

RESPONSE TO
PUBLIC ADVOCATE'S INTERROGATORIES (SET IV)
AND
REQUESTS FOR PRODUCTION OF DOCUMENTS
QUESTIONS 1-38

Dated: March 2023

1 **PA-IV-1.** REFERENCE PWD STATEMENT 7, PAGE 14, LINE 21 THROUGH PAGE 15,
2 LINE 6. PLEASE PROVIDE EVIDENCE THAT VICINITY IS BUILDING ITS
3 OWN FACILITY AND THAT THE FACILITY WILL BE OPERATIONAL BY
4 FEBRUARY 2024.

5
6 **RESPONSE:**

7 Please see response attachment PA-IV-1. To the best of our knowledge, the facility is
8 already operational.

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10 **RESPONSE PROVIDED BY:** Philadelphia Water Department

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1 **PA-IV-2.** FOR EACH OF THE COMPANY'S WHOLESALE WASTE WATER
2 CUSTOMERS, PLEASE PROVIDE COPIES OF THE PROVISIONS OF EACH
3 CONTRACT THAT IDENTIFY THE CURRENT RATES AND PWD'S
4 ABILITY TO ADJUST THOSE RATES. ALSO EXPLAIN HOW PWD
5 ENSURES THAT EACH WHOLESALE CUSTOMER'S RATES ARE
6 SUFFICIENT TO RECOVER THE COSTS ASSOCIATED WITH SERVICE TO
7 EACH CUSTOMER.

8
9 **RESPONSE:**

10 Please see response attachment PA-IV-2.

11
12 The Council of the City of Philadelphia by Ordinance, Bill No. 1129, approved by the
13 Mayor on May 27, 1987, authorized the Water Commissioner to enter into agreements for
14 the sale of Wastewater Treatment Services to suburban communities. Provisions for
15 updating rates are established under Exhibit A of Bill No. 1129.

16
17 PWD has historically updated all wholesale customer rates to reflect the most current cost
18 of service study following a rate determination. The same cost of service study used to
19 establish retail rates is utilized in updating wholesale rates and charges based upon the
20 overall revenue requirements of the system.

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22 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-3.** REFERENCE PWD STATEMENT 7, PAGE 15, LINES 14-24. PLEASE
2 PROVIDE A COPY OF THE LONG-TERM CONTRACT PLAN, AND ALL
3 WORKPAPERS, CALCULATIONS AND DOCUMENTATION SUPPORTING
4 THE 1.9 % IDENTIFIED ON LINE 20, AND THE \$2.9 MILLION IDENTIFIED
5 ON LINE 23.

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7 **RESPONSE:**

8 Preparation of this response is in progress and will be provided in the future.

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10 **RESPONSE PROVIDED BY:** Philadelphia Water Department

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1 **PA-IV-4.** REFERENCE STATEMENT NO. 7, Q/A 12. PLEASE PROVIDE A COMPLETE
2 COPY OF THE ANALYSIS SUPPORTING THE DEVELOPMENT OF STEP 1:
3 THE PROJECTIONS OF GROSS BILLINGS IN EXCEL FORMAT WITH ALL
4 FORMULAS INTACT.

5
6 **RESPONSE:**

7 The Excel version of projected gross billings is included in the models provided to the
8 Public Advocate and presented in PWD Exhibit 6. The workpapers for projected gross
9 billings are also provided in PWD Exhibit-6: Finplan23_24, Customer Worksheet. Refer
10 to Customer-7 for projected gross water billings, Customer-15 for projected gross sewer
11 billings, and Customer-38 for projected stormwater billings. All gross billings are
12 presented in the context of existing rates.

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14 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-5.** REFERENCE STATEMENT NO. 2A, Q/A 27. PLEASE PROVIDE A
2 COMPLETE COPY OF THE ANALYSIS SUPPORTING THE CHANGE IN
3 THE STORMWATER MANAGEMENT SERVICE CREDIT AND THE
4 STORMWATER MANAGEMENT FEE IN LIEU OF CHARGES.

5
6 **RESPONSE:**

7 The analysis supporting the proposed changes to the Stormwater Credit Application Fee
8 and the Renewal the Stormwater Management Fee in Lieu is provided in Appendix A of
9 Schedule BV-4: WP-4, "Miscellaneous Fees Methodology." Please refer to page 104 of
10 the above Appendix regarding the Stormwater Management Fee in Lieu.

11
12 **RESPONSE PROVIDED BY:** Philadelphia Water Department and Black & Veatch Management
13 Consulting, LLC.

1 **PA-IV-6.** PLEASE IDENTIFY THE IMPACT OF STORMWATER CREDITS ON TOTAL
2 RESIDENTIAL, AND NON-RESIDENTIAL GA AND IA FROM THOSE USED
3 TO SET RATES IN THE TWO PRIOR CASES.
4

5 **RESPONSE:**

6 The table below provides the impact of stormwater credits on total residential, non-
7 residential, and condominium GA and IA. The credit amount reflects the reduction in the
8 billable units of service used to set rates in the two prior General Rate proceedings.
9

10 **Total Impact of Credits on Billable Stormwater Units of Service**

		FY 2018 Rate Proceeding		FY 2021 Rate Proceeding	
Line	Description	FY 2019	FY 2020	FY 2022	FY 2023
	No.				
1	Impervious Area (SF)	108,341,119	115,721,711	115,807,882	121,775,789
2	Gross Area (SF)	352,820,378	372,241,706	357,324,556	371,584,613

18 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-7.** PLEASE IDENTIFY EACH STORMWATER CREDIT GA AND IA
2 ADJUSTMENT AUTHORIZED FOR THE LAST THREE YEARS. IDENTIFY
3 FOR EACH ADJUSTMENT, THE CUSTOMER'S GA AND IA BEFORE THE
4 ADJUSTMENT AND AFTER THE ADJUSTMENT.

