,840	433,919	287,213	11,365	3,099	89,883	600,255
16A	Cash Working Capital - Expenses		20,582,604	14,020,870	4,579,629	786,255	510,449	18,524	6,175	98,796	561,905
18	Cash Working Capital - Interest		(7,832,751)	(4,746,647)	(2,005,184)	(328,976)	(217,750)	(8,616)	(2,350)	(66,145)	(455,083)
18	Accrued and Prepaid Taxes		5,450,820	3,303,197	1,395,410	228,934	151,533	5,996	1,635	47,422	316,693
4	Extension Deposits in Suspense		(18,942)	(10,967)	(5,366)	(746)	(536)	(25)	(8)	(193)	(1,101)
18	Unamortized Investment Tax Credit		(252,695)	(153,133)	(64,690)	(10,613)	(7,025)	(278)	(76)	(2,198)	(14,682)
18	Deferred Taxes		(960,396,989)	(582,000,581)	(245,861,632)	(40,336,674)	(26,699,037)	(1,056,437)	(288,119)	(8,355,454)	(55,789,066)
4	Citizens Acquisition CIAC & CAC		(18,666,034)	(10,807,634)	(5,288,087)	(735,442)	(528,249)	(24,266)	(7,466)	(190,394)	(1,084,497)
18	Tax Cuts and Jobs Act- Stub Period		(7,544,577)	(4,272,014)	(1,931,412)	(316,872)	(209,739)	(8,299)	(2,263)	(65,636)	(438,340)
18	Other Additions		373,349	226,249	95,577	15,681	10,379	411	112	3,248	21,692
18	Other Deductions		(777,455)	(471,138)	(199,028)	(32,653)	(21,613)	(855)	(233)	(6,764)	(45,170)
18	Acquisition Adjustments		6,758,742	4,095,798	1,730,238	283,867	187,893	7,435	2,028	58,801	392,683
	Total Other Rate Base Elements		(951,992,533)	(574,855,170)	(244,909,705)	(40,013,320)	(26,536,482)	(1,055,045)	(287,466)	(8,390,636)	(55,944,711)
	Total Original Cost Rate Base		3,580,590,311	2,171,226,781	915,364,149	150,167,886	99,684,359	4,065,324	1,274,472	31,230,628	207,576,697

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 21. ALLOCATION OF UNRECOVERED PUBLIC FIRE PROTECTION.

Factors are based on the relative cost of meters by size for the Residential, Commercial, Industrial, and Public classifications, as follows:

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	\$ 637,120	0.7842
Commercial	154,320	0.1899
Industrial	6,067	0.0075
Public	14,951	0.0184
Total	<u>\$ 812,456</u>	<u>1.0000</u>

FACTOR 22. ALLOCATION OF BAD DEBT EXPENSE.

Factors are based on the historic net charge offs by class.

Customer Classification	Net Charge Off	Allocation Factor
(1)	(2)	(3)
Residential	\$ 9,034,372	0.8905
Commercial	1,077,420	0.1062
Industrial	5,682	0.0006
Public	13,347	0.0013
Other Water Utilities A	-	0.0000
Other Water Utilities B	-	0.0000
Private Fire Protection	14,343	0.0014
Public Fire Protection	-	0.0000
Total	<u>\$ 10,145,164</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

CALCULATION OF COMMODITY/DEMAND RATES FOR STANDBY SERVICE
UNDER PROPOSED LEVEL OF REVENUE**Firm Standby Service:**

Description	Cost of Service		Units Hundred Gals.	Cost Per Unit
	Annual	Per Month		
Total Base Costs	\$ 341,243,540			
Less: Variable Costs	<u>28,177,725</u>		414,350,914	\$ 0.0680 Per Hundred Gallons
Fixed Base Costs	313,065,815	26,088,818	1,135,208 Avg Day	22.9815 Per Hundred of Avg. Day
Max Day Extra Capacity	82,167,241	6,847,270	2,227,374 Peak Day	3.0741 Per Hundred of Peak Day
Max Hour Extra Capacity	105,918,517	8,826,543	258,930 Peak Hour	34.0885 Per Hundred of Peak Hour

Interruptible Standby Service:

Description	Cost of Service		Units Hundred Gals.	Cost Per Unit
	Annual	Per Month		
Fixed Base Costs	\$ 313,065,815			
Less: Depreciation Return and Taxes	<u>231,366,780</u>			
Total	81,699,035	6,808,253	1,135,208 Avg Day	\$ 5.9974 Per Hundred of Avg. Day
Max Day Extra Capacity	82,167,241			
Less: Depreciation Return and Taxes	<u>56,513,650</u>			
Total	25,653,591	2,137,799	2,227,374 Peak Day	0.9598 Per Hundred of Peak Day
Max Hour Extra Capacity	105,918,517			
Less: Depreciation Return and Taxes	<u>88,087,893</u>			
Total	17,830,624	1,485,885	258,930 Peak Hour	5.7385 Per Hundred of Peak Hour
Depreciation, Return & Taxes for Base, Max Day and Max Hour	375,968,323			
Plus: Variable Costs	<u>28,177,725</u>			
Total	404,146,048		414,350,914	0.9754 Per Hundred Gallons

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

SUMMARY OF AVERAGE AND MAXIMUM DAY SYSTEM SENDOUT AND MAXIMUM DAY RATIOS

Year	Average Daily Sendout (MGD)	Maximum Day Sendout (MGD)	Ratio, Maximum to Average
1987	153.4	207.7	1.35
1988	152.7	209.1	1.37
1989	144.8	188.6	1.30
1990	144.9	192.5	1.33
1991	145.1	192.3	1.32
1992	141.5	181.4	1.28
1993	138.7	184.3	1.33
1994	149.4	202.1	1.35
1995	144.1	198.5	1.38
1996	211.4	290.9	1.38
1997	220.3	297.7	1.35
1998	212.2	279.6	1.32
1999	199.1	275.0	1.38
2000	207.5	263.6	1.27
2001	200.5	249.5	1.24
2002	210.4	259.6	1.23
2003	199.8	273.7	1.37
2004	218.1	279.7	1.28
2005	215.3	268.2	1.25
2006	210.1	259.8	1.24
2007	220.9	266.6	1.21
2008	212.4	254.3	1.20
2009	206.0	267.8	1.30
2010	205.8	262.4	1.28
2011	202.3	240.0	1.19
2012	194.0	236.3	1.22
2013	192.7	221.3	1.15
2014	195.7	222.7	1.14
2015	194.7	226.7	1.16
2016	190.7	214.0	1.12
2017	184.8	207.3	1.12
2018	192.2	220.3	1.15
2019	193.7	215.8	1.11

PENNSYLVANIA AMERICAN WATER COMPANY
COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED 2022 RATES
RESIDENTIAL, COMMERCIAL AND MUNICIPAL

2021 Present Rates Per Month							2022 Proposed Rates					
	Zone 1 PAWC	Zone 2	Zone 3 - McEwensville	Zone 4 - Turbotville	Zone 5 - Steelton	Winola	Zone 1 PAWC	Zone 2	Zone 3 - McEwensville	Zone 4 - Turbotville	Zone 5 - Steelton	Winola
Residential												
Customer Charges	\$ 18.00	\$ 18.00	\$ 18.00	\$ 18.00	\$ 17.74		\$ 18.50	\$ 18.50	\$ 18.50	\$ 18.50	\$ 20.68	
5/8	18.00	18.00	18.00	18.00	17.74		18.50	18.50	18.50	18.50	20.68	
3/4	18.00	18.00	18.00	18.00	17.74		18.50	18.50	18.50	18.50	20.68	
1	18.00	18.00	18.00	18.00	38.84		18.50	18.50	18.50	18.50	45.29	
1 1/2	18.00	18.00	18.00	18.00	69.95		18.50	18.50	18.50	18.50	81.56	
2	118.50	118.50	118.50	118.50	101.04		121.80	121.80	121.80	121.80	117.81	
3	221.00	221.00	221.00	221.00	229.27		227.10	227.10	227.10	227.10	267.33	
4	277.40	277.40	277.40	277.40	299.42		285.10	285.10	285.10	285.10	349.12	
6	415.20	415.20	415.20	415.20	479.08		426.70	426.70	426.70	426.70	558.61	
8	803.90	803.90	803.90	803.90	695.96		826.20	826.20	826.20	826.20	811.49	
10	1,164.20	1,164.20	1,164.20	1,164.20	-		1,196.50	1,196.50	1,196.50	1,196.50	-	
12	1,667.50	1,667.50	1,667.50	1,667.50	-		1,713.80	1,713.80	1,713.80	1,713.80	-	
16					1,391.93						1,391.93	
18					1,565.92						1,565.92	
20					1,739.90						1,739.90	
Flat Rate	65.91	65.91	49.06	65.91	35.17	33.23	69.73	69.73	69.73	69.73	41.00	33.23
Consumption Charges, per 100 Gallons:	1.3854	1.3854	0.8983	1.3854	All Classes		1.4815	1.4815	1.4815	1.4815	All Classes	
First Block or Allow.					0.9912		-				1.1557	
Second Block					1.0944						1.2761	
Third Block					0.9456						1.1026	
Fourth Block												
Commercial and Municipal												
Customer Charge	\$ 18.00	\$ 18.00	\$ 18.00	\$ 18.00	\$ 17.74		\$ 18.50	\$ 18.50	\$ 18.50	\$ 18.50	\$ 20.68	
5/8	18.00	18.00	18.00	18.00	17.74		18.50	18.50	18.50	18.50	20.68	
3/4	27.30	27.30	27.30	27.30	38.84		28.10	28.10	28.10	28.10	20.68	
1	45.40	45.40	45.40	45.40	69.95		46.70	46.70	46.70	46.70	45.29	
1 1/2	74.10	74.10	74.10	74.10	101.04		76.20	76.20	76.20	76.20	81.56	
2	118.50	118.50	118.50	118.50	101.04		121.80	121.80	121.80	121.80	117.81	
3	221.00	221.00	221.00	221.00	229.27		227.10	227.10	227.10	227.10	267.33	
4	277.40	277.40	277.40	277.40	299.42		285.10	285.10	285.10	285.10	349.12	
6	415.20	415.20	415.20	415.20	479.08		426.70	426.70	426.70	426.70	558.61	
8	803.90	803.90	803.90	803.90	695.96		826.20	826.20	826.20	826.20	811.49	
10	1,164.20	1,164.20	1,164.20	1,164.20	-		1,196.50	1,196.50	1,196.50	1,196.50	-	
12	1,667.50	1,667.50	1,667.50	1,667.50	1,391.93		1,713.80	1,713.80	1,713.80	1,713.80	1,391.93	
12	-	-	-	-	-		-	-	-	-	-	
Consumption Charges, per 100 Gallons:												
Commercial	1.3854	1.3854	0.8983	0.8983	-		1.4815	1.4815	1.4815	1.4815	-	
First Block					-							
Second Block					-							
Construction rate	0.0657	1.0136	0.8983	0.8983			0.0686	1.0951	1.0951	1.0951		
Municipal												
First Block	1.4742	1.4742	0.8983	0.8983	-		1.5037	1.5037	1.5037	1.5037	-	
Second Block	0.8890	0.8890	0.8983	0.8983	-		0.9068	0.9068	0.9068	0.9068	-	

PENNSYLVANIA-AMERICAN WATER COMPANY
COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
INDUSTRIAL

ZONE 1

Customer Charges	2021 Proposed Rates	2022 Proposed Rates
5/8	\$ 25.40	\$ 26.10
3/4	38.10	39.20
1	63.60	65.40
1 1/2	127.10	130.60
2	203.40	209.10
3	381.40	392.00
4	635.60	653.30
6	1,271.20	1,306.50
8	2,034.30	2,090.80
10	2,923.40	3,004.60
12	4,195.80	4,312.40

Consumption Charges, per 100 Gallons:

Industrial

First Block	1.2796	1.3680
Second Block	0.9736	1.0409
Third Block	0.7658	0.8187
Fourth Block (Curtailment)	0.4676	0.4999

ZONE 5 - STEELTON

5/8	\$ 17.74	\$ 20.68
3/4	17.74	20.68
1	38.84	45.29
1 1/2	69.95	81.56
2	101.04	117.81
3	229.27	267.33
4	299.42	349.12
6	479.08	558.61
8	695.96	811.49
Allowance or First Block	-	-
Second Block	0.9912	1.1557
Third Block	1.0944	1.2761
Fourth Block	0.9456	1.1026

PENNSYLVANIA-AMERICAN WATER COMPANY

COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
OTHER WATER UTILITIES

ZONE 1

Customer Charges	2021 Proposed Rates Per Month		2022 Proposed Rates Per Month	
	Group A	Group B	Group A	Group B
5/8	\$ 26.20	\$ 26.20	\$ 26.90	\$ 26.90
3/4	39.30	39.30	40.40	40.40
1	65.60	65.60	67.40	67.40
1 1/2	130.90	130.90	134.50	134.50
2	209.60	209.60	215.40	215.40
3	392.70	392.70	403.60	403.60
4	654.70	654.70	672.90	672.90
6	1,309.10	1,309.10	1,345.50	1,345.50
8	2,095.60	2,095.60	2,153.80	2,153.80
10	3,010.90	3,010.90	3,094.50	3,094.50
12	4,320.00	4,320.00	4,440.00	4,440.00

Other Water Utilities

For all Consumptions Per 100 Gallons:	0.7220	1.2480	0.7710	1.4180
--	--------	--------	--------	--------

PENNSYLVANIA-AMERICAN WATER COMPANY

COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
PRIVATE FIRE PROTECTION

<u>Size of Connection</u>	<u>2021 Rates Per Month</u>	<u>2022 Rates Per Month</u>
<u>Unmetered</u>		
1	\$ 5.09	\$ 5.37
1 1/4	5.09	5.37
1 1/2	7.33	7.73
2	13.04	13.76
3	29.65	31.28
4	52.19	55.06
6	118.60	125.12
8	211.10	222.71
10	329.69	347.82
12	474.38	500.47
Fire Hydrants	26.87	26.87
<u>Size of Connection</u>	<u>2021 Rates Per Month</u>	<u>2022 Rates Per Month</u>
<u>Metered</u>		
1	\$ 41.68	\$ 43.97
1 1/2	59.54	62.81
2	95.28	100.52
3	178.63	188.45
4	223.30	235.58
6	334.95	353.37
8	513.58	541.83
10	722.00	761.71
Hydrants	26.87	26.87
Sprinkler first 200	62.14	65.56
Sprinkler over 200	0.16	0.17
Standpipes	48.31	50.97

PENNSYLVANIA-AMERICAN WATER COMPANY

COMPARATIVE SCHEDULE OF PRESENT AND PROPOSED RATES
PUBLIC FIRE PROTECTION

<u>Service Area</u>	<u>Public Fire Hydrant Rate Per Month</u>	
	<u>2021 Proposed</u>	<u>2022 Proposed</u>
Hydrants prior to 1/1/2000	\$ 20.00	\$ 20.00
Hydrants at 1/4 the Cost of Service	16.87	17.80
Bradford Township	16.87	17.80
Brownsville Area	17.55	17.80
California Area	18.05	18.05
Reading Area	18.19	18.19
Turbotville	16.87	17.80
Steelton		

APPENDIX A

PENNSYLVANIA-AMERICAN WATER COMPANY
RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

- RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:
- a. A description of the allocation methods used. A comparison of the allocated cost of service by class with the present and proposed revenues. A cost of service schedule showing the Rate of Return produced by present and proposed rates by class of service.

RESPONSE

A description of the methods used for the cost of service study is provided on Exhibit No. 12-A and in PAWC Statement No. 12. A comparison of the allocated cost of service by class with the present and proposed revenues is provided on Schedule A of Exhibit No. 12-A. Schedules B and C showing the rate of return produced by present and proposed rates by customer classification are provided in Exhibit No. 12-A.

PENNSYLVANIA-AMERICAN WATER COMPANY

RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

- RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:
- b. Indicate if the method used for establishing the allocation factors in the Cost of Service Study deviates from the previous study submitted in the last rate case. If yes, indicate which allocation factors were changed and discuss the reason for the changes.

RESPONSE

The methods used for establishing the allocation factors in the cost of service study have not deviated from the previous study submitted in the last case.

PENNSYLVANIA-AMERICAN WATER COMPANY
 RESPONSES TO RATE STRUCTURE
 AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- c. Supply the average day, the maximum day and the maximum hour deliveries to the system adjusted for storage for the test year and two prior years. Also provide workpapers, analyses, comparative data or other documentation supporting the estimated maximum day and peak hour demands by customer class reflected in the Company's cost of service study.

RESPONSE

Refer to Schedule H of Exhibit No. 12-A for the average day and maximum day system deliveries for the years 1987 through 2016. Support for the system maximum hour ratio is provided below and on the attached schedules.

The peak hour consumption analysis in support of the 2.1 system peak hour ratio is attached and summarized below.

Analyses were made to determine hourly water consumption during 1988 peak periods of sendout for PAWC's three largest operating districts, as follows:

Pittsburgh	July 5, 6 and 7, 1988
Riverton	July 6 and 7, 1988
Norristown	July 6, 7 and 8, 1988

These dates had the greatest sendouts experienced in recent years.

PENNSYLVANIA-AMERICAN WATER COMPANY
 RESPONSES TO RATE STRUCTURE
 AND COST OF SERVICE FILING REQUIREMENTS

RS1c., cont.

Recording charts or other hourly logs of total production were read to derive total hourly delivery to each of the districts. Recording charts for storage reservoirs were read to derive hourly draw or fill from each reservoir. The total hourly delivery plus hourly draw less hourly fill equals hourly consumption.

District	Average M.G.D.	Max Hour M.G.D.	Max Hour Ratio
Pittsburgh	69.28	140.88	2.03
Riverton	10.16	26.17	2.58
Norristown	12.68	22.53	1.78
Total	92.12	189.58	2.06

The attachments set forth the hourly deliveries, storage draws and fills and hourly consumption for the several days and districts which support the above amounts.

Support for the customer class demand factors is provided on the attached pages, Customer Class Demand Study, which was included in the Company's prior Rate Case that was filed on April 28, 2017 (Docket No. R-2017-2595853).

Witness: P. R. Herbert

PENNSYLVANIA AMERICAN WATER COMPANY

Hershey, Pennsylvania

CUSTOMER CLASS DEMAND STUDY

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
Harrisburg, Pennsylvania



*Excellence Delivered **As Promised***

February 27, 2017

Pennsylvania American Water Company
800 West Hersheypark Drive
Hershey, PA 17033-2400

Attention John Cox
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have prepared a customer class demand study. The study was conducted to provide a basis for the selection of class maximum day and hour demand ratios for use in the cost of service allocation study.

The attached report presents a description of the methods and procedures used, the usage data for each monitored customer, and the detailed calculations of maximum day and hour ratios by classification. The results of the study are presented on page I-9 of the report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink, reading "Paul R. Herbert".

PAUL R. HERBERT
President

A handwritten signature in black ink, reading "Constance E. Heppenstall".

CONSTANCE E. HEPPENSTALL
Project Manager, Rate Studies

PRH:mlw
058602

Gannett Fleming Valuation and Rate Consultants, LLC

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PART I. INTRODUCTION

PLAN OF REPORT

The report sets forth the results of the customer class demand study conducted during the period of January 2013 through October 2015 for Pennsylvania American Water Company (Company). The study is organized into three parts. Part I, Introduction, contains statements with respect to the basis and purpose of the study, a description of the methods and procedures used, and a summary of the study results. Part II, Maximum Day and Hour Ratios, describes the calculations of the maximum day and maximum hour ratios for each customer class using the observed demand data. Part III, Daily and Hourly Usage Data, provides the daily usage for each monitored location and the hourly usage for selected days during the study period. Unless noted otherwise, all residential usage units are gallons and non-residential units are hundred gallons.

BASIS OF STUDY

Pursuant to the Join Petition for Settlement at Docket No. R-2011-2232243, approved by the Commission's Final Order entered November 10, 2011, the Joint Petitioners agreed that the Company would prepare and submit a study on the feasibility and costs of conducting a customer class demand study including the timetable required to complete such a study. In February 2012, the Company submitted the required Feasibility Study to the Joint Petitioners for their review and comment. The Feasibility Study outlined the scope of the proposed demand study, the facilities and equipment that would be required, and an estimate of the total costs. Subsequent to a meeting of the Joint Petitioners to discuss the Feasibility Study, the parties decided to move forward with the Demand Study.

PURPOSE OF STUDY

In the Base Extra-Capacity method of cost allocation, as described in AWWA Manual M1 - Principles of Water Rates, Fees, and Charges, the extra capacity portion of the water system is allocated to customer classifications based on the non-coincident demands of each classification. The non-coincident demand is the sum of the peaks for each class regardless of the day or hour such peaks may occur. The purpose of a customer class demand study is to establish a basis for selecting maximum day and maximum hour ratios for each customer classification. The ratios will be used for allocating maximum day and hour extra capacity costs in the cost of service allocation study prepared for the Company's rate filing. The results of the cost of service allocation study are used as a guide for designing the proposed rate structure.

METHOD AND PROCEDURES

Overview

The customers were selected for the study with the objective of obtaining a representative sample of customers in each class. Originally, customer usage was to be monitored for one year, with an extension possible if the weather was deemed insufficiently dry to capture typical peak water use behaviors. In order to determine whether to extend the study in subsequent years, the Palmer Drought Severity Index (PDSI) was used. The National Oceanic and Atmospheric Administration publishes the PDSI, among other measures of drought conditions. The PDSI is a long term measure that is used in determining the severity of droughts. The decision criterion for applying the PDSI to the demand study was that, if there was not at least one summer month (June-August) in which the PDSI was less than 1.0, the study would continue. As shown by the presence of green shading in Table 1-1 below, this threshold was met in the first study year for all but two climate divisions and had been met by August 2014 for all climate divisions. Since neither 2013 nor 2014 had remarkably dry summers, it was deemed worthwhile to continue monitoring through a third summer.

Table 1-1
Palmer (Long Term) Drought Severity Index for Summer 2013, 2014 , and 2015

Climate Division	2013			2014			2015		
	June	July	August	June	July	August	June	July	August
1 Poconos	1.29	1.11	1.17	-0.30	-0.18	-0.25	-0.93	-0.94	-1.13
2 East Central Mountains	1.02	0.96	1.08	0.96	-0.19	0.94	1.13	1.36	0.98
3 Southeastern Piedmon	1.48	1.84	2.11	2.61	2.67	-0.29	1.45	1.38	0.76
4 Lower Susquehanna	0.46	0.54	0.77	2.20	2.15	2.19	1.92	1.84	1.34
5 Middle Susquehanna	-0.70	-0.68	-1.05	0.46	0.71	1.35	1.59	1.75	1.37
6 Upper Susquehanna	0.58	1.01	0.86	0.60	0.44	0.79	1.12	1.31	-0.29
7 Central Mountains	0.45	0.62	-0.46	1.03	1.24	2.01	1.66	2.25	1.72
8 South central Mountain	0.43	-0.16	-0.10	1.04	1.24	1.38	1.80	1.89	1.14
9 SW Plateau	0.76	1.69	2.54	1.98	2.05	2.44	2.07	1.85	0.95
10 NW Plateau	0.71	1.01	-0.13	1.77	2.04	2.56	1.51	-0.16	-0.72

Source: National Oceanic and Atmospheric Administration at <http://www.ncdc.noaa.gov/cag/time-series/us>

Legend



Greater than Threshold

Within threshold for acceptability of usage data (less than 1)

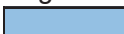
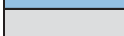

Table 1-2 below displays the values for a short-term soil moisture index, the Palmer Moisture Anomaly or “Z” index. This index better reflects the immediate term weather conditions that influence water use for lawn and garden watering. The blue shading indicates relatively moist months and the light orange shading relatively dry months. The table displays that the driest months in general were experienced in late summer of 2015.

