

1                                   **RESPONSE TO PUBLIC ADVOCATE’S INTERROGATORIES**  
2                                   **AND REQUESTS FOR PRODUCTION OF DOCUMENTS**

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4 **PA-VII-1.**   PLEASE DESCRIBE AND EXPLAIN IN DETAIL THE PWD’S EFFORTS TO  
5                                   PROMOTE THE CONSERVATION OF WATER THROUGHOUT THE YEAR,  
6                                   DURING PEAK DAYS, AND DURING PEAK HOURS.

7 **RESPONSE:**

8       Other than public outreach to discourage hydrant abuse, PWD does not have any formal efforts  
9       to promote conservation throughout the year, during peak days or peak hours. Do note that  
10      conservation efforts are instituted through the low-income conservation assistance program  
11      also known as LiCAP.

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27 **RESPONSE PROVIDED BY:** Joanne Dahme, Philadelphia Water Department  
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1 **PA-VII-2.** PLEASE DESCRIBE AND EXPLAIN IN DETAIL THE BENEFITS THE PWD  
2 SYSTEM AND ITS CUSTOMERS COULD POTENTIALLY REALIZE IF PWD  
3 WAS SUCCESSFUL IN ITS ANNUAL, PEAK DAY, AND PEAK HOUR  
4 CUSTOMER CONSERVATION EFFORTS.

5 **RESPONSE:**

6 Please see response to PA-VII-1.  
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27 **RESPONSE PROVIDED BY:** Melissa LaBuda, Philadelphia Water Department  
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1 **PA-VII-3.** PLEASE EXPLAIN WHETHER PRIVATE FIRE PROTECTION SERVICE  
2 CUSTOMERS BENEFIT FROM THE PROVISION OF PUBLIC PRIVATE  
3 FIRE PROTECTION SERVICE AND WHETHER PRIVATE FIRE  
4 PROTECTION CUSTOMERS HAVE BEEN ALLOCATED ANY OF THE  
5 COSTS OF PUBLIC FIRE PROTECTION THAT WILL NO LONGER BE  
6 FUNDED BY THE CITY’S GENERAL FUND.

7 **RESPONSE:**

8 Under the proposed rates, public fire protection costs will be recovered as part of the meter  
9 based water general service charges. Because all water customers are subject to the general  
10 water service charge, customers with private fire protection service would also pay for public  
11 fire protection.

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13 Private fire protection charges are based upon additional service demands related to private fire  
14 suppression systems rather than costs of public fire protection.

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27 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC  
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**PA-VII-4.** REFERENCE PA-ADV-36, ITEM 4. PLEASE IDENTIFY THE ACTUAL TOTAL MONTHLY FEET OF GA AND IA ASSOCIATED WITH COMMUNITY GARDENS SINCE JANUARY 2017. ALSO IDENTIFY THE GA AND IA ASSOCIATED WITH ALL PENDING APPLICATIONS.

**RESPONSE:**

| Month                 | Cumulative<br>Approved Gardens | Cumulative<br>Total GA | Cumulative<br>Total IA |
|-----------------------|--------------------------------|------------------------|------------------------|
| January 2017          |                                | -                      | -                      |
| February 2017         |                                | -                      | -                      |
| March 2017            |                                | -                      | -                      |
| April 2017            | 1                              | 8,740                  | 317                    |
| May 2017              | 4                              | 19,646                 | 361                    |
| June 2017             | 6                              | 38,331                 | 633                    |
| July 2017             | 8                              | 77,729                 | 1,735                  |
| August 2017           | 21                             | 865,150                | 51,745                 |
| September 2017        | 23                             | 894,371                | 51,745                 |
| October 2017          | 24                             | 907,751                | 53,599                 |
| November 2017         | 25                             | 911,097                | 54,122                 |
| December 2017         | 26                             | 914,117                | 54,307                 |
| January 2018          | 36                             | 1,131,403              | 62,814                 |
| February 2018         | 45                             | 1,149,698              | 63,979                 |
| March 2018            | 45                             | 1,149,698              | 63,979                 |
| <b>Pending Garden</b> |                                |                        |                        |
|                       | <b>Applications</b>            | <b>Total GA</b>        | <b>Total IA</b>        |
|                       | 2                              | 1,305                  | 326                    |

Note – one approved garden can include multiple parcels.