5
6 **RESPONSE:**

7 Please see response attachment PA-IV-7.

8
9 The workbook includes a summary of all of the credit applications, based upon PWD
10 records, that are applicable for Fiscal Year 2020 through Fiscal Year 2022 and the associated
11 area and credit information by parcel. Many parcels have multiple credit applications during
12 the above period primarily due to renewals, so such parcels have multiple entries in the
13 workbook.

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15 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-8.** REFERENCE TABLE W-10:

2 A. PLEASE PROVIDE A DETAILED BREAKDOWN OF LINE ITEMS 3, 7,
3 AND 10 (OTHER); AND

4 B. PLEASE PROVIDE A REPRESENTATION EXAMPLE OF THE
5 INVOICES FOR PURCHASED POWER EXPENSES.

6
7 **RESPONSE:**

8 A. Please note that the current rate filing does not include a Table W-10. This response
9 assumes that the question intends to reference Lines 3, 7 and 11 of Table 4-5 from
10 Schedule BV-2.

11
12 A detailed breakdown of Line item 3, Raw Water Pumping – Other operation and
13 maintenance expenses, is presented in the WCOS model provided to the Public
14 Advocate and PWD Exhibit-6: Black & Veatch Management Consulting, LLC,
15 Calculations Supporting Schedules BV-1 and BV-2, WCOS Womallo-14, Line 4
16 (Raw Water Power & Pumping - Baxter Treatment Plant - All Other Costs) and Line
17 8 (Raw Water Power & Pumping – All Other Treatment Plants - All Other Costs). The
18 O&M expenses allocated to the Raw Water Pumping – Other function include a
19 proportionate share of the Operations Division load control, machine shop and
20 materials management units, and a proportionate share of Water Fund administrative
21 and general costs.

22
23 A detailed breakdown for Line item 7, Purification and Treatment – Power and
24 Pumping – Other expenses, is presented in the WCOS model provided to the Public
25 Advocate and PWD Exhibit-6: Black & Veatch Management Consulting, LLC,
26 Calculations Supporting Schedules BV-1 and BV-2, WCOS Womallo-14, Line 26
27 (Treatment – Treated Water Power & Pumping - Baxter Treatment Plant - L.S. - All
28 Other Costs) and Line 30 (Treatment - Treated Water Power & Pumping - All Other

1 Pumping - All Other Costs). The O&M expenses allocated to the Purification and
2 Treatment - Power and Pumping - Other function include a proportionate share of the
3 Operations Division load control, machine shop and materials management units, and
4 a proportionate share of Water Fund administrative and general costs.

5
6 A detailed breakdown for Line item 11, Purification and Treatment - Treatment -
7 Other expenses, is presented in the WCOS model provided to the Public Advocate and
8 PWD Exhibit-6: Black & Veatch Management Consulting, LLC, Calculations
9 Supporting Schedules BV-1 and BV-2, WCOS Womallo-14, Line 15 (Treatment -
10 Purification - Baxter Treatment Plant - All Other Costs) and Line 21 (Treatment -
11 Purification - All Other Treatment Plants - All Other Costs). The O&M expenses
12 allocated to the Purification and Treatment - Treatment - Other function include the
13 Operation Division treatment plant and treatment headquarters costs, proportionate
14 share of the Operations Division machine shop and materials management unit, and a
15 proportionate share of Water Fund administrative and general costs.

16
17 Note - the same allocation process for the above referenced costs was utilized in and
18 is consistent with prior rate proceedings.

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20 B. Attachment PA-IV-8 provides a representative sample of the invoices for purchased
21 power expenses.

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23 **RESPONSE PROVIDED BY:** Philadelphia Water Department and Black & Veatch
24 Management Consulting, LLC.

1 **PA-IV-9.** REFERENCE TABLE WW-14. PLEASE EXPLAIN HOW THE
2 PERCENTAGES IN FOOTNOTE (A) WERE DETERMINED. PROVIDE
3 SUPPORTING WORKPAPERS AND CALCULATIONS.
4

5 **RESPONSE:**

6 Please note that the current rate filing does not include a Table WW-14. This response
7 assumes that the question intends to reference Table 7-18 from Schedule BV-2.
8

9 The percentages in Footnote (A) of Table 7-18 are based on the ratio of average dry weather
10 flow to average wet weather flow, and are consistent with analogous percentages used in
11 prior rate proceedings (PWD Statement 7, Schedule BV-2, page 7-40).
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13 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-10.** PLEASE EXPLAIN IN DETAIL ANY CHANGES IN THE WATER,
2 WASTEWATER, AND STORMWATER COST ALLOCATION AND RATE
3 DESIGN METHODOLOGIES PROPOSED BY THE PWD SINCE THE LAST
4 PROCEEDING.

5
6 **RESPONSE:**

7 There are no significant changes in the retail cost allocation and rate design methodologies
8 since the last proceeding. Note that the response to Question 13 in PWD Statement 7, Direct
9 Testimony of Black & Veatch (page 15), identifies a revision to the allocation of LTCPU
10 related costs to wholesale customers. Refer to the response to PA-III-19 and PA-IV-3 for
11 additional information regarding the revised wholesale LTCPU allocations.

12
13 Note the following reference:

- 14 • PWD Statement 7, response to Question 8 (page 6) – “the analysis and methodology
15 used in this COS Study are consistent with that used in analogous studies performed
16 by Black & Veatch in support of prior PWD rate proceedings.”