Table 1-2
Palmer (Short Term) Moisture Anomaly Index for Summer 2013, 2014 , and 2015

Cimate Division	2013			2014			2015		
	June	July	August	June	July	August	June	July	August
1 Poconos	3.87	-0.15	0.52	-0.41	0.25	-0.36	3.71	-0.32	-0.88
2 East Central Mountains	3.06	0.12	0.67	0.49	1.04	-0.44	3.41	1.05	-0.74
3 Southeastern Piedmont	4.46	1.53	1.38	0.23	0.99	-1.05	4.19	0.13	-1.23
4 Lower Susquehanna	1.39	0.38	0.88	0.72	0.52	0.82	5.75	0.36	-0.94
5 Middle Susquehanna	1.26	-0.14	-1.28	0.29	0.91	2.29	4.77	0.95	-0.60
6 Upper Susquehanna	1.59	1.48	-0.14	-0.52	-0.29	1.08	3.37	0.89	-0.90
7 Central Mountains	1.33	0.64	-1.40	1.21	0.94	3.33	4.96	2.27	-0.89
8 South Central Mountains	1.30	-0.47	0.13	2.61	0.90	0.72	5.36	0.79	-1.69
9 SW Plateau	2.29	3.01	3.06	1.71	0.81	1.66	6.21	-0.02	-2.13
10 NW Plateau	2.12	1.13	-0.41	3.84	1.34	2.11	4.56	-0.47	-1.72

Source: National Oceanic and Atmospheric Administration at <http://www.ncdc.noaa.gov/cag/time-series/us>

Legend

	Moderately to extremely moist (greater than 1.00)
	Near normal (between 1 and negative 1.24)
	Moderately to very dry (negative 1.25 and lower)

Residential Sample

The source of the usage data for the residential sample is the Company's SCADA information system. The SCADA information system continuously monitors flows through a pump or valve and relays the information to a central location. Some of these monitored pumps or valves serve a closed loop of customers, allowing the data to be used to measure daily and hourly flows for the *group* of residential customers consuming water that passes through that pump or valve.

In order to make the results of the customer demand study representative, residential customers are categorized by housing density to insure that each type of residential user is included. Residential peak demands are primarily influenced by income, lawn size and the amount of precipitation and evapotranspiration. Housing density is used to categorize monitoring points because it represents a measure of both income level and lawn size. The residential monitoring points are located throughout the Company's service area, as indicated in the locator map in Attachment A. The residential class sample consists of approximately 2,500 customers from the following ten SCADA monitoring points that serve a closed loop of exclusively or predominantly residential customers.

System	Housing Density	Residential Customers
Shire Oaks	Low	306
Linnwood	Low	93
Sandy Ridge	Low	31
Sutton Hills	Low	76
Thornburgh and Rosslyn	Medium	649
Winter Road	Medium	212
Ridge Road	Medium	62
Silver	Medium	347
North Strabane	High	106
Millview	High	660
Total		2,542

Commercial Sample

Because the Company serves a large and diverse set of commercial customers, statistical stratified sampling techniques were applied to the design of the commercial sample. The sample design for this report was based on the recommendations of Dr. Berwood Yost, Director of the Floyd Institute's Center for Opinion and Research at Franklin and Marshall College. The sampling used consumption records available for the most recent twelve month period prior to sample design. The customer consumption records were stratified by consumption level into nine strata, using generally accepted statistical techniques for determining strata boundaries. Strata numbers six through nine encompass customers that consume less than 37,000 gallons per year (3,075 gallons per month). The total 2011 consumption by these customers accounted for approximately two percent of total commercial consumption. Because the consumption within these strata is too small to have an impact on the ratio estimates, the customers in these strata were not included in the sampling.

For the five study strata, simple random sampling was used to draw a sample within each stratum. The sampling approach and sample sizes are designed such that each stratum sample yields a reasonable estimate of the consumption for the population of customers within the stratum. This approach of stratification by size, which is common in large populations with skewed distributions, achieves desired precision levels with smaller sample sizes than can be achieved with simple random sampling from the entire population. The total number of customers and the minimum required and actual sample sizes for each stratum are shown in Table 1-3 below. The stratum boundaries and number of customers monitored in each stratum are for the time period when the sample was drawn. The proportion of all commercial customers in each stratum is fixed for the study period by the stratification design; the stratum boundaries vary slightly from year to year as the consumption totals for each customer change. The monitored customers are placed in the stratum for each year based on how their consumption for the year compares to the stratum boundaries for the year. For this reason the number of monitoring points in each stratum varies slightly from year to year.

The commercial customer sample includes monitoring points in each of the Company's six service regions and a broad variety of types including but not limited to apartments, mobile home parks, nursing homes, hotels, office buildings, golf courses, medical facilities, health clubs, stores, restaurants, and private schools.

**Table 1-3
Commercial Sample Design**

Stratum	Stratum Lower Boundary (1,000 gallons / year)	Number of Customers	Recommended Sample Size	Customers Monitored
1	13,587	94	13	17
2	3,101	597	18	21
3	708	2,790	19	25
4	162	8,163	19	22
5	37	16,053	17	21
Total		27,697	86	106

Monitoring data results support the accuracy of the sample design and selection. The total commercial consumption estimated from the sample varied from the actual total billed consumption for the class by no more than seven percent. This performance exceeds the target used to determine the minimum sample size, which was set in order to produce a 95% likelihood of being within twenty percent of the actual population amount.

Industrial and Public Samples

Both the industrial and public customer classes are characterized by the concentration of consumption among a small number of very large customers. This concentration allows for the production of reasonably reliable estimates with relatively modest sample sizes. The industrial sample included 29 monitoring points representing 25 customer accounts. The consumption at these monitoring points constituted 42% to 44% of total industrial class consumption in the three study years. The public sample included 32 customers, which accounted for 50% to 57% of total public class consumption in the three study years.

Sales for Resale Sample

The study included all six sales for resale customers and a total of nine monitoring points, with one customer having four different meter locations.

Data Collection and Processing Procedures

SCADA monitoring data for residential customers was processed by Company staff on a monthly basis. Hourly flows were estimated by averaging the flows reported for fifteen minute intervals. For systems which included a storage tank, the change in tank level was used to calculate flows into and out of the tank and used in determining net flows to customers for each hour. Because the tank level change and average hourly flow data do not line up precisely, sometimes the net flow calculated after the tank adjustment can appear to indicate a negative flow or an extreme high hour. Another adjustment was made for Thornburgh and Rosslyn, a residential system with two significant non-residential customers. The usage of the large customers was monitored with data logging devices and deducted from the flows for the SCADA monitoring point to yield a net flow for the remaining customers.

Radio read data logging devices were installed on the non-residential sample customers. The device attaches to a customer's meter head and records hourly usage for a fixed period of time, which is then periodically read by a mobile device. The majority of the data logging devices were the "Hot Rod" sold by Mueller/Hersey. The Mueller Hot Rod can store approximately five months of data. Most of the remaining devices were "e-coders" by Neptune, which store data for approximately three months. Several non-residential customers had been fitted with Sensus r900i meters, which have built-in data logging capability, but only keep approximately 31 days of data. Regardless of the device used, Company personnel were on a monthly schedule to download the monitoring data. The accuracy of the data was verified by comparing the logged data to consumption recorded by meter reading for billing purposes.

The hourly and daily monitoring data for each location and customer are summarized in spreadsheet format for each customer class, where each sampled customer's data is in a column, with each day (hour) on a different row. Part III of this report contains the spreadsheets with the daily monitoring data along with hourly data for the day on which the maximum hour occurs. For each day (hour), a consumption per sampled customer is calculated. This amount per average customer is the sum of each customer's consumption divided by the number of customers reporting that day. The *average* customer is calculated because technical difficulties with the data logging equipment or anomalous events at the customer locations can result in the absence of data on any given day for one or several customers. Having a missing data point would result in the simple sum of usage representing an underestimate of the total for that day. As a result, a potential maximum day might be missed.

For sales for resale customers, a total consumption is calculated, because all of the customers are monitored. Use of a total rather than average is advised in this case because the high variance in customer size means that occasional missing datapoints can significantly alter the calculated average and produce false peaks.

Identifying Peaks and Calculating Maximum Day and Hour Ratios

The maximum day (hour) is the highest day (hour) of consumption in the class or stratum as a whole for the year. It is the peak that occurs in the calculated average usage per customer in the stratum or class. The maximum day ratios were calculated for each customer and for the class by dividing the peak day consumption by the annual average consumption per day. Maximum hour ratios were calculated similarly, using hourly peaks and annual hourly averages. For the residential monitoring stations, the annual average usages were calculated from the SCADA monitoring station data. For the non-residential customers, the annual average usages were determined from the billing records over a twelve-month period.

RESULTS OF STUDY

A description and results of the calculations of the maximum day and hour ratios for each customer classification are provided in Part II of the report. Part III contains the detailed tables of monitoring data for each customer and residential SCADA monitoring area. A summary of the resulting calculated ratios for the samples is shown in the Table I-4 below and Figure I-1 on the following page. The selected ratios for use in the Company's future cost of service allocation study are summarized in Table 1-5 below.

Table I-4
Ratio Results from Study Samples

	Maximum Day Ratios			Maximum Hour Ratios		
	2013	2014	2015	2013	2014	2015
Residential	1.79	1.72	1.98	5.68	5.29	6.17
Commercial	2.12	1.96	1.63	4.61	4.02	3.95
Industrial	1.46	1.27	1.23	1.72	1.56	1.64
Public	1.32	1.33	1.36	1.82	1.88	2.41
Sales for Resale	1.36	1.19	1.38	3.42	5.06	2.68

Table I-5
Summary of Maximum Day and Hour Ratios

Customer Classification	Maximum Day Ratio	Maximum Hour Ratio
Residential	2.0	5.0
Commercial	2.1	4.6
Industrial	1.5	1.7
Public	1.4	2.4
Sales for Resale	1.4	3.2

PENNSYLVANIA-AMERICAN WATER COMPANY

RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- d. Explain thoroughly the methodology employed if the Company distinguishes between transmission and distribution mains in its allocation of costs.

RESPONSE

For cost allocation purposes, mains that are 10-inch and larger are considered to be transmission mains and are allocated using Factor 3, which is based on average and maximum day extra capacity demands plus the daily requirement for fire demand. Mains sized under 10-inch are considered distribution mains and are allocated using Factor 4, which is based on average and maximum hour extra capacity demands plus the hourly requirement for fire demands.

PENNSYLVANIA-AMERICAN WATER COMPANY

RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

- RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:
- e. Provide a detailed explanation of how storage is utilized to meet base, maximum day and maximum hour demands.

RESPONSE

Storage facilities have been considered to be adequate if the effective volume of the facility, or groups of facilities acting together, provided sufficient volume during peak hour demands and to meet equalization needs on the maximum day and provide a fire protection reserve. The effective volume of storage is that quantity, which can be used from the tank while maintaining adequate system pressures under the domestic, and fire flow conditions for distribution mains. The equalization volume is that quantity of water needed to allow production plant or booster station output rates to be constant and equal to the daily demand on the maximum day of the year. The use of equalization storage enables a reasonably constant rate of treatment plant operation and thereby promotes overall system efficiency and economy. Existing storage capacity has also been analyzed on a case-by-case basis to determine its contribution to overall system reliability. Where appropriate recommendations are made if additional storage will significantly improve a system's reliability (e.g., its ability to maintain service to its customers during an emergency, such as a spill or power outage.)

PENNSYLVANIA-AMERICAN WATER COMPANY
 RESPONSES TO RATE STRUCTURE
 AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- f. Provide workpapers, calculations and supporting documentation which develop the equivalent meters and equivalent service weights reflected in the Company's cost of service study.

RESPONSE

The 5/8-inch dollar equivalent was developed using actual installation costs by meter size, provided by the Company for the years 2009-2019, as follows:

<u>Meter Size</u>	<u>Actual Installation Cost 2009-2019</u>	<u>5/8-Inch Dollar Equivalent</u>
5/8"	\$ 187.81	1.0
3/4"	283.85	1.5
1"	370.77	2.0
1-1/2"	418.45	2.2
2"	649.40	3.5
3"	1,322.95	7.0
4"	3,905.60	20.8
6"	5,782.06	30.8
8"	6,209.44	33.1
10"	8,947.73	47.6

PENNSYLVANIA-AMERICAN WATER COMPANY
 RESPONSES TO RATE STRUCTURE
 AND COST OF SERVICE FILING REQUIREMENTS

RS1f., cont.

The 3/4-inch dollar equivalent was developed using the actual installation costs by size, for the years 2009-2019, provided by the Company, as follows:

<u>Service Size</u>	<u>Actual Installation Cost 2009-2019</u>	<u>1-Inch Equivalent</u>
3/4" & 1"	\$ 1,717.21	1.00
1-1/2"	1,948.59	1.13
2"	5,714.81	3.3
4"	4,747.40	2.8
6"	6,334.24	3.7
8"	26,567.35	15.5
10"	14,235.83	8.3
12"	34,562.03	20.1

PENNSYLVANIA-AMERICAN WATER COMPANY

RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- g. Provide all workpapers and supporting documentation for the fire flow requirement and duration utilized in the cost of service study.

RESPONSE

The source for the estimated fire protection demand of 20,000 gpm is published fire flow criteria for the population served. The 20,000 gpm estimate is the maximum fire flow requirement generally accepted by published authorities, regardless of population size. This maximum has been established by the National Board of Fire Underwriters (now the American Insurance Association).

General fire-fighting requirements, based on population established by the National Board of Fire Underwriters, are as follows:

- a) For populations of 200,00 or less, $Q = 1020 \sqrt{P} (1 - 0.01\sqrt{P})$, where Q is the fire draft in gpm and P is the population in thousands.
- b) For populations in excess of 200,00, $Q = 12,000$ gpm plus 2,000 to 8,000 gpm for a potential second fire.

Inasmuch as PAWC serves a population in excess of 1.5 million, the maximum fire flow of 12,000 gpm would apply. Also, in consideration of the population being well over 200,000, the maximum of the additional allowance to provide for a second fire was selected for a maximum fire flow of 20,000 gpm.

The foregoing requirements were published in Volume I, "Water and Wastewater Engineering," by Fair, Geyer & Okon, published in 1966 by John Wiley & Sons, Inc.

The required fire flow duration is ten hours.

PENNSYLVANIA-AMERICAN WATER COMPANY

RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- h. Provide a breakdown of the number and size of private fire services according to the general water service class of customer.

RESPONSE

Please refer to Volume 6 Filing Requirement Section II, Question OR-10a.

PENNSYLVANIA-AMERICAN WATER COMPANY
RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- i. Provide a calculation of the Company's base cost of water per unit of consumption.

RESPONSE

The Rate Year 1 calculation of the base cost of water per hundred gallons is as follows:

Base Cost of Water (See attached Functional Allocation)	\$306,465,040
Pro Forma Water Consumption (Hundred Gallons)	418,731,318
Base Cost per Hundred Gallons	\$0.7319

The Rate Year 2 calculation of the base cost of water per hundred gallons is as follows:

Base Cost of Water (See attached Functional Allocation)	\$324,227,347
Pro Forma Water Consumption (Hundred Gallons)	414,350,914
Base Cost per Hundred Gallons	\$0.7825

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Maximum Day	Extra Capacity Maximum Day	Customer Facilities Meters	Customer Accounting Billing	Meter Reading	Private	Fire Service Public	General
OPERATION AND MAINTENANCE EXPENSES												
Source of Supply Expenses												
Operation----												
601.1	Salaries and Wages	2	\$ 181,586	\$ 128,617	\$ 51,879	-	-	\$ -	-	\$ 182	\$ 908	\$ -
610.1	Purchased Water	1	2,965,191	2,940,284	-	-	-	-	-	4,151	20,756	-
615.1	Purchased Power	1	2,430,558	2,410,141	-	-	-	-	-	3,403	17,014	-
616.1	Purchased Fuel	1	28,576	28,336	-	-	-	-	-	40	200	-
618.1	Chemicals	1	-	-	-	-	-	-	-	-	-	-
620.1	Materials and Supplies	2	31,728	22,473	9,065	-	-	-	-	32	159	-
631.1	Contract Services -Engineering	2	49,465	35,036	14,132	-	-	-	-	49	247	-
633.1	Contract Services -Legal	2	-	-	-	-	-	-	-	-	-	-
636.1	Contract Services -Other	2	741,618	525,288	211,860	-	-	-	-	742	3,708	-
642.1	Rental of Building	2	-	-	-	-	-	-	-	-	-	-
642.1	Rental of Equipment	2	656	465	187	-	-	-	-	1	3	-
642.1	Transportation	2	-	-	-	-	-	-	-	-	-	-
675.1	Miscellaneous Expenses	2	2,767,162	1,959,981	790,578	-	-	-	-	2,767	13,836	-
	Total Operation		9,196,540	8,050,621	1,077,721	-	-	-	-	11,367	56,831	-
---Maintenance---												
601.2	Salaries and Wages	2	371,193	262,916	106,050	-	-	-	-	371	1,856	-
620.2	Materials and Supplies	2	51,759	36,661	14,788	-	-	-	-	52	259	-
636.2	Contract Services	2	-	-	-	-	-	-	-	-	-	-
636.2	Contract Services - Engineering	2	41,725	29,554	11,921	-	-	-	-	42	209	-
636.2	Contract Services - Other	2	523,900	371,078	149,678	-	-	-	-	524	2,620	-
675.2	Misc. Maintenance Expense	2	7,916	5,607	2,262	-	-	-	-	8	40	-
	Total Maintenance		996,493	705,816	284,699	-	-	-	-	997	4,984	-
	Total Source of Supply Expenses		10,193,033	8,756,437	1,362,420	-	-	-	-	12,364	61,815	-
Water Treatment Expenses												
Operation----												
601.3	Salaries and Wages	5a	1,114,008	746,386	278,056	63,610	-	-	-	3,899	21,612	446
615.3	Power and Pumping	2	10,020,201	7,522,288	3,004,191	-	-	-	-	10,620	53,101	-
618.3	Purchased Power	1	9,028,246	8,952,409	-	-	-	-	-	12,640	63,198	-
620.3	Chemicals	1	10,907,117	10,815,497	-	-	-	-	-	15,270	76,350	-
631.3	Materials and Supplies	6	301,201	212,256	85,029	1,626	-	-	-	361	1,928	-
633.3	Contract Services -Engineering	6	50,830	35,820	14,349	274	-	-	-	61	325	-
636.3	Contract Services -Testing	6	179,379	126,408	50,639	969	-	-	-	215	1,148	-
636.3	Contract Services -Other	6	1,102,638	777,029	311,275	5,954	-	-	-	1,323	7,057	-
641.3	Rental of Building	6	2,360	1,663	666	13	-	-	-	3	15	-
642.3	Rental of Equipment	6	48,817	34,401	13,761	264	-	-	-	59	312	-
650.3	Transportation	6	27,669	19,498	7,811	149	-	-	-	33	177	-
675.3	Miscellaneous Expenses											
	Waste Disposal	1	1,830,364	1,814,989	-	-	-	-	-	2,563	12,813	-
	Other	6	4,605,142	3,245,244	1,300,032	24,868	-	-	-	5,526	29,473	-
	Total Operation		39,817,972	34,303,888	5,095,829	97,727	-	-	-	52,573	287,509	446

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Extra Capacity		Customer Facilities		Customer Accounting		Fire Service		
					Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public	General
----Maintenance----													
601.4	Salaries and Wages												
	Power and Pumping	5A	592,454	396,944	147,877	33,829	-	-	-	-	2,074	11,494	237
	Purification and Laboratory	2	2,731,447	1,934,684	780,374	-	-	-	-	-	2,731	13,657	-
620.4	Materials and Supplies	7	264,343	146,076	58,182	58,182	-	-	-	-	291	1,586	26
636.4	Contract Services	7	23,769	13,135	5,232	5,232	-	-	-	-	26	143	2
	Contract Services - Other	7	828,660	457,918	182,388	182,388	-	-	-	-	912	4,972	83
650.4	Transportation	7	1,140	630	251	251	-	-	-	-	1	7	-
675.4	Miscellaneous Expenses	1	312,714	310,087	-	-	-	-	-	-	438	2,189	-
	Total Maintenance		4,754,527	3,259,474	1,174,304	279,882	-	-	-	-	6,473	34,048	348
	Total Water Treatment Expenses		44,572,499	37,563,362	6,270,133	377,609	-	-	-	-	59,046	301,557	794
Transmission & Distribution Expenses													
----Operation----													
601.5	Salaries and Wages												
	Supervision & Other Dept. Exps.	12	2,832,009	1,146,114	165,389	817,034	376,940	175,018	-	-	27,187	121,210	3,115
	Mains	8	2,645,334	1,340,126	200,516	935,655	-	-	-	-	24,866	140,467	3,703
	Storage Facilities	4	112,232	49,483	-	54,904	-	-	-	-	1,156	6,521	168
	Miscellaneous Meter Expense	10	458,923	-	-	-	457,042	-	-	-	1,882	-	-
	Services on Customer Premises	11	217,384	-	-	-	-	212,276	-	-	5,109	-	-
615.5	Purchased Power	1	526,666	-	-	-	-	-	-	-	737	3,687	-
620.5	Materials and Supplies	12	580,301	234,848	33,890	167,417	77,238	35,863	-	-	5,571	24,837	638
631.5	Contract Services-Engineering	12	213,285	86,316	12,456	61,533	28,388	13,181	-	-	2,048	9,129	235
636.5	Contract Services-Other	12	271,858	110,021	15,877	78,431	36,184	16,801	-	-	2,610	11,636	299
641.5	Rental of Building	12	72,840	29,478	4,254	21,014	9,695	4,502	-	-	689	3,118	80
642.5	Rental of Equipment	12	40,182	16,262	2,347	11,593	5,348	2,483	-	-	386	1,720	44
650.5	Transportation	12	35,510	14,371	2,074	10,245	4,726	2,195	-	-	341	1,520	39
675.5	Miscellaneous Expenses	12	2,139,214	865,740	124,930	617,163	284,729	132,203	-	-	20,536	91,558	2,353
	Total Operation		10,145,738	4,415,001	561,733	2,774,989	1,280,290	594,522	-	-	93,128	415,403	10,674
----Maintenance----													
601.6	Salaries and Wages												
	Supervision and Engineering	13	172,091	41,732	6,092	29,548	293	70,781	-	-	2,478	21,047	120
	Structures and Improvements	4	36,255	15,985	-	17,736	-	-	-	-	373	2,106	54
	Mains	8	1,385,242	701,763	105,001	489,960	-	-	-	-	13,021	73,556	1,939
	Services	11	1,250,966	-	-	-	-	1,221,569	-	-	29,398	-	-
	Meters	10	5,207	-	-	-	5,186	-	-	-	21	-	-
	Storage Facilities	4	4,730	2,086	-	2,314	-	-	-	-	49	275	7
	Fire Hydrants	9	287,380	-	-	-	-	-	-	-	-	287,380	-
620.6	Other	13	5,621,056	1,363,106	198,985	965,135	9,556	2,311,940	-	-	80,943	687,455	3,935
636.6	Materials and Supplies	13	951,554	230,752	33,685	163,382	1,618	391,374	-	-	13,702	116,375	666
	Contract Services	13	1,285,025	311,619	45,490	220,639	2,185	528,531	-	-	18,504	157,159	900
	Contract Services - Engineering	13	12,198	2,958	432	2,094	21	5,017	-	-	176	1492	9
650.6	Transportation	13	480,866	116,610	17,023	82,565	817	197,780	-	-	6,924	58,810	337
675.6	Miscellaneous Expenses	13	1,603,267	388,792	56,756	275,281	2,726	659,424	-	-	23,087	196,080	1,122
	Total Maintenance		13,095,837	3,175,403	463,464	2,248,654	22,402	5,386,416	-	-	188,676	1,601,735	9,089
	Total Transmission and Distribution Expenses		23,241,575	7,590,404	1,025,197	5,023,643	1,302,692	5,980,938	-	-	281,804	2,017,138	19,763