**RESPONSE PROVIDED BY:** Erin Williams, Philadelphia Water Department

1 **PA-VII-5.** REFERENCE PA-ADV-39. PLEASE EXPLAIN HOW A TYPICAL  
2 RESIDENTIAL CUSTOMER CAN DETERMINE THEIR VOLUMETRIC  
3 USAGE WATER AND SEWER CHARGES UNDER THE CURRENT BILL  
4 FORMAT.

5 **RESPONSE:**

6 Volumetric usage is shown on customer bills (hundred cubic feet, average gallons per day and  
7 the bar graph showing 13 months of total consumption). For a sample, please see response  
8 attachment PA ADV 39.

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28 **RESPONSE PROVIDED BY:** Joanne Dahme, Philadelphia Water Department

1 **PA-VII-6.** REFERENCE PA-ADV-41:

2 A. PLEASE EXPLAIN THE DIFFERENCE BETWEEN THE TWO TABs  
3 INCLUDED IN THE EXCEL FILE; AND

4 B. PLEASE UPDATE THE RESPONSE FOR FY 2017.

5 **RESPONSE:**

6 A. The first tab provides the usage as provided by Raftelis Financial Consultants. The second  
7 tab provides the roll-up used to input the data into the Black & Veatch Financial Plan  
8 model.

9 B. This information is currently being compiled and is not available due to the shortened  
10 period allotted to compile discovery responses in this proceeding. The discovery response  
11 will be updated when the information is available.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-7.** REFERENCE PA-ADV-42. PLEASE PROVIDE A COMPLETE COPY OF THE  
2 B&V CAPACITY FACTOR ANALYSIS.

3 **RESPONSE:**

4 This information is currently being compiled and is not available due to the shortened  
5 period allotted to compile discovery responses in this proceeding. The discovery response  
6 will be updated when the information is available.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-8.** REFERENCE PA-ADV-43, 2016 STANDARD INTERNATIONAL WATER  
2 ASSOCIATION/AWWA WATER BALANCE:

- 3 A. PLEASE CONFIRM THAT FOR 2016, APPROXIMATELY 40 PERCENT  
4 OF THE WATER PRODUCED BY THE PWD WAS NON-REVENUE  
5 PRODUCING;  
6 B. PLEASE EXPLAIN WHETHER PWD OPERATES ITS SYSTEM AT  
7 REDUCED PRESSURES THROUGHOUT THE YEAR, ON PEAK DAYS,  
8 OR PEAK HOURS TO REDUCE NON-REVENUE PRODUCING WATER;  
9 AND  
10 C. PLEASE EXPLAIN IN DETAIL WHETHER NON-REVENUE  
11 PRODUCING WATER DUE TO LEAKS WOULD TEND TO INCREASE,  
12 DECREASE, OR REMAIN THE SAME DURING PEAK DAYS OR PEAK  
13 HOURS.

12 **RESPONSE:**

13 A. Confirmed, that in 2016, non-revenue water was approximately 40%.

14 B. PWD does not operate its system at reduced pressure for the purposes of reducing non-  
15 revenue water in the form of real loses. Pressure in various districts fluctuates based on storage  
16 levels and water consumption.

17 C. If the peak day or peak hour is caused by a transmission main break, which we continue to  
18 utilize the transmission line to ensure that there are no backflow issues, non-revenue producing  
19 water would increase. Peak days and peak hours can be caused by a large number of  
20 breaks/leaks as experienced this winter.

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28 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department



1 **PA-VII-9.** REFERENCE SCHEDULE BV-E4. PLEASE EXPLAIN HOW EACH OF THE  
2 CALCULATED CHARGES (BUSINESS AND NON-BUSINESS HOURS)  
3 CHARGES REFLECTED ON THIS SCHEDULE WERE DETERMINED.  
4 INCLUDE SUPPORTING CALCULATIONS, DOCUMENTATION, AND  
5 WORKPAPER.

6 **RESPONSE:**

7 These schedules were developed as part of the Miscellaneous Fee Study, which was  
8 previously provided in response to PA-III-10.pdf. The methodology is explained on pages  
9 1 and 2 with detailed calculations provided in the accompanying Miscellaneous Fee Study  
10 Workpapers.

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27 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC  
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1 **PA-VII-10.** REFERENCE THE RESPONSE TO PA-II-7. PLEASE EXPLAIN WHY THE  
2 VOLUME OF WATER DELIVERED TO THE WATER TREATMENT  
3 PLANTS TYPICALLY EXCEEDS THE OUTPUT OF THE PLANTS ON AN  
4 HOURLY BASIS, AND IN TOTAL FOR THE MONTH.