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18 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-11.** PLEASE EXPLAIN IN DETAIL THE BASIS FOR ANY CHANGES IN THE
2 WATER CUSTOMER CLASS MAXIMUM DAY AND MAXIMUM HOUR
3 DEMAND FACTORS COMPARED TO THE LAST PROCEEDING.
4

5 **RESPONSE:**

6 As noted in Section 4.5.2 of Schedule BV-2 on Page 4-9, the customer type extra capacity
7 factors from previous cost of service studies and rate proceedings were used. Based on the
8 following factors, Black & Veatch continued to utilize the results of the capacity factor
9 analysis performed for the prior rate proceeding:

- 10 • The FY 2018 system peak maximum day to average day ratio of 1.39 is consistent
11 with the historical peak maximum day to average day ratio of 1.40 reflected in the
12 capacity factor analysis from prior rate proceedings.
- 13 • A high-level review of the FY 2018 monthly billing data by customer type revealed
14 that the maximum month for some customer types was impacted by a change in the
15 number of bills issued during the monthly billing period, which resulted in
16 overstating the maximum month to average day ratio of the corresponding customer
17 types. Therefore, we do not feel it is appropriate to use FY 2018 in the context of
18 this analysis.
- 19 • Feedback provided by participants during the Alternative Rate Structure suggested
20 that PWD should further evaluate the customer impacts of potential rate structure
21 changes related to further adjustments with respect to the current declining block
22 rate structure for water usage. Therefore, additional adjustments were not included
23 as part of this rate proposal.

24
25 The prior capacity factor analysis was completed according to the methodology outlined in
26 Appendix A of AWWA Manual M-1: Principles of Water Rates, Fees, and Charges.
27 Accordingly, at the time of the analysis, Black & Veatch used the monthly customer billing
28

1 data, and system historical peak demands, and weekly and hourly usage adjustments to
2 derive an estimate of capacity factors for each customer type.

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

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1 **PA-IV-12.** FOR EACH OF THE PAST FIVE FISCAL YEARS, PLEASE PROVIDE FOR
2 THE WATER SYSTEM:

- 3 A. SYSTEM AVERAGE DAY PRODUCTION;
4 B. SYSTEM MAXIMUM DAY PRODUCTION; AND
5 C. SYSTEM MAXIMUM HOUR PRODUCTION.
6

7 **RESPONSE:**

8 System Average Day and Maximum Day Production reflect the Total Water Treatment
9 Plant Output presented in the WCOS model provided to the Public Advocate and PWD
10 Exhibit-6: Black & Veatch Management Consulting, LLC, Calculations Supporting
11 Schedules BV-1 and BV-2 WCOS23_24, Wpltallo Worksheet (page 844).
12

13 System Maximum Hour is recorded based on the Total System Water Delivered (Total
14 Districts) presented in PWD Exhibit-6: Black & Veatch Management Consulting, LLC,
15 Calculations Supporting Schedules BV-1 and BV-2, WCOS23_24, Wpltallo Worksheet
16 (page 845). Note that the Maximum Hour Demand Factors are based on the Total System
17 Water Delivered (Total Districts) presented in PWD Exhibit-6: Black & Veatch
18 Management Consulting, LLC, Calculations Supporting Schedules BV-1 and BV-2,
19 WCOS23_24, Wpltallo Worksheet (page 845).
20

21 **A. SYSTEM AVERAGE DAY PRODUCTION**

22 FY 2017 – 222.2 MGD

23 FY 2018 – 222.6 MGD

24 FY 2019 – 221.8 MGD

25 FY 2020 – 220.3 MGD

26 FY 2021 – 226.6 MGD

27 DRAFT FY 2022 – 226.7 MGD
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1 B. SYSTEM MAXIMUM DAY PRODUCTION; AND

2 FY 2017 – 268.2 MGD

3 FY 2018 – 303.9 MGD

4 FY 2019 – 258.1 MGD

5 FY 2020 – 259.7 MGD

6 FY 2021 – 251.7 MGD

7 DRAFT FY 2022 – 257.9 MGD

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9 C. SYSTEM MAXIMUM HOUR PRODUCTION

10 FY 2017 – 402.5 MGD

11 FY 2018 – 346.0 MGD

12 FY 2019 – 330.9 MGD

13 FY 2020 – 326.0 MGD

14 FY 2021 – 472.7 MGD

15 DRAFT FY 2022 – 371.6 MGD

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17 MGD = Millions of gallons per day

18
19 FY 2022 production data was not available at the time of the development of the Cost of
20 Service Study included in Schedule BV-2. The FY 2022 figures above are being finalized
21 and should be considered draft at this time.

22
23 **RESPONSE PROVIDED BY:** Philadelphia Water Department and Black & Veatch
24 Management Consulting, LLC.

1 **PA-IV-13.** PLEASE PROVIDE A COPY OF PWD'S MOST RECENT LONG-TERM
2 WATER SUPPLY PLAN.
3

4 **RESPONSE:**

5 An overview of the plan is available via the following link:

6 https://www.phila.gov/water/wu/Documents/PWD_DrinkingWaterMasterPlan.pdf
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8 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-14.** PLEASE PROVIDE AN ESTIMATE OF THE QUANTITY OF WATER USED
2 FOR PUBLIC FIREFIGHTING FOR EACH OF THE LAST THREE YEARS.
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4 **RESPONSE:**

5 The Department does not have an estimate on the quantity of water used for firefighting
6 purposes for each of the last 3 years. However, for purposes of water accountability, an
7 estimate of 55MG/year is currently being used.
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9 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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PA-IV-15. FOR EACH CUSTOMER CLASS REFLECTED IN THE WATER CLASS COST OF SERVICE STUDY, PLEASE PROVIDE MONTHLY SALES FOR THE MOST RECENT 36-MONTH AVAILABLE IN EXCEL FORMAT.

RESPONSE:

Please refer to response attachment PA-IV-15.

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

1 **PA-IV-16.** PLEASE EXPLAIN IN DETAIL HOW THE MAXIMUM DAY AND
2 MAXIMUM HOUR CAPACITY FACTOR FOR EACH CLASS IN THE
3 WATER CLASS COST OF SERVICE STUDY WAS DETERMINED
4 (INCLUDING PUBLIC AND PRIVATE FIRE). INCLUDE SUPPORTING
5 CALCULATIONS IN EXCEL FORMAT.

6

7 **RESPONSE:**

8 Refer to Section 4.5.2 of Schedule BV-2 on Page 4-9 and response to PA-IV-11.

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

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1 **PA-IV-17.** PLEASE IDENTIFY THE ANNUAL QUANTITIES OF NON-REVENUE
2 WATER BY TYPE FOR THE MOST RECENT THREE-YEAR PERIOD
3 AVAILABLE. ALSO, IDENTIFY ANNUAL WATER PRODUCTION FOR
4 THE SAME FIVE ANNUAL PERIODS.