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Extra Capacity		Customer Facilities		Customer Accounting		Fire Service		
					Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public	General
Customer Accounting Expenses													
601.7	Salaries and Wages												
	Meter Reading	15	3,943,680	-	-	-	-	-	-	3,942,891	789	-	-
	Meter Services	10	2,216,912	-	-	-	2,207,823	-	-	-	9,089	-	-
	Materials and Supplies	14	35,902	-	-	-	-	-	35,668	-	213	22	-
636.7	Contract Services -Other	14	217,091	-	-	-	-	-	215,673	-	1,265	132	-
	Transportation	14	36,804	-	-	-	-	-	36,564	-	218	22	-
670.7	Bad Debt	22	8,247,579	-	-	-	-	-	8,236,032	-	11,547	-	-
675.7	Miscellaneous Expenses	14	2,392,182	-	-	-	-	-	2,376,561	-	14,162	1,459	-
	Total Customer Accounting Expenses		17,090,150	-	-	-	2,207,823	-	10,900,498	3,942,891	37,303	1,635	-
Administrative and General Expenses													
601.8	Salaries and Wages	16	18,563,891	7,278,902	2,385,460	1,488,824	967,179	1,648,474	3,003,638	1,085,988	96,532	603,326	5,569
603.8	Salaries of Officers	16	-	-	-	-	-	-	-	-	-	-	-
604.8	Employees Pension and Benefits	17	10,477,151	4,339,636	1,411,272	927,228	761,689	1,067,622	568,909	951,325	58,672	387,655	3,143
	Purchased Power	16	23,405	9,177	3,008	1,877	1,219	2,078	3,787	1,369	122	761	7
621	Materials and Supplies	16	806,129	316,083	103,588	64,652	41,999	71,584	130,432	47,159	4,192	26,199	242
631.8	Contract Services -Engineering	16	52,388	20,541	6,732	4,202	2,729	4,652	8,476	3,065	272	1,703	16
632.8	Contract Services -Accounting	16	804,766	315,549	103,412	64,542	41,928	71,463	130,211	47,079	4,185	26,155	241
633.8	Contract Services -Legal	16	1,744,193	683,898	224,129	139,884	90,872	154,884	282,210	102,035	9,070	56,686	523
634.8	Contract Services -Management												
	Customer Related	14	15,290,482	-	-	-	-	-	15,190,636	-	90,520	9,327	-
436.064	Employee Related	17	4,336,064	1,795,998	584,068	383,742	315,232	441,845	235,448	393,715	24,282	160,434	1,301
	Water Quality Related	1	443,280	439,556	-	-	-	-	-	-	621	3,103	-
	Other	16	36,616,410	14,357,294	4,705,209	2,936,636	1,907,715	3,251,537	5,924,535	2,142,060	190,405	1,190,033	10,985
636.8	Contract Services -Other	16	847,309	332,230	108,879	67,954	44,145	75,241	137,095	49,568	4,406	27,538	254
641.8	Rental of Buildings	16	127,260	49,899	16,353	10,206	6,630	11,301	20,591	7,445	662	4,136	38
642.8	Rental of Equipment	16	89,203	34,976	11,463	7,154	4,647	7,921	14,433	5,218	464	2,899	27
650.8	Transportation	16	1,894,961	743,014	243,502	151,976	98,727	168,273	306,605	110,855	9,854	61,586	568
656.8	Insurance -Vehicles	16	213,709	83,795	27,462	17,139	11,134	18,977	34,578	12,502	1,111	6,946	64
657.8	Insurance -General Liability	16	9,095,669	3,666,412	1,168,793	729,473	473,884	807,695	1,471,679	532,097	47,297	295,609	2,729
658.8	Insurance -Workers Comp	17	1,455,386	602,821	196,041	128,802	105,807	148,304	79,027	132,149	8,150	53,849	137
659.8	Insurance -Other	16	2,402,106	941,866	308,671	192,649	125,150	213,307	388,661	140,523	12,491	78,068	721
	Advertising	14	-	-	-	-	-	-	-	-	-	-	-
660.8	Amortization of Rate Case Exp.	20	695,061	316,044	75,484	97,656	33,641	67,560	53,798	14,110	5,004	31,347	417
667.8	Regulatory Commission	20	21,327	9,697	2,316	2,996	1,032	2,073	1,651	433	154	962	13
675.8	Miscellaneous Expenses	16	11,640,690	4,564,314	1,495,829	933,583	606,480	1,033,693	1,883,464	680,980	60,532	378,322	3,492
	Total Administrative and General Expenses		117,640,838	40,801,702	13,181,671	8,351,175	5,641,839	9,268,484	29,869,864	6,459,675	628,998	3,406,644	30,787

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Maximum Day	Extra Capacity Maximum Day	Meters	Customer Facilities Services	Customer Accounting Billing	Meter Reading	Private	Fire Service Public	General
DEPRECIATION EXPENSE													
303.14	Water Rights - Hybemia Dam	1	490	485	-	-	-	-	-	-	1	3	-
303.35	Waste Handling & Treatment Land	1	6,944	6,886	-	-	-	-	-	-	10	49	-
303.99	Comprehensive Planning Studies	18	957,787	453,991	104,590	-	29,691	107,847	8,812	2,778	8,429	55,073	766
304.15	Other Water Source Structures	2	1,081,970	766,359	309,119	-	-	-	-	-	1,082	5,410	-
304.20	Power and Pumping Structures	5A	3,006,185	2,014,144	750,344	-	-	-	-	-	10,522	58,320	1,202
304.30	Purification Buildings	2	6,342,926	4,492,694	1,812,174	-	-	-	-	-	6,343	31,715	-
304.36	Waste Handling & Treatment Struct.	1	322,443	319,734	-	-	-	-	-	-	451	2,257	-
304.39	Purification Buildings	2	3,331	2,359	952	-	-	-	-	-	3	17	-
304.61	Office Buildings	16	1,188,840	466,144	152,766	-	61,939	105,569	192,354	69,547	6,182	38,637	357
304.62	Stores, Shop and Garage Bldgs.	16	1,390,961	545,396	178,738	-	72,469	123,517	225,057	81,371	7,233	45,206	417
304.63	Misc. Structures and Improvements	16	84,373	33,083	10,842	-	4,366	7,492	13,652	4,936	439	2,742	25
305.00	Collecting & Inpounding Reservoirs	1	2,273,155	2,254,060	-	-	-	-	-	-	3,182	15,912	-
306.00	Lake, River and Other Intakes	2	459,396	325,391	131,250	-	-	-	-	-	459	2,297	-
307.00	Wells and Springs	2	263,228	186,444	75,204	-	-	-	-	-	263	1,316	-
310.40	Other Power Prod. Equipment	5A	538,177	360,578	134,329	-	30,730	-	-	-	1,884	10,441	215
311.50	Pumping Equipment Other	5	810,271	485,433	132,155	-	-	-	-	-	6,563	37,353	972
311.52	Pumping Equipment Source of Supply	2	449,968	318,712	128,556	-	-	-	-	-	450	2,250	-
311.53	Pumping Equipment Water Treatment	2	1,564,560	1,108,177	446,995	-	-	-	-	-	1,565	7,823	-
311.54	Pumping Equipment Transmission and Distributor	8	200,751	101,700	15,217	-	-	-	-	-	1,887	10,660	281
320.00	Purification System	2	10,885,853	7,710,450	3,110,088	-	-	-	-	-	10,886	54,429	-
330.00	Distr. Reservoirs and Standpipes	4	6,764,418	2,982,432	-	-	3,309,153	-	-	-	69,674	393,013	10,147
331.00	Mains and Accessories												
	10-Inch and Over	3	17,510,925	11,875,910	4,790,989	-	-	-	-	-	124,328	702,188	17,511
	Under 10-Inch	4	28,025,412	12,356,404	-	-	13,710,032	-	-	-	288,662	1,628,276	42,038
333.00	Services	11	11,442,715	-	-	-	-	11,173,811	-	-	268,904	-	-
334.00	Meters	10	11,748,245	-	-	-	11,700,077	-	-	-	48,168	-	-
334.00	Fire Hydrants	9	2,281,237	-	-	-	-	-	-	-	-	2,281,237	-
340.00	Office Furniture	16	334,745	131,253	43,015	-	17,440	29,725	54,162	19,583	1,741	10,879	100
340.00	Computers and Peripheral Equipment	16	4,736,675	1,857,250	608,663	-	246,781	420,617	766,394	277,095	24,631	153,942	1,421
340.00	Other Office Equipment	16	740	290	95	-	39	66	120	43	4	24	-
340.00	Computer Software	16	8,781,583	3,443,259	1,128,433	-	457,520	779,805	1,420,860	513,723	45,664	285,401	2,634
340.00	Computer Software BT - CIS	16	6,328,847	2,480,757	813,000	-	329,629	561,824	1,023,684	370,121	32,900	205,623	1,898
341	Computer Software Equipment	14	2,893,070	-	-	-	-	-	2,874,178	370,121	17,127	1,765	-
342.00	Stores Equipment	16	7,021,261	2,753,036	902,232	-	365,808	623,488	1,136,040	410,744	36,511	228,191	2,106
343.00	Tools and work Equipment	16	28,890	11,328	3,712	-	1,505	2,565	4,674	1,690	150	939	9
344.00	Laboratory Equipment	2	165,038	715,205	234,369	-	95,032	161,975	295,129	106,706	9,485	59,281	547
345.00	Power Operated Equipment	16	165,555	117,263	47,299	-	-	-	-	-	166	828	-
345.00	Communication Equipment	16	106,309	41,684	13,661	-	5,539	9,440	17,201	6,219	553	3,455	32
346.00	Miscellaneous Equipment	16	893,075	350,175	114,760	-	46,529	79,305	144,500	52,245	4,644	29,025	268
347.00	Other Tangible Equipment	16	829,734	325,339	106,621	-	43,229	73,680	134,251	48,539	4,315	26,966	249
348.00	Citizens Acquisition CIAC and CAC	16	32,125	12,596	4,128	-	1,674	2,853	5,198	1,879	167	1,044	10
		4	(333,486)	(147,034)	(163,141)	-	-	-	-	-	(3,435)	(19,376)	(500)
Total Depreciation Expense			143,245,719	61,259,367	20,140,530	13,479,297	14,263,579	8,316,266	1,967,219	6,374,611	82,705		

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base		Extra Capacity		Customer Facilities		Customer Accounting		Fire Service	
						Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS
FUNCTION 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO COST FUNCTIONS

Account Number	Account Description	Factor Ref.	Company Test Year	Base	Extra Capacity		Customer Facilities		Customer Accounting		Private	Fire Service		General
					Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading		Public		
Nondepreciable Plant														
301.00	Organization	18	\$ 766,405	\$ 363,276	\$ 83,691	\$ 148,683	\$ 23,759	\$ 86,297	\$ 7,051	\$ 2,223	\$ 6,744	\$ 44,068	\$ 613	
302.00	Franchises and Consents	18	2,404,599	1,139,780	262,582	466,492	74,543	270,758	22,122	6,973	21,160	138,264	1,924	
303.00	Other Intangible Plant	18	1,392,492	660,041	152,060	270,143	43,167	156,795	12,811	4,038	12,254	80,068	1,114	
303.11	Water Rights	1	-	-	-	-	-	-	-	-	-	-	-	
303.12	Reservoir Land	1	-	-	-	-	-	-	-	-	-	-	-	
303.13	Other Sources of Supply Land	2	-	-	-	-	-	-	-	-	-	-	-	
303.20	Power and Pumping Land	5	4,315,318	2,585,307	787,114	703,828	-	-	-	-	34,954	198,936	5,178	
303.30	Purification Land	2	15,412	10,916	4,403	-	-	-	-	-	15	77	-	
303.40	Land and Rights of Way	8	3,508,143	1,777,225	265,917	1,240,830	-	-	-	-	32,977	186,282	4,911	
303.50	Distr. Reservoir & Standpipe Land	4	9,053,180	3,991,538	-	4,428,806	-	-	-	-	93,248	525,989	13,580	
303.61	Office Land	16	5,260,833	2,082,772	676,017	421,919	274,089	467,162	851,203	307,759	27,356	170,977	1,578	
303.62	Stores, Shop and Garage Land	16	-	-	-	-	-	-	-	-	-	-	-	
Total Nondepreciable Plant			26,716,363	12,590,855	2,231,784	7,680,701	415,558	981,012	893,187	320,993	228,708	1,344,661	28,898	
Depreciable Plant														
303.14	Water Rights - Hibernia Dam	1	(0)	-	-	-	-	-	-	-	-	-	-	
303.35	Waste Handling & Treatment Land	1	9,253	9,175	-	-	-	-	-	-	13	65	-	
304	Comprehensive Planning Studies	18	2,139,004	1,013,888	233,579	414,967	66,309	240,852	19,679	6,203	18,823	122,993	1,711	
304.15	Other Water Source Structures	2	34,334,782	24,319,326	9,809,447	-	-	-	-	-	34,335	171,674	-	
304.20	Power and Pumping Structures	5A	97,823,181	65,541,531	24,416,666	5,585,704	-	-	-	-	342,381	1,897,770	39,129	
304.30	Purification Buildings	2	188,102,753	133,233,180	53,740,957	-	-	-	-	-	188,103	940,514	-	
304.36	Waste Handling & Treatment Structures	1	5,514,973	5,468,648	-	-	-	-	-	-	7,721	38,605	-	
304.38	Waste Handling & Treatment Structure Paintir	1	9,352	9,274	-	-	-	-	-	-	13	65	-	
304.39	Purification Buildings - Tank Painting	2	13,323	9,437	3,807	-	-	-	-	-	13	67	-	
304.61	Office Buildings	16	35,244,834	13,819,500	4,528,961	2,826,636	1,836,256	3,129,741	5,702,614	2,061,823	183,273	1,145,457	10,573	
304.62	Stores, Shop and Garage Bldgs	16	40,310,233	15,805,642	5,179,865	3,232,881	2,100,163	3,579,549	6,522,196	2,358,149	209,613	1,310,083	12,093	
304.63	Misc. Structures and Improvements	16	11,901,633	745,709	244,386	152,527	99,086	168,883	307,717	111,257	9,890	61,810	571	
305.00	Collecting & Impounding Reservoirs	1	115,591,873	114,620,901	-	-	-	-	-	-	161,829	809,143	-	
306.00	Lake, River and Other Intakes	2	12,474,541	8,835,717	3,563,976	-	-	-	-	-	12,475	62,373	-	
307.00	Wells and Springs	2	7,044,893	4,989,898	2,012,726	-	-	-	-	-	7,045	35,224	-	
310.00	Power Generation Equipment	5A	13,961,406	9,354,142	3,484,767	797,196	-	-	-	-	48,865	270,851	5,585	
311.20	Pumping Equipment Other	5	20,266,238	12,141,503	3,696,562	3,305,423	-	-	-	-	164,157	934,274	24,319	
311.52	Pumping Equipment Source of Supply	2	11,346,375	8,036,637	3,241,659	-	-	-	-	-	11,346	56,732	-	
311.53	Pumping Equipment Water Treatment	2	26,325,670	18,646,472	7,521,244	-	-	-	-	-	26,326	131,628	-	
311.54	Pumping Equipment T&D	6	4,763,916	3,357,132	1,344,854	25,725	-	-	-	-	5,717	30,489	-	
320.00	Purification System	2	233,283,602	165,234,775	66,649,125	-	-	-	-	-	233,284	1,166,418	-	
330.00	Distr. Reservoirs and Standpipes	4	122,756,607	54,123,388	-	60,052,532	-	-	-	-	1,284,393	7,132,159	184,135	
331.00	Mains and Accessories													
	10-inch and Over	3	931,637,033	631,836,236	254,895,892	-	-	-	-	-	6,614,623	37,358,645	931,637	
	Under 10-inch	4	1,491,041,226	657,400,077	-	729,417,368	-	-	-	-	15,357,725	86,629,495	2,236,562	
333.00	Services	11	489,532,539	-	-	-	-	458,498,524	-	-	11,034,015	-	-	
334.00	Meters	10	121,095,223	-	-	-	120,598,733	-	-	-	496,490	-	-	

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS

FUNCTION 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO COST FUNCTIONS

Account Number	Account Description	Factor Ref.	Total Company Test Year	Extra Capacity		Customer Facilities		Customer Accounting		Fire Service		
				Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public	General
335.00	Fire Hydrants	9	98,369,957	-	-	-	-	-	-	-	98,369,957	-
340.00	Office Furniture	16	5,248,514	674,434	420,931	273,448	466,068	849,210	307,038	27,292	170,577	1,575
340.00	Computers and Peripheral Equipment	16	15,296,342	1,965,580	1,226,767	796,939	1,358,315	2,474,948	894,836	79,541	47,131	4,589
340.00	Other Office Equipment	16	5,917	2,320	475	308	525	957	346	31	192	2
340.00	Computer Software	16	24,638,031	3,165,987	1,975,970	1,283,641	2,187,857	3,986,433	1,441,325	128,118	800,736	7,391
340.00	Computer Software BT - CIS	16	11,040,085	4,328,817	885,415	575,188	980,360	1,786,286	645,845	57,408	358,803	3,312
341.00	Computer Software BT - CIS	14	5,048,287	-	-	-	-	5,015,322	1,565,190	29,886	3,079	-
341	Transportation Equipment	16	26,755,378	3,438,066	2,145,781	1,393,955	2,375,878	4,329,020	1,565,190	139,128	869,550	8,021
342.00	Stores Equipment	16	365,486	143,307	29,312	10,942	32,455	99,136	21,381	1,901	11,878	110
343.00	Tools and Work Equipment	16	24,405,430	3,136,098	1,957,315	1,271,523	2,167,202	3,948,799	1,427,718	126,908	793,176	7,322
344.00	Laboratory Equipment	2	1,541,208	440,323	-	-	-	-	-	1,541	7,706	-
345.00	Power Operated Equipment	16	807,292	316,539	64,745	42,080	71,687	130,620	47,227	4,198	26,237	242
346.00	Communication Equipment	16	3,995,974	1,112,937	694,611	451,238	769,096	1,401,348	506,668	45,037	281,482	2,598
347.00	Miscellaneous Equipment	16	8,660,227	1,127,386	778,524	505,750	862,007	1,570,639	567,876	50,478	315,487	2,912
348.00	Other Tangible Equipment	16	376,180	48,339	30,170	19,599	33,405	60,866	22,007	1,956	12,226	113
Total Depreciable Plant				461,367,736	816,020,975	131,333,238	476,922,404	38,165,790	11,984,889	37,125,891	242,824,751	3,484,508
Total Utility Plant in Service (Net)				463,599,520	823,701,676	131,748,796	477,903,416	39,058,977	12,305,882	37,354,599	244,169,412	3,513,406
Other Rate Base Elements												
18	Materials and Supplies	18	10,331,405	1,128,189	2,004,293	320,274	1,163,316	95,049	29,961	90,916	594,056	8,265
16A	Cash Working Capital - Expenses	20,089,831	8,943,983	2,061,217	1,293,785	863,863	1,438,432	3,857,248	984,402	96,431	546,443	4,018
18	Cash Working Capital - Interest	(7,402,977)	(3,509,011)	(808,405)	(1,436,178)	(229,492)	(833,575)	(68,107)	(1,489)	(65,146)	(25,922)	(5,922)
18	Accrued and Prepaid Taxes	5,100,928	2,417,840	557,021	989,580	158,129	574,364	46,929	14,793	44,888	293,303	4,081
4	Extension Deposits in Suspense	(18,942)	(8,352)	(9,266)	(9,266)	(9,266)	(9,266)	-	-	(195)	(28)	(28)
18	Unamortized Investment Tax Credit	(268,499)	(127,269)	(29,320)	(52,089)	(8,323)	(30,233)	(2,470)	(779)	(2,363)	(15,439)	(215)
18	Deferred Investment Tax Credit	(937,842,759)	(444,537,468)	(102,412,429)	(181,941,495)	(29,073,126)	(105,601,095)	(8,628,153)	(2,719,744)	(8,253,016)	(53,925,959)	(750,274)
4	Citizens Acquisition CIAC & CAC	(19,166,263)	(8,450,405)	-	(9,376,136)	-	-	-	-	(197,413)	(1,113,560)	(28,749)
18	Acquisition Adjustments	7,500,012	3,555,006	819,001	1,455,002	232,500	844,501	69,000	21,750	66,000	431,251	6,000
Total Other Rate Base Elements				(98,694,726)	(187,072,504)	(27,736,175)	(102,444,290)	(4,630,504)	(1,691,086)	(8,219,898)	(53,616,677)	(762,824)
Total Original Cost Rate Base				364,914,794	636,629,172	104,012,621	375,459,126	34,428,473	10,614,796	29,134,701	190,552,735	2,750,582

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Maximum Day	Extra Capacity Maximum Day	Maximum Hour	Meters	Customer Facilities Services	Customer Accounting Billing	Meter Reading	Private	Fire Service Public	General
OPERATION AND MAINTENANCE EXPENSES														
Source of Supply Expenses														
Operation----														
601.1	Salaries and Wages	2	\$ 188,917	\$ 133,810	\$ 53,974	-	-	-	\$ -	\$ -	-	\$ 189	\$ 945	\$ -
610.1	Purchased Water	1	3,024,495	2,999,089	-	-	-	-	-	-	-	4,234	21,171	-
615.1	Purchased Power	1	2,385,591	2,365,552	-	-	-	-	-	-	-	3,340	16,699	-
616.1	Purchased Fuel	1	28,576	28,336	-	-	-	-	-	-	-	40	200	-
618.1	Chemicals	1	-	-	-	-	-	-	-	-	-	-	-	-
620.1	Materials and Supplies	2	31,728	22,473	-	-	-	-	-	-	-	32	159	-
631.1	Contract Services -Engineering	2	49,465	35,036	-	-	-	-	-	-	-	49	247	-
633.1	Contract Services -Legal	2	-	-	-	-	-	-	-	-	-	-	-	-
636.1	Contract Services -Other	2	741,618	525,288	-	-	-	-	-	-	-	742	3,708	-
642.1	Rental of Building	2	-	-	-	-	-	-	-	-	-	-	-	-
642.1	Rental of Equipment	2	656	465	-	-	-	-	-	-	-	1	3	-
675.1	Transportation	2	2,767,162	1,959,981	-	-	-	-	-	-	-	2,767	13,836	-
675.1	Miscellaneous Expenses	2	-	-	-	-	-	-	-	-	-	-	-	-
	Total Operation		9,218,208	8,070,030	1,079,816	-	-	-	-	-	-	11,394	56,988	-
---Maintenance---														
601.2	Salaries and Wages	2	386,179	273,531	110,331	-	-	-	-	-	-	386	1,931	-
620.2	Materials and Supplies	2	51,759	36,661	14,788	-	-	-	-	-	-	52	259	-
636.2	Contract Services	2	-	-	-	-	-	-	-	-	-	-	-	-
	Contract Services - Engineering	2	41,725	29,554	11,921	-	-	-	-	-	-	42	209	-
	Contract Services - Other	2	523,900	371,078	149,678	-	-	-	-	-	-	524	2,620	-
675.2	Misc. Maintenance Expense	2	7,916	5,607	2,262	-	-	-	-	-	-	8	40	-
	Total Maintenance		1,011,479	716,431	288,980	-	-	-	-	-	-	1,012	5,059	-
	Total Source of Supply Expenses		10,229,687	8,786,461	1,368,796	-	-	-	-	-	-	12,406	62,027	-
Water Treatment Expenses														
Operation----														
601.3	Salaries and Wages	5a	1,158,633	777,559	290,238	64,420	-	-	-	-	-	3,939	22,014	463
	Power and Pumping	2	11,046,974	7,825,988	3,156,692	-	-	-	-	-	-	11,049	55,245	-
615.3	Purification and Laboratory	1	8,861,220	8,786,786	-	-	-	-	-	-	-	12,406	62,029	-
618.3	Chemicals	1	11,456,542	11,360,307	-	-	-	-	-	-	-	16,039	80,196	-
620.3	Materials and Supplies	6	301,201	212,286	85,059	1,596	-	-	-	-	-	361	1,898	-
631.3	Contract Services -Engineering	6	50,830	35,825	14,354	269	-	-	-	-	-	61	320	-

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Extra Capacity		Customer Facilities Meters	Customer Accounting Meter Reading	Fire Service	
					Maximum Day	Maximum Hour			Private	Public
635.3	Contract Services -Testing	6	179,379	126,426	50,657	951	-	-	-	-
636.3	Contract Services -Other	6	1,102,638	777,139	311,365	5,844	-	-	215	1,130
641.3	Rental of Building	6	2,360	1,663	666	13	-	-	1,323	6,947
642.3	Rental of Equipment	6	48,817	34,406	13,786	259	-	-	3	15
650.3	Transportation	6	27,669	19,501	7,814	147	-	-	59	308
650.3	Miscellaneous Expenses								33	174
650.3	Waste Disposal	1	1,830,364	1,814,989	-	-	-	-	2,563	12,813
650.3	Other	6	4,605,142	3,245,704	1,300,492	24,407	-	-	5,526	29,012
	Total Operation		40,673,769	35,018,579	5,231,143	97,906	-	-	53,577	272,101
	463									
601.4	---Maintenance----									
601.4	Salaries and Wages	5A	616,374	413,648	154,402	34,270	-	-	2,096	11,711
620.4	Power and Pumping	2	2,841,724	2,012,793	811,881	-	-	-	2,842	14,209
620.4	Purification and Laboratory	7	264,343	146,102	58,182	58,182	-	-	291	1,560
636.4	Materials and Supplies	7	23,769	13,137	5,232	5,232	-	-	26	140
636.4	Contract Services	7	828,660	458,000	182,388	182,388	-	-	912	4,869
650.4	Contract Services - Other	7	1,140	630	251	251	-	-	1	7
650.4	Transportation	7	312,714	310,087	-	-	-	-	438	2,189
675.4	Miscellaneous Expenses	1								
	Total Maintenance		4,888,724	3,354,397	1,212,336	280,323	-	-	6,606	34,705
	358									
	Total Water Treatment Expenses		45,562,493	38,372,976	6,443,479	378,229	-	-	60,183	306,806
	821									
601.5	Transmission & Distribution Expenses									
601.5	---Operation----									
601.5	Salaries and Wages	12	2,945,266	1,192,354	172,062	849,998	382,148	-	28,284	126,100
601.5	Supervision & Other Dept. Exps.	8	2,752,135	1,394,232	208,612	973,430	-	-	25,870	146,138
601.5	Mains	4	116,763	51,481	-	57,121	-	-	1,203	6,784
601.5	Storage Facilities	10	477,451	-	-	-	-	-	1,958	-
601.5	Miscellaneous Meter Expense	11	228,161	-	-	-	-	-	5,292	-
601.5	Services on Customer Premises	1	516,921	512,579	-	-	-	-	724	-
615.5	Purchased Power	12	580,301	234,848	33,890	167,417	-	-	5,571	3,618
620.5	Materials and Supplies	12	213,285	86,316	12,456	61,533	35,863	-	5,571	24,837
631.5	Contract Services -Engineering	12	271,858	110,021	15,877	28,388	13,181	-	2,048	9,129
636.5	Contract Services -Other	12	72,840	29,478	4,254	78,431	16,801	-	2,610	11,636
641.5	Rental of Building	12	40,182	16,262	2,347	21,014	9,695	-	699	3,118
642.5	Rental of Equipment	12	35,510	14,371	2,074	11,593	2,483	-	386	1,720
650.5	Transportation	12	2,139,214	865,740	124,930	617,163	4,726	-	341	1,520
675.5	Miscellaneous Expenses	12						-	20,536	91,558
	Total Operation		10,388,888	4,507,682	576,502	2,847,945	1,313,950	-	95,522	426,158
	10,957									

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Maximum Day	Extra Capacity Maximum Day	Maximum Hour	Meters	Customer Facilities Services	Customer Accounting Billing	Meter Reading	Private	Fire Service Public	General
----Maintenance----														
601.6	Salaries and Wages		179,039	43,399	6,338		30,741	304	73,657	-	-	2,578	21,897	125
	Supervision and Engineering	13	37,718	16,630	-		18,452	-	-	-	-	388	2,191	57
	Structures and Improvements	4	1,441,166	730,096	109,241		509,741	-	-	-	-	13,347	76,526	2,018
	Mains	8	1,301,472	-	-		-	-	1,271,018	-	-	30,454	-	-
	Services	11	5,417	-	-		-	5,395	-	-	-	22	-	-
	Meters	10	4,921	2,170	-		2,407	-	-	-	-	51	286	7
	Storage Facilities	4	298,982	-	-		-	-	-	-	-	-	298,982	-
	Fire Hydrants	9	5,847,997	1,417,554	207,019		1,004,101	9,942	2,405,866	-	-	84,211	715,210	4,094
	Other	13	1,081,823	262,234	38,297		185,749	1,839	445,062	-	-	15,578	132,307	757
620.6	Materials and Supplies	13	1,285,025	311,490	45,490		220,639	2,185	528,659	-	-	18,504	157,159	900
636.6	Contract Services	13	12,198	2,957	432		2,094	21	5,018	-	-	176	1,492	9
650.6	Contract Services - Engineering	13	480,866	116,562	17,023		82,565	817	197,828	-	-	6,924	58,810	337
675.6	Transportation	13	1,603,267	388,632	56,756		275,281	2,726	659,584	-	-	23,087	196,080	1,122
	Miscellaneous Expenses	13								-	-			
	Total Maintenance		13,579,895	3,291,724	480,596		2,331,770	23,229	5,586,692	-	-	195,520	1,660,940	9,426
	Total Transmission and Distribution Expenses		23,968,783	7,799,406	1,057,098		5,179,715	1,337,179	6,196,868	-	-	291,042	2,087,098	20,383
Customer Accounting Expenses														
601.7	Salaries and Wages		4,102,798	-	-		-	-	-	-	4,101,978	821	-	-
	Meter Reading	15	2,306,417	-	-		-	2,296,960	-	-	-	9,456	-	-
620.7	Meter Services	10	35,902	-	-		-	-	-	35,669	-	211	22	-
636.7	Materials and Supplies	14	217,091	-	-		-	-	-	215,684	-	1,276	130	-
	Contract Services -Other	14		-	-		-	-	-	-	-	-	-	-
	Transportation	14	36,804	-	-		-	-	-	36,566	-	216	22	-
670.7	Bad Debt	22	8,664,101	-	-		-	-	-	8,651,971	-	12,130	-	-
675.7	Miscellaneous Expenses	14	2,427,317	-	-		-	-	-	2,411,588	-	14,273	1,456	-
	Total Customer Accounting Expenses		17,790,430	-	-		-	2,296,960	-	11,351,478	4,101,978	38,383	1,630	-
Administrative and General Expenses														
601.8	Salaries and Wages	16	19,311,977	7,533,602	2,466,139		1,544,958	1,010,016	1,722,628	3,157,508	1,141,338	100,422	629,570	5,794
603.8	Salaries of Officers	16	-	-	-		-	-	-	-	-	-	-	-
604.8	Employees Pension and Benefits	17	11,232,765	4,645,972	1,510,807		992,976	817,745	1,145,742	615,556	1,022,182	62,903	415,612	3,370

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Extra Capacity		Customer Facilities		Customer Accounting		Fire Service	
					Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public
621	Purchased Power	16	23,405	9,130	2,989	1,872	1,224	2,088	3,827	1,383	122	763
631.8	Materials and Supplies	16	806,129	314,471	102,943	64,490	42,161	71,907	131,802	47,642	4,192	26,280
632.8	Contract Services- Engineering	16	52,388	20,437	6,690	4,191	2,740	4,673	8,565	3,096	272	1,708
633.8	Contract Services- Accounting	16	804,786	313,939	102,769	64,381	42,089	71,785	131,579	47,582	4,185	26,235
634.8	Contract Services -Legal	16	1,744,193	680,410	222,733	139,535	91,221	155,582	285,176	103,082	9,070	56,861
	Contract Services -Management											523
	Customer Related	14	15,906,128	-	-	-	-	-	15,703,705	-	92,940	9,484
	Employee Related	17	4,451,110	1,840,979	598,674	393,478	324,041	454,013	243,921	405,051	24,926	104,691
	Water Quality Related	1	454,685	450,865	-	-	-	-	-	-	637	3,183
	Other	16	37,145,526	14,490,470	4,743,484	2,971,642	1,942,711	3,313,381	6,073,294	2,195,301	193,157	1,210,944
636.8	Contract Services -Other	16	847,309	330,535	108,201	67,785	44,314	75,580	138,535	50,076	4,406	27,622
641.8	Rental of Buildings	16	127,260	49,644	16,251	10,181	6,656	11,352	20,807	7,521	662	4,149
642.8	Rental of Equipment	16	89,203	34,798	11,391	7,136	4,665	7,957	14,585	5,272	464	2,908
650.8	Transportation	16	1,993,455	777,647	254,564	159,476	104,258	177,816	325,930	117,813	10,366	64,987
656.8	Insurance -Vehicles	16	85,035	27,836	17,439	11,400	19,444	19,444	35,640	12,883	1,134	7,106
657.8	Insurance -General Liability	16	217,982	85,035	27,836	17,439	11,400	19,444	35,640	12,883	1,134	7,106
658.8	Insurance -Workers Comp	16	9,275,411	3,618,728	1,184,598	742,113	485,156	827,456	1,516,693	548,236	48,237	302,411
659.8	Insurance -Other	17	1,484,494	613,987	199,684	131,229	108,071	151,418	81,350	135,089	8,313	54,926
660.8	Advertising	16	2,450,150	955,504	312,884	196,012	128,143	218,553	400,600	144,804	12,741	79,875
666.8	Amortization of Rate Case Exp.	14	-	-	-	-	-	-	-	-	-	-
667.8	Regulatory Commission	20	695,061	318,268	76,665	98,768	31,834	67,490	51,017	13,832	5,004	31,764
675.8	Miscellaneous Expenses	20	21,327	9,766	2,352	3,031	977	2,071	1,565	424	154	975
		16	12,199,123	4,758,878	1,557,828	975,930	638,014	1,088,162	1,994,557	720,968	63,435	397,691
	Total Administrative and General Expenses		121,234,847	41,853,265	13,509,462	8,586,623	5,837,436	9,589,098	30,936,212	6,723,555	647,742	3,519,745
												31,707
	Total Operation & Maintenance Expenses		218,766,241	96,812,108	22,378,835	14,144,567	9,471,575	15,785,966	42,267,690	10,825,533	1,049,756	5,977,306
												52,911

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Extra Capacity		Customer Facilities		Customer Accounting		Fire Service	
					Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public
DEPRECIATION EXPENSE												
303.14	Water Rights - Hybemia Dam	1	-	-	-	-	-	-	-	-	-	-
303.35	Waste Handling & Treatment Land	1	-	-	77,466	135,026	-	77,466	5,638	1,949	6,055	40,299
303.99	Comprehensive Planning Studies	18	696,011	331,788	333,073	-	-	-	-	-	1,166	5,829
304.15	Other Water Source Structures	2	1,165,813	825,745	-	-	-	-	-	-	10,933	61,095
304.20	Power and Pumping Structures	5A	3,215,501	805,483	178,782	-	-	-	-	-	6,939	34,896
304.30	Purification Buildings	2	6,939,292	4,915,101	1,982,556	-	-	-	-	-	448	2,239
304.36	Waste Handling & Treatment Struct.	1	319,789	317,103	-	-	-	-	-	-	-	-
304.39	Purification Buildings	2	3,331	2,359	952	-	-	-	-	-	3	17
304.61	Office Buildings	16	1,147,012	447,449	146,473	91,761	59,989	102,313	187,536	67,788	5,964	37,393
304.62	Stores, Shop and Garage Bldgs.	16	1,368,614	533,896	174,772	109,489	71,579	122,080	223,768	80,885	7,117	44,617
304.63	Misc. Structures and Improvements	16	92,191	35,964	11,773	7,375	4,822	8,223	15,073	5,448	479	3,005
305.00	Collecting & Impounding Reservoirs	1	2,226,779	2,208,074	-	-	-	-	-	-	3,117	15,587
306.00	Lake, River and Other Intakes	2	440,664	312,122	125,898	-	-	-	-	-	441	2,203
307.00	Wells and Springs	2	337,948	239,369	96,552	-	-	-	-	-	338	1,690
310.40	Other Power Prod. Equipment	5A	583,231	391,406	146,099	32,428	-	-	-	-	1,983	11,081
311.50	Pumping Equipment Other	5	846,648	507,227	154,429	138,088	-	-	-	-	6,858	39,030
311.52	Pumping Equipment Source of Supply	2	489,246	346,533	139,778	-	-	-	-	-	489	2,446
311.53	Pumping Equipment Water Treatment	2	1,650,406	1,168,983	471,521	-	-	-	-	-	1,650	8,252
311.54	Pumping Equipment Transmission and Distributor	8	190,941	96,731	14,473	67,536	-	-	-	-	1,795	10,139
320.00	Purification System	2	12,853,031	9,103,802	3,672,111	-	-	-	-	-	12,853	64,265
330.00	Distr. Reservoirs and Standpipes	4	6,556,672	2,890,837	-	3,207,524	-	-	-	-	67,534	380,943
331.00	Mains and Accessories											
	10-inch and Over	3	18,693,003	12,677,595	5,114,406	-	-	-	-	-	132,720	749,589
	Under 10-inch	4	29,917,272	13,190,525	-	14,635,529	-	-	-	-	308,148	1,738,193
333.00	Services	11	11,951,882	-	-	-	-	11,672,208	-	-	279,674	-
334.00	Meters	10	11,377,657	-	-	-	11,331,009	-	-	-	46,648	-
334.00	Fire Hydrants	9	2,440,499	-	-	-	-	-	-	-	-	-
340.00	Office Furniture	16	495,036	193,114	63,216	39,603	25,890	44,157	80,938	29,257	2,574	16,138
340.00	Computers and Peripheral Equipment	16	7,004,899	2,732,611	894,526	560,392	366,356	624,837	1,145,301	413,990	36,425	228,360
340.00	Other Office Equipment	16	739	288	94	59	39	66	121	44	4	24
340.00	Computer Software	16	8,930,868	3,483,932	1,140,472	714,469	467,084	796,633	1,460,197	527,814	46,441	291,146
340.00	Computer Software BT	16	1,328,259	518,154	169,619	106,261	69,468	118,481	217,170	78,500	6,907	43,301
340.00	Computer Software BT - CIS	14	1,480,265	-	-	-	-	-	-	-	8,704	888
341	Transportation Equipment	16	7,837,238	3,057,307	1,000,815	626,979	409,888	699,082	1,470,673	463,181	40,754	255,494
342.00	Stores Equipment	16	28,513	11,123	3,641	2,281	1,491	2,543	1,281,388	1,685	148	930
343.00	Tools and work Equipment	16	2,001,639	780,939	255,609	160,131	104,686	178,546	327,268	118,297	10,409	65,253
344.00	Laboratory Equipment	2	141,163	99,986	40,330	-	-	-	-	-	141	706
345.00	Power Operated Equipment	16	86,987	33,934	11,108	6,959	4,549	7,759	14,222	5,141	452	2,836
346.00	Communication Equipment	16	1,160,368	452,660	148,179	92,829	60,687	103,505	189,720	68,578	6,034	37,828
347.00	Miscellaneous Equipment	16	797,506	311,107	101,842	63,800	41,710	71,138	130,392	47,133	4,147	25,999
348.00	Other Tangible Equipment	16	32,101	12,523	4,099	2,568	1,679	2,863	5,249	1,897	167	1,046
	Citizens Acquisition CIAC and CAC	4	(333,486)	(147,034)	-	(163,141)	-	-	-	-	(3,435)	(19,376)
Total Depreciation Expense			146,495,528	64,241,076	17,301,365	20,816,728	13,040,693	14,631,900	6,759,316	1,911,587	1,063,224	6,643,680
												85,956

PENNSYLVANIA-AMERICAN WATER COMPANY- WATER OPERATIONS EXCLUDING STEELTON
ALLOCATION OF COST OF SERVICE TO COST FUNCTIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base	Extra Capacity		Customer Facilities		Customer Accounting		Fire Service	General
					Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading	Private	Public
Amortizations												
19			(6,781,127)	(3,231,207)	(758,130)	(1,300,620)	(194,618)	(757,452)	(62,386)	(21,021)	(58,996)	(391,271)
Taxes, Other Than Income												
19	Local Property and Miscellaneous		1,190,831	567,431	133,135	228,401	34,177	133,016	10,956	3,692	10,360	68,711
17	Federal and state Payroll Taxes		4,473,084	1,850,068	601,630	395,421	325,641	456,255	245,125	407,051	25,049	165,504
19	State Capital Stock Tax	-	-	-	-	-	-	-	-	-	-	-
20	PUC and OCA Assessments		4,102,437	1,878,506	452,499	582,956	187,892	398,347	301,119	81,638	29,538	187,481
19	Public Utility Realty Taxes		2,311,614	1,101,484	258,438	443,368	66,343	258,207	21,267	7,166	20,111	133,380
Total Taxes Other Than Income Taxes												
			12,077,967	5,397,489	1,445,702	1,650,146	614,053	1,245,825	578,467	499,547	85,058	555,076
Total O&M, Deprec, Amort, Other Taxes												
			370,578,609	163,219,466	40,367,772	35,310,821	22,931,703	30,906,239	49,563,087	13,215,646	2,139,042	12,784,791
Federal and State Income Taxes												
19			63,767,457	30,385,193	7,129,202	12,230,598	1,830,126	7,122,825	566,661	197,679	554,777	3,679,382
Utility Operating Income Available for Return												
19			284,656,930	135,639,027	31,824,645	54,597,199	8,169,654	31,796,179	2,618,844	882,436	2,476,515	16,424,705
Total Cost of Service												
			719,002,996	329,243,686	79,321,619	102,138,618	32,931,483	69,825,243	52,768,592	14,295,761	5,170,334	32,888,878
14	Other Water Revenues - Billing and Collecting		(648,039)	-	-	-	-	-	(643,840)	-	(3,810)	(389)
20	Other Water Revenues -Penalties		(4,419,380)	(2,023,634)	(487,458)	(627,994)	(202,408)	(429,122)	(324,382)	(87,946)	(31,820)	(201,966)
14	Other Water Revenues - Misc. Service Revenues		(4,654,819)	-	-	-	-	-	(4,624,656)	-	(27,370)	(2,793)
16	Other Water Revenues -Rents from Other Property		(1,395,706)	(544,465)	(178,232)	(111,656)	(72,995)	(124,497)	(228,198)	(82,486)	(7,258)	(45,500)
20	Revenue from Contract Sales		(5,346,669)	(2,448,240)	(589,738)	(759,762)	(244,877)	(519,162)	(392,446)	(106,399)	(38,496)	(244,343)
9	Unrecovered Public Fire		(23,666,758)	-	-	-	-	-	-	-	-	(23,666,758)
21	Reallocate Unrecovered Public Fire		23,666,758	-	-	-	23,666,758	-	-	-	-	-
Total Cost of Service Related to Sales												
			\$ 702,538,382	\$ 324,227,347	\$ 78,066,191	\$ 100,639,206	\$ 56,077,961	\$ 68,752,462	\$ 46,555,070	\$ 14,018,930	\$ 5,061,580	\$ 8,727,129
Wastewater Allocation												
23			35,171,958	17,016,193	4,101,050	5,279,311	1,702,323	3,608,643	2,725,827	738,611	-	-
Total Wastewater Allocation												
			35,171,958	17,016,193	4,101,050	5,279,311	1,702,323	3,608,643	2,725,827	738,611	-	-
Total Cost of Service After WW Subsidy												
			\$ 737,710,340	\$ 341,243,540	\$ 82,167,241	\$ 105,918,517	\$ 57,780,284	\$ 72,361,105	\$ 49,280,897	\$ 14,757,541	\$ 5,061,580	\$ 8,727,129
												\$ 412,508

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS
FUNCTION 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO COST FUNCTIONS

Account Number	Account Description	Factor	Ref.	Company Test Year	Base		Extra Capacity		Customer Facilities		Billing	Customer Accounting Meter Reading	Private	Fire Service Public	General
					\$	\$	Maximum Day	Maximum Hour	Meters	Services					
Nondepreciable Plant															
301.00	Organization	18		\$ 766,405	\$ 365,345	\$ 85,301	\$ 148,683	\$ 21,766	\$ 85,301	\$ 6,668	\$ 2,146	\$ 6,668	\$ 44,375	\$ 613	
302.00	Franchises and Consents	18		2,404,599	1,146,272	267,632	466,492	68,291	267,632	19,477	6,733	20,920	139,226	1,924	
303.00	Other Intangible Plant	18		2,048,611	976,573	228,010	397,431	58,181	228,010	16,594	5,736	17,823	118,615	1,639	
303.11	Water Rights	1		-	-	-	-	-	-	-	-	-	-	-	
303.12	Reservoir Land	1		-	-	-	-	-	-	-	-	-	-	-	
303.13	Other Sources of Supply Land	2		-	-	-	-	-	-	-	-	-	-	-	
303.20	Power and Pumping Land	5		4,315,318	2,585,307	787,114	703,828	-	-	-	-	-	198,936	5,178	
303.30	Purification Land	2		15,412	10,916	4,403	-	-	-	-	-	-	77	-	
303.40	Land and Rights of Way	8		3,508,143	2,655,917	1,240,830	-	-	-	-	-	-	186,282	4,911	
303.50	Distr. Reservoir & Standpipe Land	4		9,053,160	3,991,538	-	4,428,806	-	-	-	-	-	93,248	13,580	
303.61	Office Land	16		5,260,833	2,052,251	671,808	420,867	275,142	469,266	860,146	310,915	27,356	171,503	1,578	
303.62	Stores, Shop and Garage Land	16		-	-	-	-	-	-	-	-	-	-	-	
Total Nondepreciable Plant				27,372,482	12,905,427	2,310,185	7,806,937	423,380	1,050,209	902,425	325,530	233,961	1,385,003	29,423	
Depreciable Plant															
303.14	Water Rights - Hibernia Dam	1		(0)	-	-	-	-	-	-	-	-	-	-	
303.35	Waste Handling & Treatment Land	1		0	-	-	-	-	-	-	-	-	-	-	
304	Comprehensive Planning Studies	18		1,923,080	916,732	214,039	373,078	54,615	214,039	15,577	5,385	16,731	111,346	1,538	
304.15	Other Water Source Structures	2		36,738,727	26,022,040	10,496,254	-	-	-	-	-	-	183,694	-	
304.20	Power and Pumping Structures	5A		104,768,073	70,309,854	26,244,402	5,825,105	-	-	-	-	-	1,990,593	41,907	
304.30	Purification Buildings	2		202,725,849	143,590,719	57,918,775	-	-	-	-	-	-	2,013,629	-	
304.36	Waste Handling & Treatment Structures	1		5,035,859	4,993,558	-	-	-	-	-	-	-	35,251	-	
304.38	Waste Handling & Treatment Structure Paint	1		5,845	5,796	-	-	-	-	-	-	-	41	-	
304.39	Purification Buildings - Tank Painting	2		8,327	5,898	2,379	-	-	-	-	-	-	42	-	
304.61	Office Buildings	16		34,551,553	13,478,561	4,412,233	2,764,124	1,807,046	3,081,999	5,649,179	2,041,997	179,668	1,126,381	10,365	
304.62	Stores, Shop and Garage Bldgs.	16		38,676,881	15,087,851	4,939,038	3,094,151	2,022,801	3,449,978	6,323,670	2,285,804	201,120	1,260,866	11,803	
304.63	Misc. Structures and Improvements	16		2,049,951	799,686	261,779	163,996	107,212	182,856	335,167	121,152	10,660	66,828	615	
305.00	Collecting & Impounding Reservoirs	1		112,179,261	111,236,955	-	-	-	-	-	-	-	157,051	785,255	
306.00	Lake, River and Other Intakes	2		11,788,193	8,349,577	-	-	-	-	-	-	-	11,788	58,941	
307.00	Wells and Springs	2		9,561,153	6,772,165	-	-	-	-	-	-	-	9,561	47,806	
310.00	Power Generation Equipment	5A		14,934,605	10,022,613	3,741,118	830,364	-	-	-	-	-	283,757	5,974	
311.20	Pumping Equipment Other	5		21,078,190	12,627,944	3,844,662	3,437,853	-	-	-	-	-	971,705	25,294	
311.52	Pumping Equipment Source of Supply	2		12,268,901	8,690,062	3,505,225	-	-	-	-	-	-	61,345	-	
311.53	Pumping Equipment Water Treatment	2		28,476,670	20,170,025	8,135,785	-	-	-	-	-	-	142,383	-	
311.54	Pumping Equipment T&D	6		4,464,437	3,146,535	23,662	-	-	-	-	-	-	28,126	-	
320.00	Purification System	2		284,761,156	201,696,327	81,356,262	-	-	-	-	-	-	1,423,806	-	
330.00	Distr. Reservoirs and Standpipes	4		133,406,840	58,819,076	-	65,262,626	-	-	-	-	-	7,750,937	200,110	
331.00	Mains and Accessories	3		995,214,521	674,954,488	272,290,693	-	-	-	-	-	-	39,908,102	995,215	
	10-inch and Over	4		1,582,794,003	702,262,876	-	779,194,826	-	-	-	-	-	92,541,332	2,389,191	
333.00	Services	11		496,387,250	-	-	-	-	484,771,789	-	-	-	11,615,462	-	
334.00	Meters	10		117,931,413	-	-	-	-	117,447,894	-	-	-	483,519	-	