5 **RESPONSE:**

6 The water delivered to the plants is the flow just prior to treatment. The output of the plants is  
7 the flow of water “after finished water storage.” These amounts differ because the data does  
8 not take into account increases / decreases in raw water and finished water storage at the plants  
9 or in the conveyance system. The hourly variations are most evident in the overnight hours  
10 when district consumption is lower but the plants are refilling storage basins that were  
11 diminished during waking hours.

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13 The output of the plant will always be lower than the volume delivered because the plants use  
14 treated water, drawn off prior to leaving the plant, to process incoming raw water. Treated  
15 water is used to backwash the filters, mix, dilute and dose chemicals, provide for continuous  
16 sampling, carry out various process operations, and for facility cleaning and sanitary use.

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28 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department

1 **PA-VII-11.** REFERENCE THE RESPONSE TO PA-II-8. PLEASE:

2 A. UPDATE THE RESPONSE FOR FY 2017; AND

3 B. RECONCILE THE RESPONSE WITH THE DATA PROVIDED IN  
4 ATTACHMENT PA-II-7.

5 **RESPONSE:**

6 A. The following response provides an updated response to PA-II-8 for FY 2017.

7  
8 The maximum day demands experienced and relied upon for the development of the  
9 maximum day extra capacity allocation factors is based on the system maximum day raw  
10 water pumping data.

| <b>Fiscal Year</b> | <b>Average Day</b> | <b>Maximum Day</b> | <b>Maximum Day to<br/>Average Day Ratio</b> |
|--------------------|--------------------|--------------------|---|
| 2012               | 257.9 mgd          | 362.7 mgd          | 1.41  |
| 2013               | 259.8 mgd          | 338.6 mgd          | 1.30  |
| 2014               | 260.1 mgd          | 343.5 mgd          | 1.32  |
| 2015               | 250.9 mgd          | 305.3 mgd          | 1.22  |
| 2016               | 243.2 mgd          | 276.8 mgd          | 1.14  |
| 2017               | 242.4 mgd          | 315.1 mgd          | 1.30  |
| Peak Flow          |                    |                    | 1.41  |
| USE                |                    |                    | 1.40  |

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22 The maximum hour demands experienced and relied upon for the development of the  
23 maximum hour extra capacity allocation factors are based on the system maximum hour water  
24 production data.  
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| <b>Fiscal Year</b> | <b>Average Day</b> | <b>Maximum Day</b> | <b>Maximum Hour</b> | <b>Maximum Day to Average Day Ratio</b> | <b>Maximum Hour to Average Day Ratio</b> |
|--------------------|--------------------|--------------------|---------------------|---|--|
| 2012               | 245.8 mgd          | 292.0 mgd          | 370.4 mgd           | 1.19                                    | 1.51                                     |
| 2013               | 244.5 mgd          | 286.2 mgd          | 365.0 mgd           | 1.17                                    | 1.49                                     |
| 2014               | 250.0 mgd          | 313.6 mgd          | 433.8 mgd           | 1.25                                    | 1.74                                     |
| 2015               | 230.8 mgd          | 291.8 mgd          | 365.5 mgd           | 1.26                                    | 1.58                                     |
| 2016               | 223.8 mgd          | 258.2 mgd          | 430.8 mgd           | 1.15                                    | 1.92                                     |
| 2017               | 223.0 mgd          | 263.8 mgd          | 402.5 mgd           | 1.18                                    | 1.80                                     |
| Peak Flow          |                    |                    |                     | 1.26                                    | 1.92                                     |
| USE                |                    |                    |                     | 1.25                                    | 1.90                                     |

B. Attachment PA-II-7 reflects the data for the month of July 2017, which is related to FY 2018 and will not reconcile with the response to PA-VII-11(A) presented above, which provides data through Fiscal Year 2017.

**RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-12.** REFERENCE THE RESPONSE TO PA-ADV-43.

2 A. PLEASE EXPLAIN HOW “LEAKAGE ON MAINS” AND “LEAKAGE ON  
3 SERVICE CONNECTIONS UP TO THE POINT OF CUSTOMER  
4 METERING” QUANTITIES ARE DETERMINED; AND

5 B. PLEASE DESCRIBE IN DETAIL PWD’S EFFORTS TO REDUCE  
6 SERVICE CONNECTION LEAKS.

7 **RESPONSE:**

8 A. PWD utilizes the methodology described in the AWWA’s M36 guidance manual to  
9 estimate these forms of leakage. This methodology takes into account average system  
10 pressure, and data related to main breaks and leakage detection.