5
6 **RESPONSE:**

7 Response attachment response PA-IV-17 is the standard International Water Association /
8 AWWA water balance for the Department for the last five years with key definitions. A
9 detailed description of the water balance can be found in the AWWA M36 Manual.

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11 FY 2022 data is not available at the time.

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13 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-18.** SINCE ITS LAST CASE, HAS THE PWD CONDUCTED A
2 COMPREHENSIVE HOLISTIC REVIEW OF ITS RATE STRUCTURE FOR
3 WATER SERVICE UNDER WHICH SEPARATE RATE SCHEDULES WERE
4 CONSIDERED FOR CERTAIN CUSTOMER CLASSES? IF NO, WHY NOT?
5 IF YES, PLEASE DESCRIBE THIS REVIEW IN DETAIL AND PRESENT ALL
6 RESULTS AND FINDINGS OF THE REVIEW.
7

8 **RESPONSE:**

9 PWD continues to review its rate structure. The Department recognizes that a
10 comprehensive review of the current rate structure and analysis of alternative ratemaking
11 methodologies is a lengthy and ongoing process.
12

13 Prior to the 2020 General Rate Proceeding, the Department completed an Alternative Rate
14 Structure Analysis, a facilitated process to consider changes to its rate structure in three
15 areas: water quantity charges, stormwater credits and incentives, and recovery of pension-
16 related expenses. The Alternative Rate Structure Analysis Report, dated November 6,
17 2019 (the “Report”) is available on the Water, Sewer and Storm Water Rate Board’s
18 website:

19 [https://www.phila.gov/media/20191122181318/ARSG-Summary-Report-Final-](https://www.phila.gov/media/20191122181318/ARSG-Summary-Report-Final-2019.11.05.pdf)
20 [2019.11.05.pdf](https://www.phila.gov/media/20191122181318/ARSG-Summary-Report-Final-2019.11.05.pdf)
21

22 As noted on page 8 of the Report: “the City’s existing billing system has many limitations
23 and in particular, concerning billing by customer type. Prior to implementing any rates by
24 customer type, the Department would need to address these limitations and verify all
25 customer types.”
26

27 Since the issuance of the Report, the Department has continued to examine updates to the
28 stormwater rates structure as summarized in the Rate Case Settlement Monthly Report

1 (dated February 24, 2023) filed with the Philadelphia Water, Sewer and Storm Water Rate
2 Board (“Rate Board”). This Report is available at the Rate Board Website.

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4 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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PA-IV-19. PLEASE PROVIDE AN ESTIMATE OF THE REVENUE REDUCTIONS RESULTING FROM STORMWATER CREDITS FOR THE LAST FIVE FISCAL YEARS. INCLUDE SUPPORTING CALCULATIONS.

RESPONSE:

FOR THE FISCAL YEARS ENDED JUNE 30, 2022, 2021 AND 2020

Program	Program Type	FY2022	FY2021	FY2020	FY 2019	FY 2018
SMP ⁽¹⁾ and GARP ^{(2) (3)}	Operating Expense	17,322,111	8,419,131	18,216,460	30,433,976	\$21,484,429
Phase in Program (CAP) ⁽⁴⁾	Bill Reduction	1,081,778	1,405,875	1,722,703	2,003,238	2,011,096
Stormwater Credits ⁽⁴⁾	Bill Reduction	20,596,053	19,699,865	18,740,626	17,988,320	16,038,856
Community Gardens	Bill Reduction	211	437	1,478	9,966	14,320
Tiered Assistance Program (TAP) ⁽⁵⁾	Bill Reduction	8,525,312	9,464,471	8,934,216	8,992,124	2,927,221
Charity & School Discounts	Bill Reduction	7,071,055	6,464,986	7,295,493	10,393,514	
Senior Citizen Discount	Bill Reduction	4,215,019	4,251,353	4,317,094	4,300,459	
Total		\$58,811,539	\$49,706,118	\$59,228,070	\$74,121,597	\$42,475,922

(*) Budgeted.

⁽¹⁾ Stormwater Management Incentives Program.

⁽²⁾ Grant and Greened Acres Retrofit Program.

⁽³⁾ SMP and GARP were partially funded with grants.

⁽⁴⁾ Amounts are credits against certain customers' bills.

⁽⁵⁾ TAP is a low-income assistance program commenced in July of 2017. It will reduce customers' bills and result in a reduction in revenue for the Water Department.

RESPONSE PROVIDED BY: Philadelphia Water Department

1 **PA-IV-20.** PLEASE PROVIDE A COPY OF ANY STUDIES PERFORMED BY PWD
2 THAT EVALUATE THE EXTENT TO WHICH THE STORMWATER CREDIT
3 PROGRAM HAS REDUCED STORMWATER VOLUMES.
4

5 **RESPONSE:**

6 After reasonable investigation, no studies have been identified that capture the information
7 requested.
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9 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-21.** REFERENCE SCHEDULE BV-3. PLEASE PROVIDE THE WORKPAPERS
2 AND CALCULATIONS SUPPORTING EACH NEWLY CALCULATED
3 CHARGE.

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5 **RESPONSE:**

6 The workpapers supporting Schedule BV-3 are provided in Appendix A of Schedule
7 BV-4: WP-4 entitled "Miscellaneous Fees Methodology."

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

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1 **PA-IV-22.** WHAT IS THE POPULATION OF PWD'S WATER SERVICE TERRITORY?
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3 **RESPONSE:**

4 As noted on page 3 of PWD Statement 1, the population served by the water system is
5 approximately 1.58 million people according to the 2021 U.S. Census Bureau estimate.
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7 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-23.** REFERENCE BV-1, TABLE W-10. PLEASE IDENTIFY BY LINE-ITEM
2 NUMBER, THE COSTS ASSOCIATED WITH WATER QUALITY TESTING
3 REFLECTED IN TEST YEAR O&M EXPENSE.
4

5 **RESPONSE:**

6 Please note that the current rate filing does not include a Table W-10. This response
7 assumes that the question intends to reference Table 4-5 from Schedule BV-2.
8

9 The estimated FY 2024 costs of the Bureau of Laboratory Services (BLS) are included in
10 the following line items in Table 4-5.