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS

FUNCTION 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO COST FUNCTIONS

Account Number	Account Description	Factor Ref.	Total Company Test Year	Base		Extra Capacity		Customer Facilities		Customer Accounting		Private	Fire Service Public	General
				Maximum Day	Maximum Hour	Meters	Services	Billing	Meter Reading					
335.00	Fire Hydrants	9	106,963,068	-	-	-	-	-	-	-	-	-	106,963,068	-
340.00	Office Furniture	16	7,901,745	3,082,471	632,140	1,009,053	413,261	704,836	1,291,935	466,993	41,089	-	257,597	2,371
340.00	Computers and Peripheral Equipment	16	23,633,871	9,219,573	1,890,710	3,018,045	1,236,051	2,108,141	3,864,138	1,396,762	122,896	-	770,464	7,090
340.00	Other Office Equipment	16	4,807	1,875	385	614	251	429	786	284	25	-	157	1
340.00	Computer Software	16	24,465,278	9,543,905	1,957,222	3,124,216	1,279,534	2,182,898	4,000,073	1,445,898	127,219	-	797,568	7,340
340.00	Computer Software BT	16	545,226	545,226	111,813	178,481	73,098	124,671	228,517	82,602	7,268	-	45,564	419
341.00	Computer Software BT - CIS	14	1,397,668	-	-	-	-	-	1,547,514	-	9,159	-	935	-
341.00	Computer Software BT - CIS	14	1,557,607	-	-	-	-	-	1,547,514	-	9,159	-	935	-
341.00	Transportation Equipment	16	28,218,279	11,007,951	2,257,462	3,603,474	1,475,816	2,517,070	4,613,689	1,667,700	146,735	-	919,916	8,465
342.00	Stores Equipment	16	322,222	125,689	41,148	125,689	18,852	28,742	52,883	19,043	1,676	-	10,504	97
343.00	Tools and Work Equipment	16	26,029,376	10,194,136	3,323,976	2,062,366	1,361,347	2,321,638	4,255,635	1,538,348	135,354	-	848,564	7,809
344.00	Laboratory Equipment	2	1,297,370	918,927	320,659	918,927	-	-	-	-	1,297	-	6,487	-
345.00	Power Operated Equipment	16	651,328	254,083	83,175	52,106	34,064	58,098	106,492	38,493	3,387	-	21,233	195
346.00	Communication Equipment	16	12,049,565	4,700,535	963,965	1,538,729	630,192	1,074,821	1,970,104	712,129	62,658	-	392,816	3,615
347.00	Miscellaneous Equipment	16	8,659,261	3,777,978	1,105,788	692,741	452,879	772,406	1,415,789	511,762	45,028	-	282,292	2,598
348.00	Other Tangible Equipment	16	327,997	127,952	41,885	26,240	17,154	29,257	53,627	19,385	1,706	-	10,693	98
Total Depreciable Plant				2,147,019,649	502,162,152	871,662,713	128,430,067	503,623,273	35,724,775	12,353,737	38,392,065	-	261,120,024	3,721,910
Total Utility Plant in Service (Net)				2,159,925,076	504,472,337	879,469,650	128,853,447	504,673,482	36,627,200	12,679,267	39,626,026	-	262,505,027	3,751,333
Other Rate Base Elements														
18	Materials and Supplies	18	10,331,405	4,924,981	1,149,885	2,004,293	293,412	1,149,885	83,684	28,928	89,883	-	598,188	8,265
16A	Cash Working Capital - Expenses	16A	20,582,604	9,103,686	2,105,600	1,325,520	891,227	1,484,006	3,986,850	1,020,897	98,796	-	561,905	4,117
18	Cash Working Capital - Interest	18	(7,832,751)	(3,733,872)	(871,785)	(1,519,554)	(222,450)	(871,785)	(63,445)	(21,932)	(68,145)	-	(453,516)	(6,266)
18	Accrued and Prepaid Taxes	18	5,450,820	2,598,406	606,676	1,057,459	154,803	606,676	44,152	15,262	47,422	-	315,602	4,361
4	Extension Deposits in Suspense	4	(18,942)	(8,352)	(9,266)	(9,266)	(9,266)	-	-	-	(195)	-	(28)	-
18	Unamortized Investment Tax Credit	18	(252,695)	(120,460)	(49,023)	(7,177)	(7,177)	(28,125)	(2,047)	(708)	(2,198)	-	(14,631)	(202)
18	Deferred Taxes	18	(960,396,999)	(457,821,249)	(106,892,186)	(186,317,018)	(27,275,275)	(106,892,186)	(7,779,216)	(2,689,112)	(8,355,454)	-	(55,606,986)	(768,318)
4	Citizens Acquisition CIAC & CAC	4	(18,666,034)	(8,229,854)	-	(9,131,424)	-	-	-	-	(192,260)	-	(1,084,497)	(27,999)
18		18												
18		18												
18	Acquisition Adjustments	18	6,758,742	3,221,892	752,248	1,311,196	191,948	752,248	54,746	18,924	58,801	-	391,331	5,407
Total Other Rate Base Elements				(944,043,850)	(450,064,822)	(191,327,817)	(25,975,512)	(103,799,281)	(3,675,276)	(1,627,741)	(8,323,350)	-	(55,293,705)	(780,663)
Total Original Cost Rate Base				1,709,860,254	401,294,650	688,141,833	102,879,935	400,874,201	32,951,924	11,051,526	31,302,676	-	207,211,322	2,970,670

PENNSYLVANIA-AMERICAN WATER COMPANY
RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

RS1. Provide a complete (fully allocated) cost of service study if an interval of approximately three years has passed between a previous cost of service study and the historic test year date of the current filing. The cost of service study shall provide the necessary data to determine if the water rate structure is fair and equitable to all classifications of water users (including public and private fire protection customers) and reflects, as nearly as possible, the cost of providing the service. The study shall correspond to the test year proposed revenue requirements (future test year only, if used). Summaries of conclusions and all back-up calculations shall be made part of the submission of the cost of service study, and shall include the following:

- j. Provide a detailed cost analysis that supports the Company's customer charges, by meter size, showing all direct and indirect costs included.

RESPONSE

Please refer to the attached Rate Year 1 and Rate Year 2 schedules.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

CALCULATION OF THE 5/8-INCH CUSTOMER COSTS PER MONTH
INCLUDING THE UNRECOVERED PUBLIC FIRE COSTS

<u>Cost Function</u>	<u>Cost of Service</u>	<u>Number of Units</u>	<u>Unit Cost Per Month</u>
Meters	32,628,984	808,626 5/8 Equivalents	\$ 3.36
Services	65,479,744	688,065 3/4 Equivalents	7.93
Billing/Collecting	46,746,760	8,032,188 Bills	5.82
Meter Reading	<u>13,592,548</u>	8,032,188 Bills	<u>1.69</u>
Subtotal	158,448,036		18.80
Unrecovered Public Fire	<u>21,839,090</u>	808,626 5/8 Equivalents	2.25
Total	<u><u>180,287,126</u></u>		<u><u>\$ 21.05</u></u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

CALCULATION OF THE 5/8-INCH CUSTOMER COSTS PER MONTH
INCLUDING THE UNRECOVERED PUBLIC FIRE COSTS

Cost Function	Cost of Service*	Number of Units	Unit Cost Per Month
Meters	28,905,920	808,626 5/8 Equivalents	\$ 2.98
Services	61,323,183	688,065 3/4 Equivalents	7.43
Billing/Collecting	28,644,387	8,032,188 Bills	3.57
Meter Reading	<u>6,667,175</u>	8,032,188 Bills	<u>0.83</u>
Subtotal	125,540,665		14.81
Unrecovered Public Fire	<u>21,839,090</u>	808,626 5/8 Equivalents	2.25
Total	<u><u>147,379,755</u></u>		<u><u>\$ 17.06</u></u>

* Includes only direct customer costs as shown on the attached schedules.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

ANALYSIS OF DIRECT CUSTOMER COSTS

Description	Meters	Services	Billing & Collecting	Meter Reading
Operation and Maintenance Expenses				
T&D Supervision - Operation	\$ 376,940	\$ 175,018	\$ -	\$ -
Miscellaneous Meter Expense	457,042	-	-	-
Services on Customer Premises	-	212,276	-	-
T&D Supervision - Maintenance	293	70,781	-	-
Services Maintenance	-	1,221,569	-	-
Meter Maintenance	5,186	-	-	-
Customer Accounting Expenses	2,207,823	-	10,900,498	3,942,891
Management Fees - Customer	-	-	15,190,636	-
Employee Pension and Benefits	761,689	1,067,622	568,909	951,325
Transportation Expense	98,727	168,273	306,605	110,855
Worker's Compensation	105,807	148,304	79,027	132,149
Advertising Expense	-	-	-	-
Office Rents	(72,006)	(122,727)	(223,618)	(80,851)
Other Rev. Billing and Collecting	-	-	(637,012)	-
Other Rev. Customer Related	-	-	(4,616,095)	-
Subtotal	3,941,501	2,941,116	21,568,950	5,056,369
Depreciation Expense				
Meters	11,700,077	-	-	-
Services	-	11,173,811	-	-
Office Buildings	61,939	105,569	192,354	69,547
Office Furniture & Equipment	17,440	29,725	54,162	19,583
Computer Software BT CIS			2,893,070	
Transportation Equipment	365,808	623,488	1,136,040	410,744
Subtotal	12,145,264	11,932,593	4,275,626	499,874
Taxes Other Than Income				
Payroll Taxes	313,016	438,740	233,794	390,948
Assessments	188,931	379,423	302,133	79,242
Subtotal	501,947	818,163	535,927	470,190
Rate Base				
Meters	120,598,733	-	-	-
Services	-	458,498,524	-	-
Office Land/Buildings	2,110,345	3,596,903	6,553,817	2,369,582
Office Furniture and Equipment	2,354,336	4,012,765	7,311,548	2,643,545
Computer Software BT CIS			5,048,287	
Transportation Equipment	1,393,955	2,375,878	4,329,020	1,565,190
Subtotal	126,457,369	468,484,070	23,242,672	6,578,317
Return and Income Taxes	12,317,208	45,631,311	2,263,884	640,742
Total Direct Customer Costs	\$ 28,905,920	\$ 61,323,183	\$ 28,644,387	\$ 6,667,175

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

CALCULATION OF THE 5/8-INCH CUSTOMER COSTS PER MONTH
INCLUDING THE UNRECOVERED PUBLIC FIRE COSTS

Cost Function	Cost of Service	Number of Units	Unit Cost Per Month
Meters	32,411,203	812,864 5/8 Equivalents	\$ 3.32
Services	68,752,462	692,303 3/4 Equivalents	8.28
Billing/Collecting	46,555,070	8,083,044 Bills	5.76
Meter Reading	<u>14,018,930</u>	8,083,044 Bills	<u>1.73</u>
Subtotal	161,737,665		19.09
Unrecovered Public Fire	<u>23,666,758</u>	812,864 5/8 Equivalents	2.43
Total	<u><u>185,404,423</u></u>		<u><u>\$ 21.52</u></u>

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

CALCULATION OF THE 5/8-INCH CUSTOMER COSTS PER MONTH
INCLUDING THE UNRECOVERED PUBLIC FIRE COSTS

Cost Function	Cost of Service*	Number of Units	Unit Cost Per Month
Meters	28,500,991	812,864 5/8 Equivalents	\$ 2.92
Services	64,612,980	692,303 3/4 Equivalents	7.78
Billing/Collecting	28,277,984	8,083,044 Bills	3.50
Meter Reading	<u>7,055,241</u>	8,083,044 Bills	<u>0.87</u>
Subtotal	128,447,197		15.07
Unrecovered Public Fire	<u>23,666,758</u>	812,864 5/8 Equivalents	2.43
Total	<u><u>152,113,955</u></u>		<u><u>\$ 17.50</u></u>

* Includes only direct customer costs as shown on the attached schedules.

PENNSYLVANIA-AMERICAN WATER COMPANY - WATER OPERATIONS EXCLUDING STEELTON

ANALYSIS OF DIRECT CUSTOMER COSTS

Description	Meters	Services	Billing & Collecting	Meter Reading
Operation and Maintenance Expenses				
T&D Supervision - Operation	\$ 392,148	\$ 182,079	\$ -	\$ -
Miscellaneous Meter Expense	475,494	-	-	-
Services on Customer Premises	-	220,869	-	-
T&D Supervision - Maintenance	304	73,657	-	-
Services Maintenance	-	1,271,018	-	-
Meter Maintenance	5,395	-	-	-
Customer Accounting Expenses	2,296,960	-	11,351,478	4,101,978
Management Fees - Customer	-	-	15,703,705	-
Employee Pension and Benefits	817,745	1,145,742	615,556	1,022,182
Transportation Expense	104,258	177,816	325,930	117,813
Worker's Compensation	108,071	151,418	81,350	135,089
Advertising Expense	-	-	-	-
Office Rents	(72,995)	(124,497)	(228,198)	(82,486)
Other Rev. Billing and Collecting	-	-	(643,840)	-
Other Rev. Customer Related	-	-	(4,624,656)	-
Subtotal	4,127,380	3,098,102	22,581,325	5,294,576
Depreciation Expense				
Meters	11,331,009	-	-	-
Services	-	11,672,208	-	-
Office Buildings	59,989	102,313	187,536	67,788
Office Furniture & Equipment	25,890	44,157	80,938	29,257
Computer Software BT CIS			1,480,265	
Transportation Equipment	409,888	699,082	1,281,388	463,181
Subtotal	11,826,776	12,517,760	3,030,127	560,226
Taxes Other Than Income				
Payroll Taxes	325,641	456,255	245,125	407,051
Assessments	187,892	398,347	301,119	81,638
Subtotal	513,533	854,602	546,244	488,689
Rate Base				
Meters	117,447,894	-	-	-
Services	-	484,771,789	-	-
Office Land/Buildings	2,082,188	3,551,265	6,509,325	2,352,912
Office Furniture and Equipment	2,929,097	4,995,709	9,156,932	3,309,937
Computer Software BT CIS			1,557,607	
Transportation Equipment	1,475,816	2,517,070	4,613,689	1,667,700
Subtotal	123,934,995	495,835,833	21,837,553	7,330,549
Return and Income Taxes	12,033,302	48,142,516	2,120,288	711,750
Total Direct Customer Costs	\$ 28,500,991	\$ 64,612,980	\$ 28,277,984	\$ 7,055,241

PENNSYLVANIA-AMERICAN WATER COMPANY
RESPONSES TO RATE STRUCTURE
AND COST OF SERVICE FILING REQUIREMENTS

RS2. Provide a listing of negotiated special rate contracts which includes a comparison of revenues under special rate contracts and under tariff rates. Provide the cost of service treatment of any deficiency in revenues resulting from the negotiated special rate contracts.

RESPONSE

Please refer to Confidential Attachment RS-2 provided in Volume 6d for the comparison of the present and proposed tariff revenues with contract revenues for the following customers:

Industrial

Demand Base Industrial Service 1
Demand Base Industrial Service 2
Demand Base Industrial Service 3

Other Water Utilities

Demand Base Resale Service 1
Demand Base Resale Service 2
Demand Base Resale Service 3
Demand Base Resale Service 4

EXHIBIT NO. 12-B - WATER OPERATIONS

STEELTON WATER OPERATIONS

COST OF SERVICE AS OF DECEMBER 31, 2021

AND DECEMBER 31, 2022

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

STEELTON WATER OPERATIONS

WATER COST OF SERVICE

ALLOCATION STUDY

AS OF DECEMBER 31, 2021 (RATE YEAR 1) AND
DECEMBER 31, 2022 (RATE YEAR 2)

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania

WATER COST OF SERVICE
ALLOCATION STUDY
AS OF DECEMBER 31, 2021

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

COMPARISON OF PRO FORMA COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Customer Classification (1)	Pro Forma Cost of Service, as of December 31, 2021		Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Proposed Increase	
	Cost of Service (2)	Percent of Total (3)	Amount (4)	Percent of Total (5)	Amount (6)	Percent of Total (7)	Amount (8)	Percent Increase (9)
Residential	\$ 1,469,619	44.2%	\$ 883,173	32.2%	\$ 1,059,899	31.9%	\$ 176,725	20.0%
Commercial	165,426	5.0%	127,721	4.7%	153,268	4.6%	25,547	20.0%
Industrial	1,629,139	48.9%	1,703,892	62.2%	2,044,671	61.4%	340,779	20.0%
Public (Municipal)	24,421	0.7%	25,642	0.9%	30,770	0.9%	5,128	20.0%
Public Fire Protection	41,500	1.2%	-	0.0%	41,500	1.2%	41,500	
Total Sales of Water	3,330,105	100.0%	2,740,428	100.0%	3,330,107	100.0%	589,679	21.5%
Other Water Revenues	33,809		19,035		33,809		14,774	77.6%
Water Revenues from Water Oper Excl Steelton	1,776,829						-	
Contract Sales - Resale	49,106		49,106		49,786		680	1.4%
Total	\$ 5,189,849		\$ 2,808,569		\$ 3,413,702		\$ 605,133	21.5%

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PRESENT RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	PUBLIC FIRE (7)
1. REVENUES FROM SALES	\$ 2,740,428	\$ 883,173	\$ 127,721	\$ 1,703,892	\$ 25,642	\$ -
2. OTHER REVENUES	68,141	26,554	2,913	33,868	482	4,325
3. TOTAL OPERATING REVENUES	2,808,569	909,727	130,634	1,737,760	26,124	4,325
4. LESS: OPERATING EXPENSES	2,716,387	1,137,809	127,283	1,400,040	20,135	31,121
5. RETURN AND INCOME TAXES	92,182	(228,082)	3,351	337,720	5,989	(26,796)
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	464,632	156,953	17,935	212,569	3,067	74,109
7. TAXABLE INCOME	(372,450)	(385,034)	(14,584)	125,151	2,922	(100,905)
8. LESS: INCOME TAXES (TAX. INC.)	(150,039)	(155,109)	(5,875)	50,416	1,177	(40,649)
9. NET RETURN (Line 5 - Line 8)	242,221	(72,973)	9,226	287,304	4,812	13,853
10. ORIGINAL COSTS MEASURE OF VALUE						
11. RATE OF RETURN, PERCENT	23,759,790	8,023,608	920,496	10,870,328	155,973	3,789,373
12. RELATIVE RATE OF RETURN	1.02	(0.91)	1.00	2.64	3.08	0.37
	1.00	(0.89)	0.98	2.59	3.03	0.36

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PROPOSED RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	PUBLIC FIRE (7)
1. REVENUES FROM SALES	\$ 3,330,107	\$ 1,059,899	\$ 153,268	\$ 2,044,671	\$ 30,770	\$ 41,500
2. OTHER REVENUES	82,915	31,127	3,456	39,055	562	8,716
3. TOTAL OPERATING REVENUES	3,413,022	1,091,026	156,724	2,083,726	31,332	50,216
4. LESS: OPERATING EXPENSES	981,967	832,903	91,262	575,680	9,890	(527,770)
5. RETURN AND INCOME TAXES	2,431,055	258,123	65,462	1,508,046	21,442	577,986
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	466,033	157,799	18,082	212,791	3,076	74,286
7. TAXABLE INCOME	1,965,022	100,324	47,380	1,295,255	18,366	503,701
8. LESS: INCOME TAXES (TAX. INC.)	525,520	26,830	12,671	346,400	4,912	134,708
9. NET RETURN (Line 5 - Line 8)	1,905,535	231,292	52,791	1,161,647	16,530	443,278
10. ORIGINAL COSTS MEASURE OF VALUE	23,759,790	8,045,827	923,196	10,847,874	155,694	3,787,184
11. RATE OF RETURN, PERCENT	8.02	2.87	5.72	10.71	10.62	11.70
12. RELATIVE RATE OF RETURN	1.00	0.36	0.71	1.34	1.32	1.46

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)
OPERATION AND MAINTENANCE EXPENSES								
Source of Supply Expenses								
----Operation----								
601.1	Salaries and Wages	2	\$ 962	\$ 316	\$ 38	\$ 595	\$ 8	\$ 5
610.1	Purchased Water	1	-	-	-	-	-	-
615.1	Purchased Power	1	16,805	4,805	563	11,164	151	123
616.1	Purchased Fuel	1	-	-	-	-	-	-
618.1	Chemicals	1	-	-	-	-	-	-
620.1	Materials and Supplies	2	3,838	1,260	153	2,374	30	20
631.1	Contract Services -Engineering	2	-	-	-	-	-	-
633.1	Contract Services -Legal	2	-	-	-	-	-	-
636.1	Contract Services -Other	2	159	52	6	98	1	1
641.1	Rental of Building	2	-	-	-	-	-	-
642.1	Rental of Equipment	2	-	-	-	-	-	-
650.1	Transportation	2	-	-	-	-	-	-
675.1	Miscellaneous Expenses	2	15,715	5,161	627	9,721	124	82
Total Operation			37,479	11,594	1,387	23,952	314	231
----Maintenance----								
601.2	Salaries and Wages	2	-	-	-	-	-	-
620.2	Materials and Supplies	2	-	-	-	-	-	-
636.2	Contract Services	2	-	-	-	-	-	-
631.2	Contract Services - Engineering	2	-	-	-	-	-	-
636.2	Contract Services - Other	2	-	-	-	-	-	-
650.1	Transportation	2	125	41	5	77	1	1
675.2	Misc. Maintenance Expense	2	-	-	-	-	-	-
Total Maintenance			125	41	5	77	1	1
Total Source of Supply Expenses			37,604	11,635	1,392	24,029	315	232
Water Treatment Expenses								
----Operation----								
601.3	Salaries and Wages	2	\$ 18,528	6,084	739	11,461	146	96
	Power and Pumping and Other Dept Exp	2	-	-	-	-	-	-
	Purification and Laboratory	1	178,021	58,462	7,103	110,124	1,406	926
615.3	Purchased Power	2	88,159	25,205	2,953	58,564	793	644
618.3	Chemicals	1	90,991	26,014	3,048	60,445	819	664
620.3	Materials and Supplies	2	11,493	3,774	459	7,110	91	60
631.3	Contract Services -Engineering	2	-	-	-	-	-	-

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
635.3	Contract Services - Testing	2	9,000	2,956	359	5,567	71	47
636.3	Contract Services - Other	2	7,130	2,341	284	4,411	56	37
641.3	Rental of Building	2	-	-	-	-	-	-
642.3	Rental of Equipment	2	-	-	-	-	-	-
650.3	Transportation	2	-	-	-	-	-	-
675.3	Miscellaneous Expenses							
	Waste Disposal	1	-	-	-	-	-	-
	Other	2	364,287	119,632	14,535	225,348	2,878	1,894
	Total Operation		767,609	244,468	29,480	483,030	6,260	4,368
601.4	----Maintenance----							
	Salaries and Wages	2	-	-	-	-	-	-
	Power and Pumping	2	-	-	-	-	-	-
	Purification and Laboratory	2	-	-	-	-	-	-
620.4	Materials and Supplies	2	18,000	5,911	718	11,135	142	94
636.4	Contract Services	2	-	-	-	-	-	-
636.4	Contract Services - Other	2	-	-	-	-	-	-
650.4	Transportation	2	-	-	-	-	-	-
675.4	Miscellaneous Expenses - Waste Disposal	1	-	-	-	-	-	-
	Total Maintenance		18,000	5,911	718	11,135	142	94
	Total Water Treatment Expenses		785,609	250,379	30,198	494,165	6,402	4,462
	Transmission & Distribution Expenses							
	----Operation----							
601.5	Salaries and Wages	8	\$	\$	\$	\$	\$	\$
	Supervision & Other Dept. Exps.	8	-	-	-	-	-	-
	Mains	8	-	-	-	-	-	-
	Storage Facilities	8	-	-	-	-	-	-
	Miscellaneous Meter Expense	8	-	-	-	-	-	-
	Services on Customer Premises	8	-	-	-	-	-	-
615.5	Purchased Power	1	3,642	1,041	122	2,419	33	27
620.5	Materials and Supplies	8	59,669	18,539	2,088	22,364	346	16,331
631.5	Contract Services - Engineering	8	-	-	-	-	-	-
636.5	Contract Services - Other	8	-	-	-	-	-	-
641.5	Rental of Building	8	-	-	-	-	-	-
642.5	Rental of Equipment	8	-	-	-	-	-	-
650.5	Transportation	8	-	-	-	-	-	-
675.5	Miscellaneous Expenses	8	3,023	939	106	1,133	18	827
	Total Operation		66,334	20,519	2,316	25,916	397	17,185

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
----Maintenance----								
601.6	Salaries and Wages							
	Supervision and Engineering	13	1,590	841	75	302	8	365
	Structures and Improvements	4	335	104	11	99	2	118
	Mains	8	12,801	3,977	448	4,798	74	3,503
	Services	11	11,560	10,373	828	300	58	-
	Meters	10	48	39	4	4	-	-
	Storage Facilities	4	44	14	1	13	-	15
	Fire Hydrants	9	2,656	-	-	-	-	2,656
	Other	13	51,942	27,462	2,446	9,869	255	11,910
620.6	Materials and Supplies	13	18,822	9,951	887	3,576	92	4,316
636.6	Contract Services	13	-	-	-	-	-	-
637.6	Contract Services - Engineering	13	-	-	-	-	-	-
650.6	Transportation	13	-	-	-	-	-	-
675.6	Miscellaneous Expenses	13	-	-	-	-	-	-
	Total Maintenance		99,797	52,761	4,700	18,961	489	22,883
	Total Transmission and Distribution Expenses		166,131	73,280	7,016	44,877	886	40,068
Customer Accounting Expenses								
601.7	Salaries and Wages	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Meter Reading and Other Expense	10	-	-	-	-	-	-
	Meter Services	14	-	-	-	-	-	-
620.7	Materials and Supplies	14	-	-	-	-	-	-
636.7	Contract Services -Other	14	-	-	-	-	-	-
642.7	Rental of Equipment	14	-	-	-	-	-	-
650.7	Transportation	14	-	-	-	-	-	-
670.7	Bad Debt	22	62,538	55,765	6,654	38	81	-
675.7	Miscellaneous Expenses	14	10,180	9,443	625	54	54	4
	Total Customer Accounting Expenses		72,718	65,208	7,279	92	135	4

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
Administrative and General Expenses								
601.8	Salaries and Wages	16	\$ 37,989	\$ 15,127	\$ 1,728	\$ 18,964	\$ 262	\$ 1,907
603.8	Salaries of Officers	16	-	-	-	-	-	-
604.8	Employees Pension and Benefits	17	84,906	30,600	3,524	47,072	628	3,082
615.8	Purchased Power	16	-	-	-	-	-	-
621	Materials and Supplies	16	-	-	-	-	-	-
631.8	Contract Services -Engineering	16	-	-	-	-	-	-
632.8	Contract Services -Accounting	16	-	-	-	-	-	-
633.8	Contract Services -Legal	16	-	-	-	-	-	-
634.8	Contract Services -Management	16	-	-	-	-	-	-
	Customer Related	14	54,241	50,319	3,328	285	285	24
	Employee Related	17	15,382	5,544	638	8,528	114	558
	Water Quality Related	1	1,572	450	53	1,045	14	11
	Other	16	129,892	51,723	5,910	64,842	896	6,521
636.8	Contract Services -Other	16	99,212	39,506	4,514	49,527	685	4,980
641.8	Rental of Buildings	16	-	-	-	-	-	-
642.8	Rental of Equipment	16	-	-	-	-	-	-
650.8	Transportation	16	16,024	6,381	729	7,999	111	804
656.8	Insurance -Vehicles	16	1,102	439	50	550	8	55
657.8	Insurance -General Liability	16	46,901	18,676	2,134	23,413	324	2,354
658.8	Insurance -Workers Comp	17	7,504	2,704	311	4,160	56	272
659.8	Insurance -Other	16	12,387	4,933	564	6,184	85	622
660.8	Advertising	14	-	-	-	-	-	-
666.8	Amortization of Rate Case Exp.	20	2,347	855	97	1,127	16	252
667.8	Regulatory Commission	20	-	-	-	-	-	-
675.8	Miscellaneous Expenses	16	189,413	75,424	8,618	94,555	1,307	9,509
	Total Administrative and General Expenses		698,872	302,681	32,198	328,251	4,791	30,951
Total Operation & Maintenance Expenses								
			\$ 1,760,933	\$ 703,183	\$ 78,083	\$ 891,414	\$ 12,529	\$ 75,717

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
DEPRECIATION EXPENSE								
303.14	Water Rights - Hybemia Dam	1	\$	-	\$	-	\$	-
303.35	Waste Handling & Treatment Land	1	-	-	-	-	-	-
303.99	Comprehensive Planning Studies	18	-	-	-	-	-	-
304.15	Other Water Source Structures	2	176	58	7	109	1	1
304.20	Power and Pumping Structures	2	-	-	-	-	-	-
304.30	Purification Buildings	2	293,914	96,521	11,727	181,815	2,322	1,528
304.36	Waste Handling & Treatment Structures	1	-	-	-	-	-	-
304.39	Purification Buildings - Tank Painting	2	-	-	-	-	-	-
304.61	Office Buildings	16	-	-	-	-	-	-
304.62	Stores, Shop and Garage Bldgs.	16	-	-	-	-	-	-
304.63	Misc. Structures and Improvements	16	-	-	-	-	-	-
305.00	Collecting & Impounding Reservoirs	1	-	-	-	-	-	-
306.00	Lake, River and Other Intakes	2	517	170	21	320	4	3
307.00	Wells and Springs	2	-	-	-	-	-	-
310.00	Power Generation Equipment	2	12,308	4,042	491	7,613	97	64
311.00	Pumping Equipment Other	5	-	-	-	-	-	-
311.52	Pumping Equipment Source of Supply	2	-	-	-	-	-	-
311.53	Pumping Equipment Water Treatment	2	76,486	25,118	3,052	47,314	604	398
311.54	Pumping Equipment Transmission and Distribution	8	-	-	-	-	-	-
320.00	Purification System	2	83,618	27,460	3,336	51,726	661	435
330.00	Distr. Reservoirs and Standpipes	4	25,254	7,874	859	7,485	134	8,902
331.00	Mains and Accessories							
	10-inch and Over	3	70,792	21,776	2,648	41,031	524	4,814
	Under 10-inch	4	113,299	35,327	3,852	33,582	600	39,938
333.00	Services	11	4,883	4,382	350	127	25	-
334.00	Meters	10	69,015	56,276	6,051	6,345	343	-
335.00	Fire Hydrants	9	13,790	-	-	-	-	13,790
340.00	Office Furniture	16	-	-	-	-	-	-
340.00	Computers and Peripheral Equipment	16	-	-	-	-	-	-
340.00	Other Office Equipment	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
340.00	Computer Software - CIS	14	-	-	-	-	-	-
341.00	Transportation Equipment	16	49,512	19,716	2,253	24,716	342	2,486
342.00	Stores Equipment	16	-	-	-	-	-	-
343.00	Tools and work Equipment	16	10,748	4,280	489	5,365	74	540
344.00	Laboratory Equipment	2	1,640	538	65	1,014	13	9
345.00	Power Operated Equipment	16	-	-	-	-	-	-
346.00	Communication Equipment	16	5,011	1,995	228	2,501	35	252
347.00	Miscellaneous Equipment	16	16,179	6,442	736	8,076	112	812
348.00	Other Tangible Equipment	16	-	-	-	-	-	-
Total Depreciation Expense			\$ 847,137	\$ 311,975	\$ 36,165	\$ 419,139	\$ 5,891	\$ 73,972

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
	<u>Amortizations</u>							
		19	\$ 18,393	\$ 6,228	\$ 714	\$ 8,398	\$ 121	\$ 2,932
	<u>Taxes, Other Than Income</u>							
	Local Property and Miscellaneous	19	\$ 26,225	\$ 8,880	\$ 1,018	\$ 11,975	\$ 173	\$ 4,180
	Federal and State Payroll Taxes	17	25,319	9,125	1,051	14,037	187	919
	State Capital Stock Tax	19	-	-	-	-	-	-
	PUC and OCA Assessments	20	29,880	10,888	1,234	14,351	203	3,203
	Public Utility Realty Taxes	19	50,909	17,238	1,975	23,245	336	8,115
	Total Taxes Other Than Income Taxes		\$ 132,333	\$ 46,131	\$ 5,278	\$ 63,608	\$ 899	\$ 16,417
	Total O&M, Depreciation, Amort, and Taxes Other than Inc.		2,758,797	1,067,517	120,240	1,382,559	19,440	169,038
	Federal and State Income Taxes	19	525,520	\$ 177,942	\$ 20,390	\$ 239,952	\$ 3,468	\$ 83,768
	Utility Operating Income Available for Return	19	1,905,535	645,215	73,935	870,067	12,577	303,742
	Total Cost of Service - Water		\$ 5,189,852	\$ 1,890,674	\$ 214,565	\$ 2,492,578	\$ 35,485	\$ 556,548
469	Water Revenues from Water Oper Excl Steelton	20	(1,776,829)	(647,477)	(73,383)	(853,411)	(12,082)	(190,476)
	Unrecovered Public Fire - Water Rev	9	190,476	-	-	-	-	190,476
	Reallocate Unrecovered Public Fire - Water Rev	21	(190,476)	(155,314)	(16,705)	(17,505)	(952)	-
470	Other Water Revenues - Late Payment Fees	20	(32,189)	(11,730)	(1,329)	(15,460)	(219)	(3,451)
471	Other Water Revenues - Misc. Service Revenues	14	(1,620)	(1,503)	(99)	(9)	(9)	(1)
472	Other Water Revenues - Rents from Other Property	16	-	-	-	-	-	-
	Revenue from Contract Sales	20	(49,106)	(17,894)	(2,028)	(23,586)	(334)	(5,264)
	Unrecovered Public Fire	9	(506,332)	-	-	-	-	(506,332)
	Reallocate Unrecovered Public Fire	21	506,332	412,863	44,405	46,532	2,532	-
	Total Cost of Service Related to Sales of Water		\$ 3,330,107	\$ 1,469,619	\$ 165,426	\$ 1,629,139	\$ 24,421	\$ 41,500

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED.

Factors are based on the pro forma future test year average daily consumption for each customer classification.

Customer Classification (1)	Average Daily Consumption, 100 Gallons (2)	Allocation Factor (3)
Residential	2,480	0.2859
Commercial	291	0.0335
Industrial	5,763	0.6643
Public	78	0.0090
Public Fire Protection	64	0.0073
Total	8,676	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM DAY EXTRA CAPACITY FUNCTIONS.

(Factor 1) and the factors derived from maximum day extra capacity demand for each customer classification, as follows:

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2)x 0.7143	(4)	(5)=(4)x 0.2857	(6)=(3)+(5)
Residential	0.2859	0.2043	0.4341	0.1241	0.3284
Commercial	0.0335	0.0239	0.0560	0.0160	0.0399
Industrial	0.6643	0.4745	0.5045	0.1441	0.6186
Public	0.0090	0.0064	0.0054	0.0015	0.0079
Public Fire Protection	0.0073	0.0052			0.0052
Total	1.0000	0.7143	1.0000	0.2857	1.0000

The derivation of the maximum day extra capacity factors in column 4 and the basis for the column 3 and column 5 weightings are presented on the following page.

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PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM DAY EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Daily Consumption, 100 Gallons	Maximum Day Extra Capacity		
		Factor*	Rate of Flow, 100 Gallons Per Day	Allocation Factor
(1)	(2)	(3)	(4)	(5)
Residential	2,480	1.0	2,480	0.4341
Commercial	291	1.1	320	0.0560
Industrial	5,763	0.5	2,882	0.5045
Public	78	0.4	31	0.0054
Total	<u>8,612</u>		<u>5,713</u>	<u>1.0000</u>

The weighting of the factors is based on the maximum day ratio of 1.4,
based on a review of maximum day ratios experienced by the company. (See Schedule G)

	Maximum Day Ratio	Weight
Average Day	1.0	0.7143
Maximum Day Extra Capacity	<u>0.4</u>	<u>0.2857</u>
Total	<u>1.4</u>	<u>1.0000</u>

* Ratio of maximum day to average day minus 1.0.

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS.

Factors are based on the weighting of the average daily consumption, the maximum day extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Fire Protection		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2) X 0.6692	(4)	(5)=(4) X 0.2677	(6)	(7)=(6) X 0.0631	(8)=(3)+ (5)+(7)
Residential	0.2859	0.1914	0.4341	0.1162			0.3076
Commercial	0.0335	0.0224	0.0560	0.0150			0.0374
Industrial	0.6643	0.4445	0.5045	0.1351			0.5796
Public	0.0090	0.0060	0.0054	0.0014			0.0074
Public Fire Protection	0.0073	0.0049			1.0000	0.0631	0.0680
Total	1.0000	0.6692	1.0000	0.2677	1.0000	0.0631	1.0000

The basis for the column 3, column 5 and column 7 weightings are presented on the following page.

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum day ratio of 1.4 and the average pumpage for the test year ended 12/31/19. The system demand for fire protection is 1,000 gpm, for 2 hours.

	<u>Ratio</u>	<u>Rate of Flow, (GPD)</u>	<u>Weight</u>
Average Day	1.0	1,272,496	0.6692
Maximum Day			
Extra Capacity	<u>0.4</u>	<u>508,998</u>	<u>0.2677</u>
Subtotal	1.4	1,781,494	0.9369
Fire Protection		<u>120,000</u>	<u>0.0631</u>
Total		<u><u>1,901,494</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 6 on the preceding page are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS.

fire protection demand for each customer classification.

Customer Classification	Average Hourly Consumption			Maximum Hour Extra Capacity		Fire Protection		Allocation Factor
	100 Gals.	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)	(4)=(3) X 0.3095	(5)	(6)=(5) X 0.3403	(7)	(8)=(7) X 0.3502	(9)=(4)+(6)+(8)
Residential	103.3	0.2859	0.0884	0.6565	0.2234			0.3118
Commercial	12.1	0.0335	0.0104	0.0694	0.0236			0.0340
Industrial	240.1	0.6643	0.2056	0.2669	0.0908			0.2964
Public	3.3	0.0090	0.0028	0.0072	0.0025			0.0053
Public Fire Protection	2.7	0.0073	0.0023			1.0000	0.3502	0.3525
Total	361.5	1.0000	0.3095	1.0000	0.3403	1.0000	0.3502	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum hour ratio of 2.1, and the average pumpage for the test year ended 12/31/2019. The system demand for fire protection is 1,000 gpm.

	<u>Ratio</u>	<u>Rate of Flow, (GPM)</u>	<u>Weight</u>
Average Hour	1.0	884	0.3095
Maximum Hour Extra Capacity	<u>1.1</u>	<u>972</u>	<u>0.3403</u>
Subtotal	2.1	1,856	0.6498
Fire Protection		<u>1,000</u>	<u>0.3502</u>
Total		<u><u>2,856</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 7 of Factor 4 are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service..

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Hourly Consumption 100 Gals.	Maximum Hour Extra Capacity		
		Factor*	Rate, 100 Gals. Per Hour	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
Residential	103.3	4.0	413.3	0.6565
Commercial	12.1	3.6	43.7	0.0694
Industrial	240.1	0.7	168.1	0.2669
Public	3.3	1.4	4.6	0.0072
Total	358.8		629.6	1.0000

* Ratio Of Maximum Hour To Average Hour Minus 1.0.

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PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING EQUIPMENT OTHER

Factors are based on the weighting of the maximum daily consumption with fire, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows.

Customer Classification	Maximum Daily Consumption		Maximum Hourly Consumption		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.6667	(4)	(5)=(4)x 0.3333	(6)=(3)+5
Residential	0.3076	0.2052	0.3118	0.1039	0.3091
Commercial	0.0374	0.0249	0.0340	0.0113	0.0362
Industrial	0.5796	0.3864	0.2964	0.0988	0.4852
Public	0.0074	0.0049	0.0053	0.0018	0.0067
Public Fire Protection	0.0680	0.0453	0.3525	0.1175	0.1628
Total	1.0000	0.6667	1.0000	0.3333	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5A. THIS FACTOR NOT USED IN THE ALLOCATION

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 6. THIS FACTOR IS NOT USED IN THIS ALLOCATION

FACTOR 7. FACTOR NOT USED IN THIS ALLOCATION

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 8. ALLOCATION OF COSTS ASSOCIATED WITH MAINS.

Factors are based on the weighting of the maximum daily consumption, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows:

Customer Classification	10-inch and Larger		Under 10-inch		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.2770	(4)	(5)=(4)x 0.7230	(6)=(3)+(5)
Residential	0.3076	0.0853	0.3118	0.2254	0.3107
Commercial	0.0374	0.0104	0.0340	0.0246	0.0350
Industrial	0.5796	0.1605	0.2964	0.2143	0.3748
Public	0.0074	0.0020	0.0053	0.0038	0.0058
Public Fire Protection	0.0680	0.0188	0.3525	0.2549	0.2737
Total	1.0000	0.2770	1.0000	0.7230	1.0000

The weighting of the factors is based on the length of transmission mains and distribution mains, as follows:

	Length of Mains (Feet)	Weight
10-inch and Larger	14,824,111	0.2770
Under 10-inch	38,694,833	0.7230
Total	53,518,944	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 9. ALLOCATION OF COSTS ASSOCIATED WITH FIRE HYDRANTS.

These costs are assigned directly to Public Fire Protection.

Customer Classification	Allocation Factor
(1)	(2)
Public Fire Protection	1.0000

FACTOR 10. ALLOCATION OF COSTS ASSOCIATED WITH METERS.

Factors are based on the relative cost of meters by size and customer classification, as developed on the following page and summarized below.

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	2,297	0.81541
Commercial	247	0.08768
Industrial	259	0.09194
Public	14	0.00497
Total	2,817	1.00000

FACTOR 11. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES.

Factors are based on the relative cost of services by size and customer classification, as developed on the second of the following pages, and summarized below.

Customer Classification	3/4" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	2,141	0.89732
Commercial	171	0.07167
Industrial	62	0.02598
Public	12	0.00503
Private Fire Protection	0	0.00000
Total	2,386	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size (1)	5/8" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Private Fire Protection		Total	
		Number of Meters (3)	Weighting (4)=(2)X(3)	Number of Meters (5)	Weighting (6)=(2)X(5)	Number of Meters (7)	Weighting (8)=(2)X(7)	Number of Meters (9)	Weighting (10)=(2)X(9)	Number of Meters (15)	Weighting (16)=(2)X(15)	Number of Meters (17)	Weighting (18)
5/8	1.0	2,014	2,014	100	100	1	1	10	10	0	0	2,125	2,125
3/4	1.5	0	0	0	0	0	0	0	0	0	0	0	0
1	2.0	97	194	25	50	0	0	1	2	0	0	123	246
1-1/2	2.2	1	2	7	15	0	0	1	2	0	0	0	0
2	3.5	1	4	4	14	2	7	0	0	0	0	7	25
3	7.0	0	0	2	14	0	0	0	0	0	0	0	0
4	20.8	4	83	1	21	3	62	0	0	0	0	8	166
6	30.8	0	0	0	0	4	123	0	0	0	0	0	0
8	33.1	0	0	1	33	2	66	0	0	0	0	3	99
10	47.6	0	0	0	0	0	0	0	0	0	0	0	0
Total		2,117	2,297	140	247	12	259	12	14	0	0	2,266	2,661

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

BASIS FOR ALLOCATING SERVICE COSTS TO CUSTOMER CLASSIFICATIONS

Service Size (1)	3/4" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Private Fire Protection		Total	
		Number of Services (3)	Weighting (4)=(2)X(3)	Number of Services (5)	Weighting (6)=(2)X(5)	Number of Services (7)	Weighting (8)=(2)X(7)	Number of Services (9)	Weighting (10)=(2)X(9)	Number of Services (15)	Weighting (16)=(2)X(15)	Number of Services (17)	Weighting (18)
3/4 & 1"	1.00	2,111	2,111	125	125	1	1	11	11	0	0	2,248	2,248
1-1/2	1.10	1	1	7	8	0	0	1	1	0	0	0	0
2	3.30	1	3	4	13	2	7	0	0	0	0	7	23
3	3.10	0	0	2	6	0	0	0	0	0	0	0	0
4	2.80	4	11	1	3	3	8	0	0	0	0	8	22
6	3.70	4	15	0	0	4	15	0	0	0	0	0	0
8	15.50	0	0	1	16	2	31	0	0	0	0	3	47
10	8.30	0	0	0	0	0	0	0	0	0	0	0	0
12	20.10	0	0	0	0	0	0	0	0	0	0	0	0
Total		2,121	2,141	140	171	12	62	12	12	0	0	2,266	2,340

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 12. FACTOR NOT USED IN THIS ALLOCATION

FACTOR 13. ALLOCATION OF TRANSMISSION AND DISTRIBUTION MAINTENANCE SUPERVISION
AND ENGINEERING AND OTHER MAINTENANCE DEPARTMENT EXPENSES.

The factors are based on the allocation of Transmission and Distribution Maintenance Salaries
and Wages, as follows:

Customer Classification	Transmission & Distribution Maintenance Salaries & Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 14,507	0.5287
Commercial	1,292	0.0471
Industrial	5,214	0.1900
Public	134	0.0049
Public Fire Protection	6,292	0.2293
Total	<u>\$ 27,439</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 14. ALLOCATION OF CUSTOMER ACCOUNTING, BILLING AND COLLECTING COSTS.

Factors are based on the pro forma number of customers, as follows:

Customer Classification	Proforma Number of Customers	Allocation Factor
(1)	(2)	(3)
Residential	2,117	0.92769
Commercial	140	0.06135
Industrial	12	0.00526
Public	12	0.00526
Public Fire Protection	1	0.00044
Total	2,282	1.00000

FACTOR 15. ALLOCATION OF METER READING COSTS.

Factors are based on the number of meters by class.

Customer Classification	Pro Forma Number of Meters	Allocation Factor
(1)	(2)	(3)
Residential	2,117.0	0.92810
Commercial	140.0	0.06138
Industrial	12.0	0.00526
Public	12.0	0.00526
Total	2,281.0	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 16. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSES.

The factors are based on the allocation of all other operation and maintenance expenses excluding purchased water, power, fuel, chemicals and waste disposal expenses.

Customer Classification	Operation & Maintenance Expenses	Allocation Factor
(1)	(2)	(3)
Residential	\$ 343,437	0.3982
Commercial	39,199	0.0455
Industrial	430,571	0.4992
Public	5,942	0.0069
Public Fire Protection	43,308	0.0502
Total	<u>\$ 862,457</u>	<u>1.0000</u>

FACTOR 16A. ALLOCATION OF CASH WORKING CAPITAL - EXPENSES

The functions are based on the allocation of all other operation and maintenance expenses excluding regulatory commission expense.

Customer Classification	Operation & Maintenance Expenses	Allocation Factor
(1)	(2)	(3)
Residential	\$ 702,328	0.3994
Commercial	77,986	0.0443
Industrial	890,287	0.5063
Public	12,513	0.0071
Public Fire Protection	75,465	0.0429
Total	<u>\$ 1,758,579</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 17. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

The factors are based on the allocation of direct salaries and wages as follows:

Customer Classification	Salaries and Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 95,337	0.3604
Commercial	10,975	0.0415
Industrial	146,660	0.5544
Public	1,964	0.0074
Public Fire Protection	9,591	0.0363
Total	<u>\$264,527</u>	<u>1.0000</u>

FACTOR 18. ALLOCATION OF ORGANIZATION, FRANCHISES AND CONSENTS, OTHER INTANGIBLE PLANT AND OTHER RATE BASE ELEMENTS.

The factors are based on the allocation of the original cost less depreciation other than those items being allocated, as follows:

Customer Classification	Original Cost Less Depreciation	Allocation Factor
(1)	(2)	(3)
Residential	\$ 7,997,694	0.3383
Commercial	917,884	0.0388
Industrial	10,787,413	0.4563
Public	154,848	0.0065
Public Fire Protection	3,784,525	0.1601
Total	<u>\$ 23,642,364</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 19. ALLOCATION OF INCOME TAXES AND INCOME AVAILABLE FOR RETURN.

The factors are based on the allocation of the original cost measure of value rate base as shown on the following pages and summarized below:

Customer Classification (1)	Original Cost Measure of Value (2)	Allocation Factor (3)
Residential	\$ 8,045,827	0.3386
Commercial	923,196	0.0388
Industrial	10,847,874	0.4566
Public	155,694	0.0066
Public Fire Protection	3,787,184	0.1594
Total	<u>\$ 23,759,775</u>	<u>1.0000</u>

FACTOR 20. ALLOCATION OF REGULATORY COMMISSION EXPENSES, ASSESSMENTS AND OTHER WATER REVENUES.

The factors are based on the allocation of the total cost of service, excluding those items being allocated.

Customer Classification (1)	Total Cost of Service (2)	Allocation Factor (3)
Residential	\$ 1,878,931	0.3644
Commercial	213,234	0.0413
Industrial	2,477,100	0.4803
Public	35,266	0.0068
Public Fire Protection	553,093	0.1072
Total	<u>\$ 5,157,624</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (9)
Nondepreciable Plant								
301.00	Organization	18	\$ -	-	\$ -	-	\$ -	-
302.00	Franchises and Consents	18	-	-	-	-	-	-
303.00	Other Intangible Plant	18	3	1	-	1	-	-
303.11	Water Rights	1	-	-	-	-	-	-
303.12	Reservoir Land	1	-	-	-	-	-	-
303.13	Other Sources of Supply Land	2	-	-	-	-	-	-
303.20	Power and Pumping Land	5	-	-	-	-	-	-
303.30	Purification Land	2	26,988	8,862	1,077	16,695	213	140
303.40	Transmission and Distribution Land	8	-	(1)	-	-	-	-
303.50	Distr. Reservoir & Standpipe Land	4	-	(2)	-	-	-	-
303.61	Office Land	16	-	-	-	-	-	-
303.62	Stores, Shop and Garage Land	16	-	-	-	-	-	-
Total Nondepreciable Plant			26,991	8,860	1,077	16,696	213	140
Depreciable Plant								
303.14	Water Rights - Hibernia Dam	1	-	-	-	-	-	-
303.35	Waste Handling & Treatment Land	1	-	(1)	-	-	-	-
304	Comprehensive Planning Studies	18	-	-	-	-	-	-
304.15	Other Water Source Structures	2	6,542	2,147	261	4,047	52	34
304.20	Power and Pumping Structures	5A	-	(1)	-	-	-	-
304.30	Purification Buildings	2	5,803,927	1,906,010	231,577	3,590,309	45,851	30,180
304.36	Waste Handling & Treatment Structures	1	-	-	-	-	-	-
304.38	Waste Handling & Treatment Structure F	1	-	-	-	-	-	-
304.39	Purification Buildings - Tank Painting	2	-	-	-	-	-	-
304.61	Office Buildings	16	-	-	-	-	-	-
304.62	Stores, Shop and Garage Bldgs.	16	-	(1)	-	-	-	-
304.63	Misc. Structures and Improvements	16	-	-	-	-	-	-
305.00	Collecting & Impounding Reservoirs	1	-	-	-	-	-	-
306.00	Lake, River and Other Intakes	2	9,418	3,093	376	5,826	74	49
307.00	Wells and Springs	2	-	(1)	-	-	-	-
310.00	Power Generation Equipment	5A	355,041	141,802	15,728	179,757	2,521	15,231
311.20	Pumping Equipment Other	5	-	-	-	-	-	-
311.52	Pumping Equipment Source of Supply	2	985,228	323,549	39,311	609,462	7,783	5,123
311.53	Pumping Equipment Water Treatment	2	1,380,703	453,423	55,090	854,103	10,908	7,180
320.00	Purification System	4	552,156	172,162	18,773	163,659	2,926	194,635
330.00	Distr. Reservoirs and Standpipes							
331.00	Mains and Accessories							
	10-inch and Over	3	4,564,606	1,404,073	170,716	2,645,646	33,778	310,393
	Under 10-inch	4	7,305,438	2,277,835	248,385	2,165,332	38,719	2,575,167
333.00	Services	11	251,180	225,388	18,002	6,526	1,263	-

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
334.00	Meters	10	871,559	710,678	76,418	80,131	4,332	-
335.00	Fire Hydrants	9	600,568	-	-	-	-	600,568
340.00	Office Furniture	16	-	-	-	-	-	-
340.00	Computers and Peripheral Equipment	16	-	-	-	-	-	-
340.00	Other Office Equipment	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
341.00	Computer Software - CIS	14	-	-	-	-	-	-
341.00	Transportation Equipment	16	257,070	102,365	11,697	128,329	1,774	12,905
342.00	Stores Equipment	16	-	-	-	-	-	-
343.00	Tools and work Equipment	16	204,212	81,317	9,292	101,943	1,409	10,251
344.00	Laboratory Equipment	2	18,032	5,922	719	11,154	142	94
345.00	Power Operated Equipment	16	-	-	-	-	-	-
346.00	Communication Equipment	16	70,147	27,933	3,192	35,017	484	3,521
347.00	Miscellaneous Equipment	16	379,562	151,142	17,270	189,477	2,619	19,054
348.00	Other Tangible Equipment	16	-	-	-	-	-	-
	Total Depreciable Plant		23,615,389	7,988,835	916,807	10,770,718	154,635	3,784,385
	Total Utility Plant in Service (Net)		23,642,380	7,997,695	917,884	10,787,414	154,848	3,784,525
	Other Rate Base Elements							
18	Materials and Supplies	18	36,652	12,398	1,422	16,724	238	5,868
16A	Cash Working Capital - Expenses	16A	137,707	55,000	6,100	69,721	978	5,908
18	Cash Working Capital - Interest	18	(53,238)	(18,010)	(2,066)	(24,292)	(346)	(8,523)
18	Accrued and Prepaid Taxes	18	52,983	17,924	2,056	24,176	344	8,483
18	Deferred Taxes	18	(207,721)	(70,272)	(8,060)	(94,783)	(1,350)	(33,256)
4	Citizens Acquisition CIAC & CAC	4	-	-	-	-	-	-
18	Acquisition Adjustments	18	151,027	51,092	5,860	68,914	982	24,179
	Total Other Rate Base Elements		117,410	48,132	5,312	60,460	846	2,659
	Total Original Cost Rate Base		23,759,790	8,045,827	923,196	10,847,874	155,694	3,787,184

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 21. ALLOCATION OF UNRECOVERED PUBLIC FIRE PROTECTION.

Factors are based on the relative cost of meters by size for the Residential, Commercial, Industrial, and Public classifications, as follows:

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	\$ 2,297	0.8154
Commercial	247	0.0877
Industrial	259	0.0919
Public	14	0.0050
Total	<u>\$ 2,817</u>	<u>1.0000</u>

FACTOR 22. ALLOCATION OF BAD DEBT EXPENSE.

Factors are based on the historic net charge offs by class for PA-American Water.

Customer Classification	Net Charge Off	Allocation Factor
(1)	(2)	(3)
Residential	\$ 9,034,372	0.8917
Commercial	1,077,420	0.1064
Industrial	5,682	0.0006
Public	13,347	0.0013
Public Fire Protection	-	0.0000
Total	<u>\$ 10,130,821</u>	<u>1.0000</u>

WATER COST OF SERVICE
ALLOCATION STUDY
AS OF DECEMBER 31, 2022

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

COMPARISON OF PRO FORMA COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Customer Classification (1)	Pro Forma Cost of Service, as of December 31, 2022		Pro Forma Revenues Under Present Rates		Pro Forma Revenues Under Proposed Rates		Proposed Increase	
	Cost of Service (2)	Percent of Total (3)	Amount (4)	Percent of Total (5)	Amount (6)	Percent of Total (7)	Amount (8)	Percent Increase (9)
Residential	\$ 1,741,207	45.3%	\$ 1,040,612	31.5%	\$ 1,213,230	31.5%	\$ 172,619	16.6%
Commercial	171,218	4.4%	150,019	4.5%	174,916	4.5%	24,898	16.6%
Industrial	1,867,320	48.5%	2,044,671	61.8%	2,384,148	61.9%	339,477	16.6%
Public (Municipal)	28,422	0.7%	30,770	0.9%	35,880	0.9%	5,110	16.6%
Public Fire Protection	43,788	1.1%	41,500	1.3%	43,788	1.1%	2,288	
Total Sales of Water	3,851,955	100.0%	3,307,571	100.0%	3,851,962	99.9%	544,391	16.5%
Other Water Revenues	34,479		33,692		34,479		787	2.3%
Water Revenues from Water Oper Excl Steelton	1,360,848						-	0.0%
Contract Sales - Resale	50,477		50,477		50,477		-	0.0%
Total	\$ 5,297,760		\$ 3,391,741		\$ 3,936,919		\$ 545,178	16.1%

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PRESENT RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	PUBLIC FIRE (7)
1. REVENUES FROM SALES	\$ 3,307,571	\$ 1,040,612	\$ 150,019	\$ 2,044,671	\$ 30,770	\$ 41,500
2. OTHER REVENUES	84,169	32,253	3,062	39,343	578	8,933
3. TOTAL OPERATING REVENUES	3,391,741	1,072,865	153,081	2,084,014	31,348	50,433
4. LESS: OPERATING EXPENSES	2,829,530	1,522,173	151,709	1,461,284	22,820	(328,463)
5. RETURN AND INCOME TAXES	562,211	(449,308)	1,372	622,730	8,528	378,896
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	464,633	162,157	15,519	208,249	3,067	75,642
7. TAXABLE INCOME	97,578	(611,465)	(14,147)	414,482	5,461	303,254
8. LESS: INCOME TAXES (TAX. INC.)	500,835	(3,138,455)	(72,612)	2,127,401	28,030	1,556,505
9. NET RETURN (Line 5 - Line 8)	61,376	2,689,147	73,984	(1,504,671)	(19,502)	(1,177,609)
10. ORIGINAL COSTS MEASURE OF VALUE	24,266,267	8,468,573	810,573	10,875,966	160,113	3,951,032
11. RATE OF RETURN, PERCENT	0.25	31.75	9.13	(13.83)	(12.18)	(29.81)
12. RELATIVE RATE OF RETURN	1.00	125.55	36.09	(54.70)	(48.16)	(117.84)

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

DEVELOPMENT OF RATE OF RETURN BY CUSTOMER CLASSIFICATION
UNDER PROPOSED RATES

ITEM (1)	COST OF SERVICE (2)	RESIDENTIAL (3)	COMMERCIAL (4)	INDUSTRIAL (5)	PUBLIC (6)	PUBLIC FIRE (7)
1. REVENUES FROM SALES	\$ 3,851,962	\$ 1,213,230	\$ 174,916	\$ 2,384,148	\$ 35,880	\$ 43,788
2. OTHER REVENUES	1,445,805	660,534	64,868	700,557	10,719	9,126
3. TOTAL OPERATING REVENUES	5,297,767	1,873,764	239,784	3,084,705	46,599	52,914
4. LESS: OPERATING EXPENSES	2,831,788	1,540,865	153,723	1,462,872	22,865	(348,548)
5. RETURN AND INCOME TAXES	2,465,979	332,899	86,061	1,621,833	23,734	401,462
6. LESS: TAXABLE EXCLUSIONS (FACTOR 19)	466,033	162,692	15,566	208,829	3,076	75,870
7. TAXABLE INCOME	1,999,946	170,207	70,496	1,413,004	20,658	325,592
8. LESS: INCOME TAXES (TAX. INC.)	536,811	45,686	18,922	379,268	5,545	87,393
9. NET RETURN (Line 5 - Line 8)	1,929,168	287,213	67,139	1,242,565	18,189	314,069
10. ORIGINAL COSTS MEASURE OF VALUE	24,266,267	8,469,773	810,703	10,874,895	159,983	3,950,903
11. RATE OF RETURN, PERCENT	7.95	3.39	8.28	11.43	11.37	7.95
12. RELATIVE RATE OF RETURN	1.00	0.43	1.04	1.44	1.43	1.00

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
<u>OPERATION AND MAINTENANCE EXPENSES</u>								
<u>Source of Supply Expenses</u>								
----Operation----								
601.1	Salaries and Wages	2	\$ 998	\$ 330	\$ 33	\$ 621	\$ 8	\$ 5
610.1	Purchased Water	1	-	-	-	-	-	-
615.1	Purchased Power	1	16,656	4,795	458	11,128	152	123
616.1	Purchased Fuel	1	-	-	-	-	-	-
618.1	Chemicals	1	-	-	-	-	-	-
620.1	Materials and Supplies	2	3,838	1,271	126	2,390	31	20
631.1	Contract Services -Engineering	2	-	-	-	-	-	-
633.1	Contract Services -Legal	2	-	-	-	-	-	-
636.1	Contract Services -Other	2	159	53	5	99	1	1
641.1	Rental of Building	2	-	-	-	-	-	-
642.1	Rental of Equipment	2	-	-	-	-	-	-
650.1	Transportation	2	-	-	-	-	-	-
675.1	Miscellaneous Expenses	2	15,715	5,203	515	9,786	127	83
Total Operation			37,366	11,652	1,137	24,024	319	232
----Maintenance----								
601.2	Salaries and Wages	2	-	-	-	-	-	-
620.2	Materials and Supplies	2	-	-	-	-	-	-
636.2	Contract Services	2	-	-	-	-	-	-
631.2	Contract Services - Engineering	2	-	-	-	-	-	-
636.2	Contract Services - Other	2	-	-	-	-	-	-
650.1	Transportation	2	125	41	4	78	1	1
675.2	Misc. Maintenance Expense	2	-	-	-	-	-	-
Total Maintenance			125	41	4	78	1	1
Total Source of Supply Expenses			37,491	11,693	1,141	24,102	320	233

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
<u>Water Treatment Expenses</u>								
----Operation----								
601.3	Salaries and Wages	2	\$	6,361	630	11,964	156	102
	Power and Pumping and Other Dept Exp	2	19,213	61,123	6,055	114,954	1,495	978
615.3	Purification and Laboratory	1	87,607	25,222	2,409	58,530	797	648
618.3	Purchased Power	1	95,070	27,371	2,614	63,516	865	704
620.3	Chemicals	2	11,493	3,805	377	7,157	93	61
620.3	Materials and Supplies	2	-	-	-	-	-	-
631.3	Contract Services -Engineering	2	9,000	2,980	295	5,604	73	48
635.3	Contract Services -Testing	2	7,130	2,361	234	4,440	58	38
636.3	Contract Services -Other	2	-	-	-	-	-	-
641.3	Rental of Building	2	-	-	-	-	-	-
642.3	Rental of Equipment	2	-	-	-	-	-	-
650.3	Transportation	2	-	-	-	-	-	-
675.3	Miscellaneous Expenses							
	Waste Disposal	1	-	-	-	-	-	-
	Other	2	370,978	122,831	12,168	231,008	3,005	1,966
	Total Operation		785,097	252,054	24,782	497,173	6,542	4,545
----Maintenance----								
601.4	Salaries and Wages	2	-	-	-	-	-	-
	Power and Pumping	2	-	-	-	-	-	-
620.4	Purification and Laboratory	2	18,000	5,960	590	11,209	146	95
636.4	Materials and Supplies	2	-	-	-	-	-	-
636.4	Contract Services	2	-	-	-	-	-	-
636.4	Contract Services - Other	2	-	-	-	-	-	-
650.4	Transportation	2	-	-	-	-	-	-
675.4	Miscellaneous Expenses - Waste Disposal	1	-	-	-	-	-	-
	Total Maintenance		18,000	5,960	590	11,209	146	95
	Total Water Treatment Expenses		803,097	258,014	25,372	508,382	6,688	4,640

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
Transmission & Distribution Expenses								
----Operation----								
601.5	Salaries and Wages	8	\$ -	\$ -	\$ -	-	-	\$ -
	Supervision & Other Dept. Exps.	8	-	-	-	-	-	-
	Mains	8	-	-	-	-	-	-
	Storage Facilities	8	-	-	-	-	-	-
	Miscellaneous Meter Expense	8	-	-	-	-	-	-
	Services on Customer Premises	8	-	-	-	-	-	-
615.5	Purchased Power	1	3,610	1,039	99	2,412	33	27
620.5	Materials and Supplies	8	59,669	18,736	1,713	22,531	352	16,337
631.5	Contract Services -Engineering	8	-	-	-	-	-	-
636.5	Contract Services -Other	8	-	-	-	-	-	-
641.5	Rental of Building	8	-	-	-	-	-	-
642.5	Rental of Equipment	8	-	-	-	-	-	-
650.5	Transportation	8	-	-	-	-	-	-
675.5	Miscellaneous Expenses	8	3,023	949	87	1,141	18	828
	Total Operation		66,302	20,724	1,899	26,084	403	17,192
----Maintenance----								
601.6	Salaries and Wages	13	1,649	874	73	316	8	378
	Supervision and Engineering	4	347	110	10	104	2	122
	Structures and Improvements	8	13,274	4,168	381	5,012	78	3,634
	Mains	11	11,987	10,756	859	311	60	-
	Services	10	50	41	4	5	-	-
	Meters	4	45	14	1	14	-	16
	Storage Facilities	9	2,754	-	-	-	-	2,754
	Fire Hydrants	13	53,863	28,564	2,375	10,309	264	12,351
	Other	13	19,239	10,202	848	3,682	94	4,412
620.6	Materials and Supplies	13	-	-	-	-	-	-
636.6	Contract Services	13	-	-	-	-	-	-
637.6	Contract Services - Engineering	13	-	-	-	-	-	-
650.6	Transportation	13	-	-	-	-	-	-
675.6	Miscellaneous Expenses	13	-	-	-	-	-	-
	Total Maintenance		103,209	54,729	4,551	19,753	506	23,667

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
	Total Transmission and Distribution Expenses		169,511	75,453	6,450	45,837	909	40,859
	<u>Customer Accounting Expenses</u>							
601.7	Salaries and Wages	15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Meter Reading and Other Expense	10	-	-	-	-	-	-
	Meter Services	14	-	-	-	-	-	-
620.7	Materials and Supplies	14	-	-	-	-	-	-
636.7	Contract Services -Other	14	-	-	-	-	-	-
642.7	Rental of Equipment	14	-	-	-	-	-	-
650.7	Transportation	14	-	-	-	-	-	-
670.7	Bad Debt	22	63,838	56,924	6,792	38	83	-
675.7	Miscellaneous Expenses	14	10,180	9,443	625	54	54	4
	Total Customer Accounting Expenses		74,018	66,367	7,417	92	137	4
	<u>Administrative and General Expenses</u>							
601.8	Salaries and Wages	16	\$ 39,394	\$ 15,789	\$ 1,556	\$ 19,795	\$ 276	\$ 1,978
603.8	Salaries of Officers	17	-	-	-	-	-	-
604.8	Employees Pension and Benefits	17	89,623	32,533	3,137	50,018	681	3,253
615.8	Purchased Power	16	-	-	-	-	-	-
621	Materials and Supplies	16	-	-	-	-	-	-
631.8	Contract Services -Engineering	16	-	-	-	-	-	-
632.8	Contract Services -Accounting	16	-	-	-	-	-	-
633.8	Contract Services -Legal	16	-	-	-	-	-	-
634.8	Contract Services -Management	16	-	-	-	-	-	-
	Customer Related	14	55,362	51,359	3,396	291	291	24
	Employee Related	17	15,699	5,699	549	8,762	119	570
	Water Quality Related	1	1,605	462	44	1,072	15	12
	Other	16	132,576	53,136	5,237	66,619	928	6,655
636.8	Contract Services -Other	16	99,212	39,764	3,919	49,854	694	4,980
641.8	Rental of Buildings	16	-	-	-	-	-	-
642.8	Rental of Equipment	16	-	-	-	-	-	-
650.8	Transportation	16	16,340	6,549	645	8,211	114	820
656.8	Insurance -Vehicles	16	1,124	450	44	565	8	56
657.8	Insurance -General Liability	16	47,833	19,171	1,889	24,036	335	2,401
658.8	Insurance -Workers Comp	17	7,655	2,779	268	4,272	58	278

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)
659.8	Insurance -Other	16	12,634	5,064	499	6,349	88	634
660.8	Advertising	14	-	-	-	-	-	-
666.8	Amortization of Rate Case Exp.	20	2,347	874	84	1,116	16	257
667.8	Regulatory Commission	20	-	-	-	-	-	-
675.8	Miscellaneous Expenses	16	189,784	76,065	7,496	95,366	1,328	9,527
	Total Administrative and General Expenses		711,188	309,694	28,763	336,326	4,951	31,445
	Total Operation & Maintenance Expenses		\$ 1,795,305	\$ 721,221	\$ 69,143	\$ 914,739	\$ 13,005	\$ 77,181

DEPRECIATION EXPENSE

303.14	Water Rights - Hybernica Dam	1	\$ -	-	\$ -	-	-	\$ -
303.35	Waste Handling & Treatment Land	1	-	-	-	-	-	-
303.99	Comprehensive Planning Studies	18	-	-	-	-	-	-
304.15	Other Water Source Structures	2	162	54	-	101	1	1
304.20	Power and Pumping Structures	2	-	-	-	-	-	-
304.30	Purification Buildings	2	290,290	96,115	9,522	180,764	2,351	1,539
304.36	Waste Handling & Treatment Structures	1	-	-	-	-	-	-
304.39	Purification Buildings - Tank Painting	2	-	-	-	-	-	-
304.61	Office Buildings	16	-	-	-	-	-	-
304.62	Stores, Shop and Garage Bldgs.	16	-	-	-	-	-	-
304.63	Misc. Structures and Improvements	16	-	-	-	-	-	-
305.00	Collecting & Impounding Reservoirs	1	-	-	-	-	-	-
306.00	Lake, River and Other Intakes	2	491	163	16	306	4	3
307.00	Wells and Springs	2	-	-	-	-	-	-
310.00	Power Generation Equipment	2	12,090	4,003	397	7,528	98	64
311.00	Pumping Equipment Other	5	-	-	-	-	-	-
311.52	Pumping Equipment Source of Supply	2	-	-	-	-	-	-
311.53	Pumping Equipment Water Treatment	2	70,702	23,409	2,319	44,026	573	375
311.54	Pumping Equipment Transmission and Distribution	8	-	-	-	-	-	-
320.00	Purification System	2	87,582	28,998	2,873	54,537	709	464
330.00	Distr. Reservoirs and Standpipes	4	33,329	10,515	933	9,955	177	11,748
331.00	Mains and Accessories							

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
333.00	10-inch and Over	3	76,232	23,640	2,348	44,474	579	5,191
334.00	Under 10-inch	4	122,006	38,493	3,416	36,443	647	43,007
335.00	Services	11	9,500	8,525	681	247	48	-
340.00	Meters	10	84,441	68,854	7,404	7,764	420	-
340.00	Fire Hydrants	9	14,940	-	-	-	-	14,940
340.00	Office Furniture	16	-	-	-	-	-	-
340.00	Computers and Peripheral Equipment	16	-	-	-	-	-	-
340.00	Other Office Equipment	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
340.00	Computer Software - CIS	14	-	-	-	-	-	-
341.00	Transportation Equipment	16	47,509	19,042	1,877	23,873	333	2,385
342.00	Stores Equipment	16	-	-	-	-	-	-
343.00	Tools and work Equipment	16	12,248	4,909	484	6,155	86	615
344.00	Laboratory Equipment	2	1,450	480	48	903	12	8
345.00	Power Operated Equipment	16	-	-	-	-	-	-
346.00	Communication Equipment	16	5,011	2,008	198	2,518	35	252
347.00	Miscellaneous Equipment	16	16,177	6,484	639	8,129	113	812
348.00	Other Tangible Equipment	16	-	-	-	-	-	-
Total Depreciation Expense			\$ 884,160	\$ 335,692	\$ 33,160	\$ 427,723	\$ 6,186	\$ 81,404
Amortizations			\$ 18,393	\$ 6,421	\$ 614	\$ 8,242	\$ 121	\$ 2,994
Taxes, Other Than Income			\$ 26,252	\$ 9,165	\$ 877	\$ 11,764	\$ 173	\$ 4,274
19	Local Property and Miscellaneous	19	26,215	9,516	918	14,631	199	952
17	Federal and State Payroll Taxes	17	-	-	-	-	-	-
20	State Capital Stock Tax	20	30,502	11,353	1,092	14,507	210	3,340
19	PUC and OCA Assessments	19	50,961	17,790	1,702	22,836	336	8,296
19	Public Utility Realty Taxes	19	-	-	-	-	-	-
Total Taxes Other Than Income Taxes			\$ 133,930	\$ 47,824	\$ 4,589	\$ 63,738	\$ 918	\$ 16,862
Total O&M, Depreciation, Amort, and Taxes Other than Inc.			2,831,788	1,111,158	107,506	1,414,442	20,230	178,441
Federal and State Income Taxes			536,811	187,402	17,929	240,545	3,543	87,393

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

ALLOCATION OF COST OF SERVICE TO CUSTOMER CLASSIFICATIONS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (10)
	Utility Operating Income Available for Return	19	1,929,168	673,474	64,434	864,460	12,733	314,069
	Total Cost of Service - Water		\$ 5,297,767	\$ 1,972,034	\$ 189,869	\$ 2,519,447	\$ 36,506	\$ 579,903
469	Water Revenues from Water Oper Excl Steelton Unrecovered Public Fire	20 9	(1,360,848) 149,013	(506,508) -	(48,718) -	(647,219) -	(9,390) -	(149,013) 149,013
470	Reallocate Unrecovered Public Fire	21	(149,013)	(121,505)	(13,068)	(13,694)	(745)	-
471	Other Water Revenues -Late Payment Fees	20	(32,859)	(12,230)	(1,176)	(15,628)	(227)	(3,598)
472	Other Water Revenues - Misc. Service Revenues	14	(1,620)	(1,503)	(99)	(9)	(9)	(1)
	Other Water Revenues - Rents from Other Properties	16	-	-	-	-	-	-
	Revenue from Contract Sales	20	(50,477)	(18,788)	(1,807)	(24,007)	(348)	(5,527)
	Unrecovered Public Fire	9	(526,989)	-	-	-	-	(526,989)
	Reallocate Unrecovered Public Fire	21	526,989	429,707	46,217	48,430	2,635	-
	Total Cost of Service Related to Sales of Water		\$ 3,851,962	\$ 1,741,207	\$ 171,218	\$ 1,867,320	\$ 28,422	\$ 43,788

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED.

Factors are based on the pro forma future test year average daily consumption for each customer classification.

Customer Classification (1)	Average Daily Consumption, 100 Gallons (2)	Allocation Factor (3)
Residential	2,480	0.2879
Commercial	237	0.0275
Industrial	5,754	0.6681
Public	78	0.0091
Public Fire Protection	64	0.0074
Total	8,613	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM DAY EXTRA CAPACITY FUNCTIONS.

(Factor 1) and the factors derived from maximum day extra capacity demand for each customer classification, as follows:

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2)x 0.7143	(4)	(5)=(4)x 0.2857	(6)=(3)+(5)
Residential	0.2879	0.2057	0.4390	0.1254	0.3311
Commercial	0.0275	0.0196	0.0462	0.0132	0.0328
Industrial	0.6681	0.4772	0.5093	0.1455	0.6227
Public	0.0091	0.0065	0.0055	0.0016	0.0081
Public Fire Protection	0.0074	0.0053			0.0053
Total	1.0000	0.7143	1.0000	0.2857	1.0000

The derivation of the maximum day extra capacity factors in column 4 and the basis for the column 3 and column 5 weightings are presented on the following page.

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PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM DAY EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Daily Consumption, 100 Gallons	Maximum Day Extra Capacity		
		Factor*	Rate of Flow, 100 Gallons Per Day	Allocation Factor
(1)	(2)	(3)	(4)	(5)
Residential	2,480	1.0	2,480	0.4390
Commercial	237	1.1	261	0.0462
Industrial	5,754	0.5	2,877	0.5093
Public	78	0.4	31	0.0055
Total	<u>8,549</u>		<u>5,649</u>	<u>1.0000</u>

The weighting of the factors is based on the maximum day ratio of 1.4,
based on a review of maximum day ratios experienced by the company. (See Schedule G)

	Maximum Day Ratio	Weight
Average Day	1.0	0.7143
Maximum Day Extra Capacity	<u>0.4</u>	<u>0.2857</u>
Total	<u>1.4</u>	<u>1.0000</u>

* Ratio of maximum day to average day minus 1.0.

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS.

Factors are based on the weighting of the average daily consumption, the maximum day extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Fire Protection		Allocation Factor
	Allocation Factor 1	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2) X 0.6692	(4)	(5)=(4) X 0.2677	(6)	(7)=(6) X 0.0631	(8)=(3)+ (5)+(7)
Residential	0.2879	0.1926	0.4390	0.1175			0.3101
Commercial	0.0275	0.0184	0.0462	0.0124			0.0308
Industrial	0.6681	0.4471	0.5093	0.1363			0.5834
Public	0.0091	0.0061	0.0055	0.0015			0.0076
Public Fire Protection	0.0074	0.0050			1.0000	0.0631	0.0681
Total	1.0000	0.6692	1.0000	0.2677	1.0000	0.0631	1.0000

The basis for the column 3, column 5 and column 7 weightings are presented on the following page.

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum day ratio of 1.4 and the average pumpage for the test year ended 12/31/19. The system demand for fire protection is 1,000 gpm, for 2 hours.

	<u>Ratio</u>	<u>Rate of Flow, (GPD)</u>	<u>Weight</u>
Average Day	1.0	1,272,496	0.6692
Maximum Day Extra Capacity	<u>0.4</u>	<u>508,998</u>	<u>0.2677</u>
Subtotal	1.4	1,781,494	0.9369
Fire Protection		<u>120,000</u>	<u>0.0631</u>
Total		<u><u>1,901,494</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 6 on the preceding page are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service.

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS.

fire protection demand for each customer classification.

Customer Classification	Average Hourly Consumption			Maximum Hour Extra Capacity		Fire Protection		Allocation Factor
	100 Gals.	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)	(4)=(3) X 0.3095	(5)	(6)=(5) X 0.3403	(7)	(8)=(7) X 0.3502	(9)=(4)+(6)+(8)
Residential	103.3	0.2879	0.0891	0.6652	0.2264			0.3155
Commercial	9.9	0.0275	0.0085	0.0573	0.0195			0.0280
Industrial	239.8	0.6681	0.2068	0.2702	0.0919			0.2987
Public	3.3	0.0091	0.0028	0.0073	0.0025			0.0053
Public Fire Protection	2.7	0.0074	0.0023			1.0000	0.3502	0.3525
Total	358.9	1.0000	0.3095	1.0000	0.3403	1.0000	0.3502	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum hour ratio of 2.1, and the average pumpage for the test year ended 12/31/2019. The system demand for fire protection is 1,000 gpm.

	<u>Ratio</u>	<u>Rate of Flow, (GPM)</u>	<u>Weight</u>
Average Hour	1.0	884	0.3095
Maximum Hour Extra Capacity	<u>1.1</u>	<u>972</u>	<u>0.3403</u>
Subtotal	2.1	1,856	0.6498
Fire Protection		<u>1,000</u>	<u>0.3502</u>
Total		<u><u>2,856</u></u>	<u><u>1.0000</u></u>

The allocation factors in column 7 of Factor 4 are based on the relative potential fire demands of General Service and Public and Private Fire Protection Service..

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification	Average Hourly Consumption 100 Gals.	Maximum Hour Extra Capacity		
		Factor*	Rate, 100 Gals. Per Hour	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
Residential	103.3	4.0	413.3	0.6652
Commercial	9.9	3.6	35.6	0.0573
Industrial	239.8	0.7	167.9	0.2702
Public	3.3	1.4	4.6	0.0073
Total	356.3		621.3	1.0000

* Ratio Of Maximum Hour To Average Hour Minus 1.0.

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PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING EQUIPMENT OTHER

Factors are based on the weighting of the maximum daily consumption with fire, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows.

Customer Classification	Maximum Daily Consumption		Maximum Hourly Consumption		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.6667	(4)	(5)=(4)x 0.3333	(6)=(3)+5
Residential	0.3101	0.2067	0.3155	0.1051	0.3118
Commercial	0.0308	0.0205	0.0280	0.0093	0.0298
Industrial	0.5834	0.3890	0.2987	0.0996	0.4886
Public	0.0076	0.0051	0.0053	0.0018	0.0069
Public Fire Protection	0.0681	0.0454	0.3525	0.1175	0.1629
Total	1.0000	0.6667	1.0000	0.3333	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5A. THIS FACTOR NOT USED IN THE ALLOCATION

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 6. THIS FACTOR IS NOT USED IN THIS ALLOCATION

FACTOR 7. FACTOR NOT USED IN THIS ALLOCATION

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 8. ALLOCATION OF COSTS ASSOCIATED WITH MAINS.

Factors are based on the weighting of the maximum daily consumption, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows:

Customer Classification	10-inch and Larger		Under 10-inch		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)x 0.2770	(4)	(5)=(4)x 0.7230	(6)=(3)+(5)
Residential	0.3101	0.0859	0.3155	0.2281	0.3140
Commercial	0.0308	0.0085	0.0280	0.0202	0.0287
Industrial	0.5834	0.1616	0.2987	0.2160	0.3776
Public	0.0076	0.0021	0.0053	0.0038	0.0059
Public Fire Protection	0.0681	0.0189	0.3525	0.2549	0.2738
Total	1.0000	0.2770	1.0000	0.7230	1.0000

The weighting of the factors is based on the length of transmission mains and distribution mains, as follows:

	Length of Mains (Feet)	Weight
10-inch and Larger	14,824,111	0.2770
Under 10-inch	38,694,833	0.7230
Total	53,518,944	1.0000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 9. ALLOCATION OF COSTS ASSOCIATED WITH FIRE HYDRANTS.

These costs are assigned directly to Public Fire Protection.

Customer Classification	Allocation Factor
(1)	(2)
Public Fire Protection	1.0000

FACTOR 10. ALLOCATION OF COSTS ASSOCIATED WITH METERS.

Factors are based on the relative cost of meters by size and customer classification, as developed on the following page and summarized below.

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	2,297	0.81541
Commercial	247	0.08768
Industrial	259	0.09194
Public	14	0.00497
Total	2,817	1.00000

FACTOR 11. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES.

Factors are based on the relative cost of services by size and customer classification, as developed on the second of the following pages, and summarized below.

Customer Classification	3/4" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	2,141	0.89732
Commercial	171	0.07167
Industrial	62	0.02598
Public	12	0.00503
Private Fire Protection	0	0.00000
Total	2,386	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS
BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size (1)	5/8" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Private Fire Protection		Total	
		Number of Meters (3)	Weighting (4)=(2)X(3)	Number of Meters (5)	Weighting (6)=(2)X(5)	Number of Meters (7)	Weighting (8)=(2)X(7)	Number of Meters (9)	Weighting (10)=(2)X(9)	Number of Meters (15)	Weighting (16)=(2)X(15)	Number of Meters (17)	Weighting (18)
5/8	1.0	2,014	2,014	100	100	1	1	10	10	0	0	2,125	2,125
3/4	1.5	0	0	0	0	0	0	0	0	0	0	0	0
1	2.0	97	194	25	50	0	0	1	2	0	0	123	246
1-1/2	2.2	1	2	7	15	0	0	1	2	0	0	0	0
2	3.5	1	4	4	14	2	7	0	0	0	0	7	25
3	7.0	0	0	2	14	0	0	0	0	0	0	0	0
4	20.8	4	83	1	21	3	62	0	0	0	0	8	166
6	30.8	0	0	0	0	4	123	0	0	0	0	0	0
8	33.1	0	0	1	33	2	66	0	0	0	0	3	99
10	47.6	0	0	0	0	0	0	0	0	0	0	0	0
Total		2,117	2,297	140	247	12	259	12	14	0	0	2,266	2,661

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

BASIS FOR ALLOCATING SERVICE COSTS TO CUSTOMER CLASSIFICATIONS

Service Size (1)	3/4" Dollar Equivalent (2)	Residential		Commercial		Industrial		Public		Private Fire Protection		Total	
		Number of Services (3)	Weighting (4)=(2)X(3)	Number of Services (5)	Weighting (6)=(2)X(5)	Number of Services (7)	Weighting (8)=(2)X(7)	Number of Services (9)	Weighting (10)=(2)X(9)	Number of Services (15)	Weighting (16)=(2)X(15)	Number of Services (17)	Weighting (18)
3/4 & 1"	1.00	2,111	2,111	125	125	1	1	11	11	0	0	2,248	2,248
1-1/2	1.10	1	1	7	8	0	0	1	1	0	0	0	0
2	3.30	1	3	4	13	2	7	0	0	0	0	7	23
3	3.10	0	0	2	6	0	0	0	0	0	0	0	0
4	2.80	4	11	1	3	3	8	0	0	0	0	8	22
6	3.70	4	15	0	0	4	15	0	0	0	0	0	0
8	15.50	0	0	1	16	2	31	0	0	0	0	3	47
10	8.30	0	0	0	0	0	0	0	0	0	0	0	0
12	20.10	0	0	0	0	0	0	0	0	0	0	0	0
Total		2,121	2,141	140	171	12	62	12	12	0	0	2,266	2,340

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 12. FACTOR NOT USED IN THIS ALLOCATION

FACTOR 13. ALLOCATION OF TRANSMISSION AND DISTRIBUTION MAINTENANCE SUPERVISION
AND ENGINEERING AND OTHER MAINTENANCE DEPARTMENT EXPENSES.

The factors are based on the allocation of Transmission and Distribution Maintenance Salaries
and Wages, as follows:

Customer Classification	Transmission & Distribution Maintenance Salaries & Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 15,089	0.5303
Commercial	1,255	0.0441
Industrial	5,446	0.1914
Public	140	0.0049
Public Fire Protection	6,526	0.2293
Total	<u>\$ 28,456</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 14. ALLOCATION OF CUSTOMER ACCOUNTING, BILLING AND COLLECTING COSTS.

Factors are based on the pro forma number of customers, as follows:

Customer Classification	Proforma Number of Customers	Allocation Factor
(1)	(2)	(3)
Residential	2,117	0.92769
Commercial	140	0.06135
Industrial	12	0.00526
Public	12	0.00526
Public Fire Protection	1	0.00044
Total	2,282	1.00000

FACTOR 15. ALLOCATION OF METER READING COSTS.

Factors are based on the number of meters by class.

Customer Classification	Pro Forma Number of Meters	Allocation Factor
(1)	(2)	(3)
Residential	2,117.0	0.92810
Commercial	140.0	0.06138
Industrial	12.0	0.00526
Public	12.0	0.00526
Total	2,281.0	1.00000

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 16. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSES.

The factors are based on the allocation of all other operation and maintenance expenses excluding purchased water, power, fuel, chemicals and waste disposal expenses.

Customer Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
Residential	\$ 353,100	0.4008
Commercial	34,800	0.0395
Industrial	442,827	0.5025
Public	6,207	0.0070
Public Fire Protection	44,234	0.0502
Total	<u>\$ 881,168</u>	<u>1.0000</u>

FACTOR 16A. ALLOCATION OF CASH WORKING CAPITAL - EXPENSES

The functions are based on the allocation of all other operation and maintenance expenses excluding regulatory commission expense.

Customer Classification (1)	Operation & Maintenance Expenses (2)	Allocation Factor (3)
Residential	\$ 720,347	0.4018
Commercial	69,059	0.0385
Industrial	913,623	0.5096
Public	12,989	0.0072
Public Fire Protection	76,924	0.0429
Total	<u>\$ 1,792,942</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 17. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

The factors are based on the allocation of direct salaries and wages as follows:

Customer Classification	Salaries and Wages	Allocation Factor
(1)	(2)	(3)
Residential	\$ 99,566	0.3630
Commercial	9,602	0.0350
Industrial	153,096	0.5581
Public	2,083	0.0076
Public Fire Protection	9,967	0.0363
Total	<u>\$274,314</u>	<u>1.0000</u>

FACTOR 18. ALLOCATION OF ORGANIZATION, FRANCHISES AND CONSENTS, OTHER INTANGIBLE PLANT AND OTHER RATE BASE ELEMENTS.

The factors are based on the allocation of the original cost less depreciation other than those items being allocated, as follows:

Customer Classification	Original Cost Less Depreciation	Allocation Factor
(1)	(2)	(3)
Residential	\$ 8,451,259	0.3487
Commercial	808,928	0.0334
Industrial	10,852,028	0.4478
Public	159,690	0.0066
Public Fire Protection	3,962,906	0.1635
Total	<u>\$ 24,234,811</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 19. ALLOCATION OF INCOME TAXES AND INCOME AVAILABLE FOR RETURN.

The factors are based on the allocation of the original cost measure of value rate base as shown on the following pages and summarized below:

Customer Classification (1)	Original Cost Measure of Value (2)	Allocation Factor (3)
Residential	\$ 8,469,773	0.3491
Commercial	810,703	0.0334
Industrial	10,874,895	0.4481
Public	159,983	0.0066
Public Fire Protection	3,950,903	0.1628
Total	<u>\$ 24,266,257</u>	<u>1.0000</u>

FACTOR 20. ALLOCATION OF REGULATORY COMMISSION EXPENSES, ASSESSMENTS AND OTHER WATER REVENUES.

The factors are based on the allocation of the total cost of service, excluding those items being allocated.

Customer Classification (1)	Total Cost of Service (2)	Allocation Factor (3)
Residential	\$ 1,959,807	0.3722
Commercial	188,693	0.0358
Industrial	2,503,824	0.4756
Public	36,280	0.0069
Public Fire Protection	576,306	0.1095
Total	<u>\$ 5,264,910</u>	<u>1.0000</u>

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number (1)	Account Description (2)	Factor Ref. (3)	Cost of Service (4)	Residential (5)	Commercial (6)	Industrial (7)	Other Public Authority (8)	Public Fire Protection (9)
Nondepreciable Plant								
301.00	Organization	18	\$ -	-	\$ -	-	\$ -	-
302.00	Franchises and Consents	18	-	-	-	-	-	-
303.00	Other Intangible Plant	18	3	1	-	1	-	-
303.11	Water Rights	1	-	-	-	-	-	-
303.12	Reservoir Land	1	-	-	-	-	-	-
303.13	Other Sources of Supply Land	2	-	-	-	-	-	-
303.20	Power and Pumping Land	5	-	-	-	-	-	-
303.30	Purification Land	2	26,988	8,935	885	16,805	219	143
303.40	Transmission and Distribution Land	8	-	(1)	-	-	-	-
303.50	Distr. Reservoir & Standpipe Land	4	-	(2)	-	-	-	-
303.61	Office Land	16	-	-	-	-	-	-
303.62	Stores, Shop and Garage Land	16	-	-	-	-	-	-
Total Nondepreciable Plant			26,991	8,933	885	16,806	219	143
Depreciable Plant								
303.14	Water Rights - Hibernia Dam	1	-	-	-	-	-	-
303.35	Waste Handling & Treatment Land	1	-	(1)	-	-	-	-
304	Comprehensive Planning Studies	18	-	-	-	-	-	-
304.15	Other Water Source Structures	2	6,281	2,079	206	3,911	51	33
304.20	Power and Pumping Structures	5A	-	(1)	-	-	-	-
304.30	Purification Buildings	2	5,377,922	1,780,630	176,396	3,348,832	43,561	28,503
304.36	Waste Handling & Treatment Structures	1	-	-	-	-	-	-
304.38	Waste Handling & Treatment Structure F	1	-	-	-	-	-	-
304.39	Purification Buildings - Tank Painting	2	-	-	-	-	-	-
304.61	Office Buildings	16	-	-	-	-	-	-
304.62	Stores, Shop and Garage Bldgs.	16	-	(1)	-	-	-	-
304.63	Misc. Structures and Improvements	16	-	-	-	-	-	-
305.00	Collecting & Impounding Reservoirs	1	-	-	-	-	-	-
306.00	Lake, River and Other Intakes	2	8,651	2,864	284	5,387	70	46
307.00	Wells and Springs	2	-	(1)	-	-	-	-
310.00	Power Generation Equipment	5A	336,598	135,244	12,959	171,530	2,424	14,440
311.20	Pumping Equipment Other	5	-	-	-	-	-	-
311.52	Pumping Equipment Source of Supply	2	871,144	288,436	28,574	542,462	7,056	4,617
311.53	Pumping Equipment Water Treatment	2	1,560,469	516,671	51,183	971,704	12,640	8,270
320.00	Purification System	2	520,796	164,311	14,582	155,562	2,760	183,581
330.00	Distr. Reservoirs and Standpipes	4	-	-	-	-	-	-
331.00	Mains and Accessories	3	4,810,364	1,491,694	148,159	2,806,366	36,559	327,586
	10-inch and Over	4	7,698,761	2,428,959	215,565	2,299,620	40,803	2,713,813
333.00	Under 10-inch Services	11	495,871	444,955	35,539	12,883	2,494	-

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTOR 19. ORIGINAL COSTS MEASURE OF VALUE RATE BASE ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account Number	Account Description	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Other Public Authority	Public Fire Protection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
334.00	Meters	10	1,046,703	853,492	91,775	96,234	5,202	-
335.00	Fire Hydrants	9	640,730	-	-	-	-	640,730
340.00	Office Furniture	16	-	-	-	-	-	-
340.00	Computers and Peripheral Equipment	16	-	-	-	-	-	-
340.00	Other Office Equipment	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
340.00	Computer Software	16	-	-	-	-	-	-
341.00	Computer Software - CIS	14	-	-	-	-	-	-
341.00	Transportation Equipment	16	182,910	73,310	7,225	91,912	1,280	9,182
342.00	Stores Equipment	16	-	-	-	-	-	-
343.00	Tools and work Equipment	16	217,104	87,015	8,576	109,095	1,520	10,899
344.00	Laboratory Equipment	2	15,608	5,168	512	9,719	126	83
345.00	Power Operated Equipment	16	-	-	-	-	-	-
346.00	Communication Equipment	16	62,632	25,103	2,474	31,473	438	3,144
347.00	Miscellaneous Equipment	16	355,289	142,400	14,034	178,533	2,487	17,836
348.00	Other Tangible Equipment	16	-	-	-	-	-	-
	Total Depreciable Plant		24,207,832	8,442,327	808,043	10,835,223	159,471	3,962,763
	Total Utility Plant in Service (Net)		24,234,823	8,451,260	808,928	10,852,029	159,690	3,962,906
	Other Rate Base Elements							
18	Materials and Supplies	18	36,652	12,780	1,224	16,413	242	5,993
16A	Cash Working Capital - Expenses	16A	142,154	57,117	5,473	72,442	1,024	6,098
18	Cash Working Capital - Interest	18	(53,080)	(18,509)	(1,773)	(23,769)	(350)	(8,679)
18	Accrued and Prepaid Taxes	18	53,776	18,752	1,796	24,081	355	8,792
18	Deferred Taxes	18	(275,238)	(95,975)	(9,193)	(123,252)	(1,817)	(45,001)
4	Citizens Acquisition CIAC & CAC	4	-	-	-	-	-	-
18	Acquisition Adjustments	18	127,180	44,348	4,248	56,951	839	20,794
	Total Other Rate Base Elements		31,444	18,513	1,775	22,866	293	(12,003)
	Total Original Cost Rate Base		24,266,267	8,469,773	810,703	10,874,895	159,983	3,950,903

PENNSYLVANIA-AMERICAN WATER COMPANY - STEELTON WATER OPERATIONS

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 21. ALLOCATION OF UNRECOVERED PUBLIC FIRE PROTECTION.

Factors are based on the relative cost of meters by size for the Residential, Commercial, Industrial, and Public classifications, as follows:

Customer Classification	5/8" Dollar Equivalents	Allocation Factor
(1)	(2)	(3)
Residential	\$ 2,297	0.8154
Commercial	247	0.0877
Industrial	259	0.0919
Public	14	0.0050
Total	<u>\$ 2,817</u>	<u>1.0000</u>

FACTOR 22. ALLOCATION OF BAD DEBT EXPENSE.

Factors are based on the historic net charge offs by class for PA-American Water.

Customer Classification	Net Charge Off	Allocation Factor
(1)	(2)	(3)
Residential	\$ 9,034,372	0.8917
Commercial	1,077,420	0.1064
Industrial	5,682	0.0006
Public	13,347	0.0013
Public Fire Protection	-	0.0000
Total	<u>\$ 10,130,821</u>	<u>1.0000</u>