11  
12 B. Please see the details below regarding PWD’s efforts to reduce service connection leaks.

- 13 • PWD requires and inspects service line expansion loops which reduce the likelihood of  
14 a service line connection failure. The loop allows for slight movement (expansion and  
15 contraction) of the line without causing stress at the connection,
- 16 • PWD regulates the depth for installation of the service line through the Philadelphia  
17 Plumbing Code. Requiring the service line to be below the frost line protects the  
18 service line from the freezing and thawing activities that cause pipes to crack and fail.
- 19 • PWD installs ferrules and connections so that we have better control over workmanship  
20 and materials at this critical connection,
- 21 • PWD regulates the materials and construction of service lines to ensure they are up to  
22 Code and durable.

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28 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department

1 **PA-VII-13.** PLEASE IDENTIFY THE NUMBER OF SERVICE LINES ASSOCIATED  
2 WITH SERVICE TO EACH CUSTOMER CLASS INCLUDED IN THE WATER  
3 COST OF SERVICE STUDY.

4 **RESPONSE:**

5 Other than Private Fire Service accounts, the number of service lines is not used in  
6 association with the cost of service study, rather the number of actively billed metered  
7 accounts is utilized. The number of water accounts is provided in PWD Exhibit 6 on Page  
8 92.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-14.** REFERENCE THE RESPONSE TO PA-II-23. PLEASE PROVIDE AN  
2 ESTIMATE OF THE BUDGETED COSTS FOR THE LAB COSTS AT EACH  
3 WATER TREATMENT PLANT.

4 **RESPONSE:**

5 Bureau of Lab Services costs are not budgeted at the water treatment plant level. Cost of  
6 service allocations for treatment including lab expenses are not plant specific.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

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**PA-VII-15.** REFERENCE PWD STATEMENT NO. 9A, PAGE 59, LINES 15-24. PLEASE RECONCILE THE MAXIMUM DAY AND HOUR PERCENTAGES IDENTIFIED THERE WITH THOSE REFLECTED AS “USE” IN THE RESPONSE TO PA-II-8.

**RESPONSE:**

This information is currently being compiled. The discovery response will be updated when the information is available.

**RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC



1 **PA-VII-16.** REFERENCE ATTACHMENT PA-II-7. PLEASE EXPLAIN WHETHER THE  
2 PLANT OUTPUT IDENTIFIED IN THE ATTACHMENT WOULD BE  
3 REFLECTIVE OF THE PWD'S USE OF ITS TREATED WATER PUMPING  
4 FACILITIES. IF NO, PLEASE PROVIDE A BREAKDOWN OF THE  
5 INVESTMENT OF PWD'S TREATED WATER PUMPING PLANTS AND  
6 BOOSTER PUMPING STATIONS IN THE DISTRIBUTION SYSTEM.

7 **RESPONSE:**

8 The plant output represents both gravity flow to some customers and pumped flow to others.  
9 The plant output is not reflective of PWD's use of its treated water pumping facilities. Treated  
10 water pumping facilities are managed and operated separate from the treatment facilities. As  
11 indicated in the response for PA-VII-10, the plant output does not take into account  
12 increases/decreases in storage at the treatment plants or out in the conveyance system.

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27 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department  
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1 **PA-VII-17.** REFERENCE PWD STATEMENT NO 9A, PAGE 67, LINE 6, AND PAGE 78,  
2 LINE 17. PLEASE RECONCILE THE DIFFERENT WATER TREATMENT  
3 PLANT SLUDGE COSTS/CREDITS.

4 **RESPONSE:**

5 The water treatment sludge cost of \$13.4 million includes the capital and operating  
6 component costs determined in the wastewater cost of service analysis (i.e. \$9.66 million  
7 in O&M Expense + \$3.77 million in Capital Expense = \$13.4 million). These costs are  
8 presented on Page 78 Line 17 and Page 79 Line 1 of PWD Statement No. 9A. Note the  
9 above \$13.4 million in the wastewater expenses are treated as an operating expense for the  
10 water system.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-18.** REFERENCE PWD STATEMENT NO. 9A, PAGE 108, LINES 19-25. PLEASE  
2 IDENTIFY THE APPROACH USED IN PROCEEDINGS SINCE 2004.