Line No.	Description	FY 2024 Costs
3	Raw Water Pumping – Other	\$275,223
7	Purification & Treatment – Power & Pumping – Other	\$513,835
11	Purification & Treatment – Other – Other	\$2,478,279
15	Mains	\$2,740,247
16	Meters	\$119,184
17	Fire Hydrants	\$25,699
18	Filtered Water Storage	\$399,654
20	Customer Accounting & Collection	\$519,080
22	Administrative & General	\$1,435,802
	Total	\$8,507,003

23
24 Note: The Allocation of the FY 2024 BLS costs is presented in the WCOS model provided
25 to the Public Advocate and PWD Exhibit-6: Supplemental, Financial, Engineering, and
26 Other Data Black & Veatch Workpapers WCOS23_24, Womallo-14, Column 7 (page
27 868-869).
28

1 There are additional water quality testing costs included in Line 8 (Purification &
2 Treatment – Treatment – Other) of Table 4-5 which are associated with the labs located at
3 each of the water treatment plants. The budgeted costs for each water treatment plant
4 include the lab costs at each plant. At this time, the costs for these labs are not readily
5 identifiable as there is not a specific cost center or unit within the treatment plant budgets
6 to isolate these lab costs.

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8 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-24.** PLEASE IDENTIFY THE FREQUENCY WITH WHICH PWD PERFORMS
2 EACH WATER QUANTITY TEST AND THE CRITERIA WHICH
3 DETERMINE HOW FREQUENTLY EACH WATER QUALITY TEST
4 SHOULD BE PERFORMED (I.E., DAILY WEEKLY PRODUCTION
5 QUANTITY, ETC.).
6

7 **RESPONSE:**

8 The PWD does not have any information on water quantity tests. For purposes of this
9 response, we have assumed that information related to “water quality tests” is elicited in
10 the discovery request.
11

12 PWD’s monitoring schedules for drinking water quality are determined by Federal and
13 State regulatory requirements under the Safe Drinking Water Act (SDWA). The
14 Pennsylvania Department of Environmental Protection (Pa DEP) issues a monitoring
15 schedule for PWD annually and provides periodic updates to the schedule throughout each
16 year. PWD goes beyond regulatory requirements and conducts more testing than is
17 required by the regulations. Tests are conducted on daily, weekly, monthly, quarterly,
18 annual, triennial, and other frequency schedules to maintain compliance with monitoring
19 requirements under the following SDWA rules: Total Coliform Rule,
20 Disinfectants/Disinfection Byproducts Rule, Chemical Contaminants Rules, Lead and
21 Copper Rule, Surface Water Treatment Rule, Radionuclides Rule and other regulatory
22 programs.
23

24 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-25.** IN THE WASTEWATER COST OF SERVICE STUDY, PLEASE EXPLAIN
2 HOW THE COSTS ASSOCIATED WITH I/I ARE ALLOCATED TO EACH
3 CUSTOMER TYPE.
4

5 **RESPONSE:**

6 In accordance with the prior rate proceeding decisions, the cost of service and rate design
7 for the current study reflects a 30 percent recovery of pumping and treatment related I/I
8 costs through the service charge and 70 percent through the volume charge (PWD
9 Statement 7, Schedule BV-2, pages 7-35 to 7-36). Costs are allocated to customer types
10 based upon the respective units of service.
11

12 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-26.** IN REFERENCE BV-1, TABLE W-10:

- 2 A. PLEASE IDENTIFY LABOR EXPENSE BY LINE ITEM;
- 3 B. PLEASE IDENTIFY THE EXTENT TO WHICH TREATMENT PLANT
- 4 LABOR EXPENSE WOULD INCREASE ON A MAXIMUM DAY TO AN
- 5 AMOUNT HIGHER THAN THAT EXPERIENCED ON AN AVERAGE
- 6 DAY; AND
- 7 C. PLEASE PROVIDE A DETAILED BREAKDOWN OF LINE NUMBER 29
- 8 BY CUSTOMER CLASS.

9

10 **RESPONSE:**

11 Please note that the current rate filing does not include a Table W-10. This response

12 assumes that the question intends to reference Table 4-5 from Schedule BV-2.

- 13
- 14 A. Estimated FY 2024 direct labor expenses are included in the following line items in
- 15 Table 4-5.

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Line No.	Description	FY 2024 Costs
3	Raw Water Pumping – Other	\$2,547,175
7	Purification & Treatment – Power & Pumping – Other	\$4,755,507
11	Purification & Treatment – Other – Other	\$22,672,078
15	Mains	\$29,950,585
16	Meters	\$1,315,771
17	Fire Hydrants	\$280,888
18	Filtered Water Storage	\$4,368,170
20	Customer Accounting & Collection	\$1,730,208
22	Administrative & General	\$0
	Total	\$67,620,382

1 Note: The Allocation of the FY 2024 direct personnel costs is presented on PWD
2 Exhibit-6: Black & Veatch Management Consulting, LLC, Calculations Supporting
3 Schedules BV-1 and BV-2 WCOS23_24, Womallo-12, Column 9 (pages 865 and
4 866).

- 5
6 B. Black & Veatch is not aware of any available staffing or labor analysis which would
7 identify the extent to which treatment plant labor expense would increase on a
8 maximum day to an amount higher than that experienced on an average day.

9
10 It should be noted that the allocation basis for water treatment labor expense
11 reflected in the current cost of service study is consistent with the AWWA's
12 "Principles of Water Rates, Fees, and Charges" Manual of Water Supply Practices
13 M1. As indicated on pages 66-67 of the manual: "Expenses other than power,
14 chemical, and customer-related costs can be allocated to cost components on the
15 basis of operating considerations or the design capacity requirements of each
16 facility." The allocation basis for the water treatment labor expense in the current
17 cost of service study reflects the maximum day demand, which is consistent with the
18 design capacity requirement and operating basis of PWD's water treatment facilities.

- 19
20 C. Please refer to Response Attachment PA-IV-26C. A detailed breakdown of Line
21 Number 29 of Table 4-5 by customer type can be developed by multiplying each
22 customer type's units of service for each functional cost component (provided in
23 Table 4-4 on page 4-11 of Schedule BV-2) by the Operating Expense unit costs of
24 service by component (provided on Line 4 of Table 4-9 on page 4-22 of Schedule
25 BV-2).

26
27 Note this provides the breakdown of the Net O&M Expense included in the Total
28 Allocated Cost of Service by customer type as presented in Column 1 of Table 4-11

1 on page 4-24 of Schedule BV-2. The resulting breakdown of Net O&M Expense is
2 prior to adjustments for the recovery of discounts.
3

4 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-27.** REFERENCE THE NOVEMBER 2022 RATE CASE SETTLEMENT
2 PROGRESS REPORT PROVIDED TO THE PHILADELPHIA WATER,
3 SEWER, AND STORM WATER RATE BOARD ON DECEMBER 13, 2022,
4 APPENDIX A.

5 A. PLEASE PROVIDE A SUMMARY OF THE RESULTS OF THE SURVEY
6 INCLUDED ON PAGES 30-33;

7 B. WITH RESPECT TO THE TWO RESIDENTIAL RATE STRUCTURE
8 OPTIONS PRESENTED ON PAGE 24, PLEASE IDENTIFY THE
9 ESTIMATED INCREMENTAL COSTS ASSOCIATED WITH
10 IMPLEMENTING EACH OPTION, AND THE ANNUAL
11 INCREMENTAL COSTS ASSOCIATED WITH MAINTAINING EACH
12 OPTION OVER THE CURRENT BILLING PROCEDURES;

13 C. ALSO, PER PAGE 24, PLEASE IDENTIFY THE ESTIMATED NUMBER
14 OF APARTMENTS, ROW HOMES, SINGLES, AND TWINS THAT
15 WOULD FALL UNDER EACH OF THE 1A AND GA TIERS UNDER
16 OPTION #2; AND

17 D. PLEASE IDENTIFY THE AMOUNT OF TIME PWD BELIEVES WOULD
18 BE NECESSARY TO IMPLEMENT EACH OF THE TWO OPTIONS
19 PRESENTED ON PAGE 24.
20

21 **RESPONSE:**

22 A. Please refer to Response Attachment PA-IV-27.
23

24 B. As stated in the subject Progress Report, as noted during the prior stakeholder
25 meeting, updates to the Residential rate structure would be predicated on ongoing
26 updates to the Office of Property Assessment (OPA) database, upon which
27 stormwater classifications are based. Additionally, Billing System Software
28 upgrades would be required to enable alternatives.

1 Estimates of implementation and annual incremental costs are not available at this
2 time.

3
4 Basis2 is a limiting factor in updating potential rate structures as the billing system
5 is currently undergoing system hardening related to cyber security, and major
6 changes to the billing system are not able to be undertaken at this time. As
7 discussed during the stakeholder meetings, the City is currently in the process of
8 replacing accounting, procurement, and financial systems City-wide. Following
9 this update to the City systems, the replacement of Basis2 system is planned to
10 begin in FY 2026 with a target completion date of FY 2028.

11
12 Please note that the integration of the necessary system requirements, associated
13 specifications, billing process and related customer billing data, required for either
14 option, could be incorporated into the development of the Basis2 replacement.
15 This also provides the potential for improved integration and tracking via the
16 City's updated financial and accounting systems.

17
18 For both options, changes to the existing PWD stormwater billing database would
19 be required. Additional effort would be required to maintain both options and
20 included developing routine updates to the requisite impervious area data utilized
21 in establishing rates and charges under both options. Further, the Basis2 system
22 replacement would need to be designed to enable billing under either option and
23 allow for the presentation of customer designations under the selected residential
24 stormwater rate structure option.

25
26 With respect to Option 1: Establish Residential Rates by Building Type, would
27 require the establishment and ongoing maintenance of building class types are
28 outside of the control of the PWD. This information is established by OPA and the

1 PWD would need to rely on the accuracy of the OPA data for implementation.
2 Further, OPA is currently undergoing a restructuring process of their data
3 management system, which PWD relies on for customer information including
4 billing classes. An understanding of the data maintenance requirements on both
5 OPA's and PWD's parts would be necessary to develop costs estimates for
6 incremental annual costs.

7
8 Beyond the above, OPA data is used to identify customers as residential, non-
9 residential, or condominium parcels, further validation of OPA's data will be
10 required to confirm the correct building designation of the roughly 464,000 parcels
11 contemplated under Option 1.

12
13 The change in rate structure would also necessitate additional discussion with
14 stakeholders along with public education and outreach to communicate any
15 pending change in stormwater residential rate structure.

16
17 C. See table below for the count of building type parcels by GA and IA tier.

Tiers	Building Type	IA	GA
Low	Apartments	1,994	977
	Row Homes	199,189	191,661
	Singles	1,093	252
	Twins	9,401	1,359
	Total	211,677	194,249
Mid 1	Apartments	8,753	3,997
	Row Homes	144,278	136,383
	Singles	5,510	914
	Twins	43,829	13,540
	Total	202,370	154,834

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Mid 2	Apartments	3,207	8,057
	Row Homes	5,058	19,026
	Singles	9,492	2,438
	Twins	14,650	44,113
	Total	32,407	73,634
High	Apartments	651	1,574
	Row Homes	1,077	2,532
	Singles	12,039	24,530
	Twins	3,069	11,937
	Total	16,836	40,573

D. Please see response to Item B above. Implementation of the updated rate structure option is predicated on updates to the OPA data systems as well as the replacement of Basis2. PWD estimates that required updates to the Stormwater Billing Database would require at least 24-36 months to complete and test prior to launch. This effort should be aligned with the replacement of the Basis2 system.

RESPONSE PROVIDED BY: Philadelphia Water Department, Water Revenue Bureau, and Black & Veatch Management Consulting, LLC.

1 **PA-IV-28.** REFERENCE PWD STATEMENT 7, Q/A27 AND 28. PLEASE EXPLAIN WHY
2 THE PWD COULD NOT OR DID NOT PROPOSE TO IMPLEMENT THE
3 DESCRIBED CHANGES IN THIS PROCEEDING.
4

5 **RESPONSE:**

6 Please refer to response PA-IV-27. PWD has not proposed any changes as they require
7 additional discussions with stakeholders and changes to the residential rate structure
8 cannot be implemented within the requested rate period.
9

10 **RESPONSE PROVIDED BY:** Philadelphia Water Department and Water Revenue Bureau,
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1 **PA-IV-29.** REFERENCE PWD STATEMENT 7, Q/A32. PLEASE PROVIDE THE
2 ANALYSIS SUPPORTING THE CHANGES IN EACH FEE.

3
4 **RESPONSE:**

5 Please refer to Schedule BV-4: WP-4 MISCELLANEOUS FEES METHODOLOGY
6 including the workpapers included in Appendix A.

7
8 Also see response attachment PA-II-19.

9
10 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.

1 **PA-IV-30.** REFERENCE PWD STATEMENT 7, Q/A34. PLEASE PROVIDE THE
2 ANALYSIS SUPPORTING THE CALCULATIONS OF EACH NEW FEE.
3

4 **RESPONSE:**

5 Please see response to PA-IV-29 and response attachment PA-II-19.
6

7 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
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1 **PA-IV-31.** PLEASE PROVIDE AN ESTIMATE OF THE ANNUAL COSTS INCURRED
2 BY THE PWD TO MANAGE AND IMPLEMENT THE STORMWATER
3 MANAGEMENT CREDIT PROGRAM BY TYPE, INCLUDING COSTS FOR
4 CONSTRUCTION OF FACILITIES FOR FY 2020 – FY 2022. SEPARATELY
5 IDENTIFY AMOUNTS FOR WHICH THE PWD WAS DIRECTLY
6 RESPONSIBLE AND AMOUNTS OFFSET OR FUNDED BY OTHER
7 SOURCES.

8
9 **RESPONSE:**

10 Implementation costs associated with the Stormwater Management Credit Program for the
11 noted fiscal years are included in the Department’s overall budget and included in the GSI
12 Implementation Unit of the Planning and Environmental Services Division. The overall
13 GSI Implementation Unit costs are allocated to 100% to wastewater and allocated under
14 conveyance maintenance costs with 40% allocated to sanitary and 60% to stormwater.
15 The stormwater credit program itself does not result in the construction of facilities.

16
17 Stormwater credits resulting from private stormwater management or activities meeting
18 the requirements of Section 4.5 SWMS Credits of PWD Rates and Charges are not a
19 capital or an operating expense. Stormwater credits result in a reduction in certain
20 customer bills and therefore reduce revenue for the Water Department. In context of the
21 cost of service study, credits are expressed as a reduction in the billable stormwater units
22 of service as discussed in PWD Statement 7, Schedule BV-2: Water & Wastewater Cost of
23 Service Report and further explained in Schedule BV-4: WP-2 – Stormwater Units of
24 Service. Estimated contra revenue impacts associated with providing credits were
25 previously presented in responses PA-IV-19.

26
27
28 **RESPONSE PROVIDED BY:** Philadelphia Water Department

1 **PA-IV-32.** PLEASE IDENTIFY THE AMOUNTS INCLUDED IN THE STORMWATER
2 REVENUE REQUIREMENT FOR TEST YEAR 2024 FOR THE
3 STORMWATER MANAGEMENT CREDIT PROGRAM BY TYPE, AND
4 INDICATE WHERE THOSE COSTS ARE INCLUDED IN THE
5 STORMWATER COST OF SERVICE STUDY. SEPARATELY IDENTIFY
6 AMOUNTS FOR WHICH THE PWD WILL BE DIRECTLY RESPONSIBLE
7 AND AMOUNTS OFFSET OR FUNDED BY OTHER SOURCES.

8
9 **RESPONSE:**

10 Administrative costs associated with the Stormwater Management Credit Program
11 included in the Department’s overall budget and included in the GSI Implementation Unit
12 of the Planning and Environmental Services Division. The overall GSI Implementation
13 Unit costs are allocated to 100% to wastewater and allocated under conveyance
14 maintenance costs with 40% allocated to sanitary and 60% to stormwater. This process
15 described in the Cost of Service study (see PWD Statement 7, Schedule BV-2: Water &
16 Wastewater Cost of Service Report) following the projection of overall revenue
17 requirements. These costs are not isolated by “Type.”

18
19 Other than the overall miscellaneous and wholesale customer revenues, which reduce the
20 overall net wastewater revenue requirements, there are no amounts offset or funded by
21 other sources included in the Test Year 2024 revenue requirements. Stormwater credits
22 provided to customers are treated as a reduction in the billable units of service, as
23 described in the Cost of Service study noted above and further elaborated upon in the
24 Stormwater Units of Service white paper (see PWD Statement 7, Schedule BV-4:WP-2
25 Stormwater Units of Service).

26
27 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC.
28

1 **PA-IV-33.** PLEASE PROVIDE AN ESTIMATE OF THE ANNUAL COSTS ASSOCIATED
2 WITH THE GREEN ACRES RETROFIT PROGRAM BY TYPE FOR FY 2020 –
3 FY 2022. SEPARATELY IDENTIFY AMOUNTS FOR WHICH THE PWD
4 WAS DIRECTLY RESPONSIBLE AND AMOUNTS OFFSET OR FUNDED BY
5 OTHER SOURCES.

6
7 **RESPONSE:**

8 See table below for an estimate of associated costs:

9

FISCAL YEAR	PWD OPERATING COST (SMIP/GARP GRANTS INCLUDING PIDC ADMIN EXPENSE)	ACT 13 GRANT	ASSOCIATED CREDITS
2020	\$25,000,000	\$859,675	\$2,390,900
2021	\$31,932,618	\$669,086	\$2,591,000
2022	\$20,125,000	\$464,078	\$3,200,900

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16 The above amounts are inclusive of all grant types (SMIP and GARP). The PWD is directly
17 responsible for funding associated with these grants through the department's operating budget.

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19 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-34.** PLEASE IDENTIFY THE AMOUNTS INCLUDED IN THE STORMWATER
2 REVENUE REQUIREMENT FOR TEST YEAR 2024 FOR THE GREEN
3 ACRES RETROFIT PROGRAM BY TYPE, AND INDICATE WHERE THOSE
4 COSTS ARE INCLUDED IN THE STORMWATER COST OF SERVICE
5 STUDY. SEPARATELY IDENTIFY AMOUNTS FOR WHICH THE PWD
6 WILL BE DIRECTLY RESPONSIBLE AND AMOUNTS OFFSET OR
7 FUNDED BY OTHER SOURCES.

8
9 **RESPONSE:**

10 The Water Department proposed to temporarily reduce the combined SMIP/GARP cost
11 from \$25.0 million to \$20.0 million in FY 2024 and FY 2025. SMIP/GARP costs, which
12 include both grant amounts and Philadelphia Industrial Development Corporation
13 administration costs, are allocated between the sewer and stormwater revenue
14 requirements. Approximately 60% of these costs are recovered from all stormwater
15 customers. This process described in the Cost of Service study (see PWD Statement 7,
16 Schedule BV-2: Water & Wastewater Cost of Service Report) following the projection of
17 overall revenue requirements. These costs are not isolated by “Type.”

18
19 With respect to the Cost of Service Study, SMIP/GARP Costs are presented on Line 6 of
20 Table 3-2 in Schedule BV-2 (note the same table is presented in Schedule BV-1: Table C-
21 6). SMIP/GARP costs are reflected in the O&M expenses on Line 3 of Table 7-16. Column
22 4 includes the Sanitary Sewer System allocation of SMIP/GARP costs, while Column 5
23 includes the Stormwater System allocation of SMIP/GARP costs.

24
25 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-IV-35.** PLEASE PROVIDE AN ESTIMATE OF THE ANNUAL COSTS ASSOCIATED
2 WITH GREEN CITY CLEAN WATERS BY TYPE FOR FY 2020 – FY 2022.
3 SEPARATELY IDENTIFY AMOUNTS FOR WHICH THE PWD WAS
4 DIRECTLY RESPONSIBLE AND AMOUNTS OFFSET OR FUNDED BY
5 OTHER SOURCES.

6
7 **RESPONSE:**

8 From July 1, 2011 through and including June 30, 2022, the Water Department’s capital
9 spending for COA projects was approximately \$318 million. During the same period, the
10 Water Department spent \$416 million from its operating budget and \$6.6 million was
11 funded through Act 13 Marcellus Shale Grant.

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13 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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1 **PA-IV-36.** PLEASE IDENTIFY THE AMOUNTS INCLUDED IN THE STORMWATER
2 REVENUE REQUIREMENT FOR TEST YEAR 2024 FOR GREEN CITY
3 CLEAN WATERS BY TYPE, AND INDICATE WHERE THOSE COSTS ARE
4 INCLUDED IN THE STORMWATER COST OF SERVICE STUDY.
5 SEPARATELY IDENTIFY AMOUNTS FOR WHICH THE PWD WILL BE
6 DIRECTLY RESPONSIBLE AND AMOUNTS OFFSET OR FUNDED BY
7 OTHER SOURCES.

8
9 **RESPONSE:**

10 Consistent with prior rate proceedings, Green City Clean Waters costs are not isolated
11 within the Cost of Service Study. Operating and capital revenue requirements are
12 allocated as described in the Cost of Service study (see PWD Statement 7, Schedule BV-2:
13 Water & Wastewater Cost of Service Report) following the projection of overall revenue
14 requirements. Further, these costs are not isolated by “Type.”

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16 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-IV-37.** PLEASE PROVIDE A COMPARISON OF REVENUES AT PRESENT RATES
2 AND AT PROPOSED RATES FOR EACH RATE CLASS INCLUDED IN THE
3 COST OF SERVICE STUDIES FOR WATER, WASTEWATER, AND STORM
4 WATER SERVICE. INCLUDE THE SUPPORTING CALCULATIONS FOR
5 PROPOSED REVENUES IN EXCEL FORMAT WITH ALL FORMULAS
6 INTACT.

7
8 **RESPONSE:**

9 See response attachment PA-IV-37 which provides the FY 2024 and FY 2025 projected
10 revenue under existing and proposed rates. These results are developed with the model
11 file (Finplan23_24.xlsx) previously provided to the Public Advocate, utilizing the
12 projected revenue under existing rates sections and revising the rates to reflect the
13 proposed rate schedules.

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15 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-IV-38.** PLEASE DESCRIBE EACH OF THE PROGRAMS CURRENTLY IN PLACE
2 DESIGNED TO REDUCE RESIDENTIAL STORM WATER VOLUMES.
3 IDENTIFY THE NUMBER OF CUSTOMERS PARTICIPATING IN EACH
4 PROGRAM AND THE ESTIMATED ANNUAL REDUCTION IN STORM
5 WATER VOLUMES ACHIEVED UNDER EACH PROGRAM. ALSO
6 IDENTIFY THE ANNUAL COSTS ASSOCIATED WITH EACH PROGRAM
7 AND EXPLAIN HOW THE PROGRAM IS FUNDED.

8
9 **RESPONSE:**

10 Preparation of this response is in progress and will be provided in the future.
11

12 **RESPONSE PROVIDED BY:** Philadelphia Water Department
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