3 **RESPONSE:**

4 The approach used to redistribute infiltration/inflow costs, since 2004, as presented on  
5 Page 108, lines 19-25 of PWD Statement No. 9A and is as follows: *“the rate design for*  
6 *the current study reflects a 30 percent recovery of pumping and treatment related*  
7 *infiltration/inflow costs through the service charge and 70 percent through the volume*  
8 *charge.”*

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-19.** PLEASE IDENTIFY WHERE REVENUES AND THE APPLICABLE BILLING  
2 DETRIMENTS UNDER PROPOSED RATES FOR FYS 2019-2021 CAN BE  
3 FOUND IN FILE WCOS17\_19.XLS. IF NOT INCLUDED IN THE FILE,  
4 PLEASE PROVIDE REVENUES AND THE APPLICABLE BILLING  
5 DETRIMENTS AND PROPOSED RATES FOR FYS 2019-2021.

6 **RESPONSE:**

7 The tab entitled "Units" in WCOS17\_19.xls provides the billing determinants for Test  
8 Year FY 2019. The tab entitled "Lag Rate" provided the billing determinants for the  
9 remaining years under Table "Lag Rate-3". Note - The same determinants are used for  
10 revenue under existing rates and revenue under proposed rates.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-20.** REFERENCE TABLE W-18. PLEASE EXPLAIN WHY THE PWD IS  
2 PROPOSING TO CHANGE THE CURRENT SERVICE CHARGES IN THIS  
3 CASE AND IN EACH OF THE FOLLOWING TWO YEARS WHEN KEEPING  
4 THE CURRENT SERVICE CHARGES IN PLACE WOULD BE  
5 ADMINISTRATIVELY LESS BURDENSOME, REDUCE CUSTOMER  
6 CONFUSION, AND RECOVER APPROXIMATELY THE SAME AMOUNT  
7 OF REVENUE THROUGH CUSTOMER CHARGES OVER THE PERIOD FYS  
8 2019-2021.

9 **RESPONSE:**

10 The proposed service charges are being adjusted to better reflect cost of service. The two  
11 primary factors impacting the distribution of cost of service associated with services  
12 charges are as follows:

- 13 1. Revised distribution of plant investment – The distribution of the FY 2017 plant  
14 investment reflects a lower allocation of plant investment in meters due to  
15 retirements.
- 16 2. Revised cost recovery for public fire protection – The cost of public fire protection  
17 is proposed to be recovered via water service charges beginning in FY 2019.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-21.** PLEASE EXPLAIN WHAT TYPE OF CUSTOMERS ARE GENERALLY  
2 HAND BILLED?

3 **RESPONSE:**

4 Surcharge and Industrial Waste accounts.  
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28 **RESPONSE PROVIDED BY:** Michelle Bethel, Water Revenue Bureau

1 **PA-VII-22.** PLEASE IDENTIFY THE EXTENT TO WHICH STORMWATER  
2 COLLECTED IN THE STORMWATER CONVEYANCE SYSTEM IS  
3 TREATED AT ONE OF PWD'S WASTEWATER TREATMENT FACILITIES.  
4 PROVIDE AN ESTIMATE OF THESE VOLUMES AND EXPLAIN HOW  
5 THESE VOLUMES ARE REFLECTED IN THE WASTEWATER COST OF  
6 SERVICE STUDY.

7 **RESPONSE:**

8 Stormwater collected in the separate stormwater conveyance system is not treated at  
9 PWD's wastewater treatment facilities. There are no costs associated with stormwater  
10 treatment at the wastewater treatment facilities for the separate stormwater collection  
11 system.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-VII-23.** REFERENCE TABLE WW-16. PLEASE EXPLAIN WHY THE  
2 WASTEWATER COST OF SERVICE STUDY INCLUDES METERING  
3 COSTS, AND HOW THE METERING COSTS WERE DETERMINED  
4 (ALLOCATED).

5 **RESPONSE:**

6 The allocation of metering costs was previously explained in response to PA-II-18. Meter  
7 investment capital costs and O&M expenses are assigned to the Customer functional cost  
8 center and then allocated between water and wastewater systems based upon the number  
9 of customer bills. Once allocated to wastewater, these costs are allocated entirely to  
10 sanitary sewer.

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12 Wastewater receives an allocation of metering costs because sanitary sewer customers are  
13 billed based upon their respective water consumption.

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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC