


COMMONWEALTH OF PENNSYLVANIA



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August 26, 2021

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission

v.

Pittsburgh Water and Sewer Authority
Docket Nos. R-2021-3024773 (Water)
C-2021-3025473 (Water)
R-2021-3024774 (Wastewater)
C-2021-3025471 (Wastewater)
R-2021-3024779 (Stormwater)
C-2021-3025474 (Stormwater)

Dear Secretary Chiavetta:

Consistent with 52 Pa. Code Section 5.412a of the Commission's regulations, which requires the electronic submission of pre-served testimony, and the Post-Hearing Order and Errata issued on August 17, 2021 and on August 18, 2021, enclosed for electronic filing please find the following Pre-Served Testimony and Exhibits on behalf of the Office of Consumer Advocate ("OCA") in the above-referenced proceedings. Please note that the documents listed below were admitted into the record at the evidentiary hearing conducted on August 13, 2021.

Office of Consumer Advocate's Direct Testimony

- OCA Statement 1 - Direct Testimony of Dante Mugrace – Schedules DM-1 through DM-20
- OCA Statement 2 - Direct Testimony of David S. Habr – Exhibits DSH-1 through DSH-5
- OCA Statement 3 - Direct Testimony of Scott J. Rubin – Appendix A and Schedules SJR-1 through SJR-7
- OCA Statement 4 - Direct Testimony of Roger D. Colton – Appendix A
- OCA Statement 5 - REVISED Direct Testimony of Barbara R. Alexander – Exhibits BA-1 through BA-3
- OCA Statement 6 - Direct Testimony of Terry L. Fought – Appendix A and Exhibits TLF-1 through TLF-8
- OCA Statement 7 - Direct Testimony of Morgan N. DeAngelo – Appendix A

Rosemary Chiavetta, Secretary
August 26, 2021
Page 2

Office of Consumer Advocate's Rebuttal Testimony

OCA Statement 3R -- Rebuttal Testimony of Scott J. Rubin – Schedules SJR-8 through SJR-10
OCA Statement 4R -- Rebuttal Testimony of Roger D. Colton

Office of Consumer Advocate's Surrebuttal Testimony

OCA Statement 1SR -- Surrebuttal Testimony of Dante Mugrace
OCA Statement 2SR -- Surrebuttal Testimony of David S. Habr
OCA Statement 3SR -- Surrebuttal Testimony of Scott J. Rubin
OCA Statement 4SR -- Surrebuttal Testimony of Roger D. Colton
OCA Statement 5SR -- Surrebuttal Testimony of Barbara R. Alexander
OCA Statement 6SR -- Surrebuttal Testimony of Terry L. Fought
OCA Statement 7SR -- Surrebuttal Testimony of Morgan N. DeAngelo

All testimony is accompanied by a witness verification. The OCA's submission also addresses the requirements of the Commission's January 10, 2013 Implementation Order at Docket M-2012-2331973, which requires electronic access to pre-served testimony.

All parties and the presiding officer have been served previously with the testimony and exhibits and copies have been served per the attached Certificate of Service.

Respectfully submitted,

/s/ Lauren E. Guerra
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Enclosures:

cc: The Honorable Eranda Vero (**email only**)
Certificate of Service

*316448

CERTIFICATE OF SERVICE

Re: Pennsylvania Public Utility Commission : Docket Nos. R-2021-3024773 (Water)
: C-2021-3025473 (Water)
v. : R-2021-3024774 (Wastewater)
: C-2021-3025471 (Wastewater)
: R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority : C-2021-3025474 (Stormwater)

I hereby certify that I have this day served a true copy of the following document, the Office of Consumer Advocate's Pre-Served Testimony and Exhibits, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 26th day of August 2021.

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Fax: (717) 783-7152
Dated: August 26, 2021
*316447

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission, <i>et al</i>	:	R-2021-3024773
	:	C-2021-3025473
v.	:	C-2021-3025516
	:	
Pittsburgh Water and Sewer Authority - Water	:	

Pennsylvania Public Utility Commission, <i>et al</i>	:	R-2021-3024774
	:	C-2021-3025471
v.	:	C-2021-3025517
	:	
Pittsburgh Water and Sewer Authority - Wastewater:	:	

Pennsylvania Public Utility Commission, <i>et al</i>	:	R-2021-3024779
	:	C-2021-3025474
v.	:	C-2021-3025521
	:	
Pittsburgh Water and Sewer Authority - Stormwater:	:	

POST-HEARING ORDER

Admitting Evidence Introduced
at Evidentiary Hearing

On April 13, 2021, Pittsburgh Water and Sewer Authority (“PWSA”) filed with the Pennsylvania Public Utility Commission: (1) a water base rate case at Docket No. R-2021-3024773; (2) a wastewater base rate case at Docket No. R-2021-3024774; (3) a stormwater base rate case at Docket No. R-2021-3024779, (4) a Petition for Waiver of Statutory Definition of Fully Projected Future Test Year; and (5) a Petition for Consolidation of Water, Wastewater, and Stormwater Rate Proceedings and For Authorization to Use Combined Water, Wastewater, and Stormwater Revenue Requirements.

Pursuant to the Rate Filing, PWSA is asking the Commission for approval to increase its combined water, wastewater and stormwater rates by \$32.2 million, to be phased-in in 2022 and 2023. In particular, PWSA's Supplement No. 7 to Tariff Water – Pa. P.U.C. No. 1 proposes a rate increase that would increase PWSA's total annual operating revenues for water service by approximately \$12.6 million, or 10%, through rates effective January 12, 2022, and by approximately \$12.9 million, or 9.3%, through rates effective January 12, 2023. Next, PWSA's Supplement No. 6 Tariff Wastewater - Pa. P.U.C. No. 1 proposes a rate decrease that will reduce PWSA's total annual operating revenues for wastewater service by approximately \$7.8 million, or 10.6%, through rates effective January 12, 2022, and by approximately \$7.5 million, or 11.4%, through rates effective January 12, 2023. Finally, PWSA filed Tariff Storm Water - Pa. P.U.C. No. 1 proposing a rate increase that will raise PWSA's total annual operating revenues for stormwater service by approximately \$17.8 million through rates effective January 12, 2022, and by approximately \$5.9 million, through rates effective January 12, 2023.

On August 13, 2021, the presiding officer conducted the evidentiary hearing. During the evidentiary hearing, various parties identified and moved to admit evidence in the form of written statements and exhibits. All parties present waived the right to cross-examine the evidence. Accordingly, the evidence was marked and admitted into the hearing record by order of the presiding officer, without objection from any party.

The presiding officer directed the parties submitting evidence to electronically file the evidence with the Commission within two weeks of the date of this Post-Hearing Order along with a cover letter which notes the admission at the evidentiary hearing on August 13, 2021, and the issuance of the Post-Hearing Order.

AND NOW, having received evidence into the hearing record from PWSA, the statutory advocates and other active parties on August 13, 2021, without an objection; and

FURTHER, because the admitted evidence must be included in the hearing record for this proceeding; and

FURTHER, because no further hearing is to be scheduled in this proceeding.

THEREFORE,

IT IS ORDERED:

1. That all parties which sponsored and moved for the admission of the evidence at the evidentiary hearing conducted on August 13, 2021, shall reference this Post-Hearing Order when filing electronically (through eFile) with the Commission all of the items listed in Appendix A, attached, within 14 days of the date of this Order.

2. That any party wishing to place evidence into the hearing record, when the evidence is marked as “Confidential”, “Highly Confidential” or “Proprietary”, shall ensure the evidence is clearly marked as “Confidential”, “Highly Confidential” or “Proprietary” and shall reference this Post-Hearing Order when electronically mailing the evidence directly to the Commission’s Secretary, Rosemary Chiavetta, for inclusion in the Commission’s hearing record in a protected file.

Date: August 17, 2021

/s/
Eranda Vero
Administrative Law Judge

Appendix A

Pittsburgh Water and Sewer

Direct Testimony (dated 4/13/21)

- PWSA St. No. 1 - Direct Testimony of William J. Pickering – Exhibits WJP-1, WJP-2
- PWSA St. No. 2 – Direct Testimony of Edward Barca – Exhibits EB-1 to EB-10
- PWSA St. No. 3 – Direct Testimony of Tom Huestis – Appendix A, TH-1 to TH-5
- PWSA St. No. 4 – Direct Testimony of Harold Smith – Exhibits HJS-1 to HJS-4, HJS-1W to HJS-19W, HJS-1WW to HJS-18WW, HJS-1SW to HJS-9SW
- PWSA St. No. 5 – Direct Testimony of Barry King – Exhibits BK-1, BK-2
- PWSA St. No. 6 – Direct Testimony of Julie Quigley – Exhibits JAQ-1 to JAQ-6
- PWSA St. No. 7 – Direct Testimony of Tony Igwe – Appendix A, Exhibits TI-1 to TI-5
- PWSA St. No. 8 – Direct Testimony of Keith Readling – Appendix A, Exhibit KR-1

Supplemental Direct Testimony (dated 6/14/21)

- PWSA St. No. 2-SD – Supplemental Direct Testimony of Edward Barca
- PWSA St. No. 5-SD – Supplemental Direct Testimony of Barry King
- PWSA St. No. 7-SD – Supplemental Direct Testimony of Tony Igwe - Exhibit TI-6
- PWSA St. No. 8-SD – Supplemental Direct Testimony of Keith Readling

Rebuttal Testimony (dated 7/29/21 and 7/30/21)

- PWSA St. No. 1-R (rev. 7/30/21)-Rebuttal Testimony of William J. Pickering – Exhibit WJP-3
- PWSA St. No. 2-R – Rebuttal Testimony of Edward Barca – Exhibits EB-11 to EB-16
- PWSA St. No. 3-R (rev. 8/4/21) - Rebuttal Testimony of Thomas F. Huestis - Exhibits TH-6, TH-7
- PWSA St. No. 4-R - Rebuttal Testimony of Harold Smith – Exhibit HJS-1-R to HJS-3-R, HJS-1W-R to HJS-19W-R, HJS-1WW-R to HJS-18WW-R, HJS-1SW-R to HJS-9SW-R
- PWSA St. No. 5-R – Rebuttal Testimony of Barry King – Exhibits BK-3
- PWSA St. No. 6-R – Rebuttal Testimony of Julie Quigley – Exhibits JAQ-7 to JAQ-11
- PWSA St. No. 7-R – Rebuttal Testimony of Tony Igwe – Exhibit TI-7
- PWSA St. No. 8-R – Rebuttal Testimony of Keith Readling

Surrebuttal Testimony (dated 8/6/21)

- PWSA St. No. 2-SR - Surrebuttal Testimony of Edward Barca

Rejoinder Testimony (dated 8/10/21)

- PWSA St. No. 2-RJ – Rejoinder Testimony of Edward Barca – Exhibits EB-17 to EB-21
- PWSA St. No. 3-RJ - Rejoinder Testimony of Thomas F. Huestis
- PWSA St. No. 5-RJ - Rejoinder Testimony of Barry King – Exhibits BK-4 to BK-6

- PWSA St. No. 6-RJ – Rejoinder Testimony of Julie A. Quigley
- PWSA St. No. 8-RJ – Rejoinder Testimony of Keith Readling Non (**PWSA**)

Bureau of Investigation and Enforcement (I&E)

Direct Testimony

- I&E St. No. 1 – Direct Testimony of Anthony Spadaccio – I&E Exhibit No. 1
- I&E St. No. 2 – Direct Testimony of D.C. Patel - I&E Exhibit No. 2
- I&E St. No. 3 – Direct Testimony of Ethan H. Cline – I&E Exhibit No. 3
- I&E St. No. 4 – Direct Testimony of Israel E. Gray – I&E Exhibit No. 4

Rebuttal Testimony

- I&E St. No. 2-R – Rebuttal Testimony of D.C. Patel

Surrebuttal Testimony

- I&E St. 1-SR – Surrebuttal Testimony of Anthony Spadaccio - I&E Exhibit No. 1-SR
- I&E St. No. 2-SR – Surrebuttal Testimony of D.C. Patel
- I&E St. No. 3-SR – Surrebuttal Testimony of Ethan H. Cline – I&E Exhibit No. 3-SR
- I&E St. No. 4-SR – Surrebuttal Testimony of Israel E. Gray – I&E Exhibit No. 4-SR
- Verification Statement of Anthony Spadaccio
- Verification Statement of D.C. Patel
- Verification Statement of Ethan H. Cline
- Verification Statement of Israel E. Gray

Office of Consumer Advocate

Direct Testimony

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- OCA St. No.3 – Direct Testimony of Scott J. Rubin – Appendix A and Schedules SJR-1 to SJR-7
- OCA St. No. 4 – Direct Testimony of Roger D. Colton – Appendix A
- OCA St. No. 5 (rev. 7/23/21) – Direct Testimony of Barbara R. Alexander – Exhibits BA-1 through BA-3
- OCA St. No. 6 – Direct Testimony of Terry L. Fought – Appendix A and Exhibits TLF-1 through TLF-8
- OCA St. No. 7 – Direct Testimony of Morgan N. DeAngelo – Appendix A

Rebuttal Testimony

- OCA St. No. 3R – Rebuttal Testimony of Scott J. Rubin – Schedules SJR-8 through SJR-10

- OCA St. No. 4R – Rebuttal Testimony of Roger D. Colton

Surrebuttal Testimony

- OCA St. No. 1SR – Surrebuttal Testimony of Dante Mugrace
- OCA St. No. 2SR – Surrebuttal Testimony of David S. Habr
- OCA St. No. 3SR – Surrebuttal Testimony of Scott J. Rubin
- OCA St. No. 4SR – Surrebuttal Testimony of Roger D. Colton
- OCA St. No. 5SR – Surrebuttal Testimony of Barbara R. Alexander
- OCA St. No. 6SR – Surrebuttal Testimony of Terry L. Fought
- OCA St. No. 7SR – Surrebuttal Testimony of Morgan N. DeAngelo

Office of Small Business Advocate

Direct Testimony

- OSBA St. No. 1 – Direct Testimony of Brian Kalcic – Exhibit BK-1 (Schedules BK-1W through BK-4W; Schedules BK-1WW through BK-4WW; Schedules BK-1SW through BK-4SW), Referenced Interrogatories, an appendix and Mr. Kalcic’s signed Verification

Rebuttal Testimony

- OSBA St. No. 1-R – Rebuttal Testimony of Brian Kalcic – Exhibit BK-1R (Schedule BK-2SW Corrected; Schedule BK-4SW Corrected; Schedule BK-4WW Corrected), Referenced Interrogatories, and Mr. Kalcic’s signed Verification

Surrebuttal Testimony

- OSBA St. No. 1-S – Surrebuttal Testimony of Brian Kalcic – Exhibit BK-1S (Schedule BK-1W-S; Schedule BK-2W-S; Schedule BK-4W-S) and Mr. Kalcic’s signed Verification

R-2021-3024773, et al. - PA PUBLIC UTILITY COMMISSION v. THE PITTSBURGH
WATER AND SEWER AUTHORITY

Revised: August 9, 2021

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**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission)	Docket Nos.
v.)	R-2021-3024773 (Water)
Pittsburgh Water and Sewer Authority)	R-2021-3024774 (Wastewater)
)	R-2021-3024779 (Stormwater)

DIRECT TESTIMONY OF

DANTE MUGRACE

**ON BEHALF OF THE
COMMONWEALTH OF PENNSYLVANIA
OFFICE OF CONSUMER ADVOCATE**

July 8, 2021

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1 **I. STATEMENT OF QUALIFICATIONS**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 **A.** My name is Dante Mugrace. My business address is 22 Brooks Avenue,
4 Gaithersburg, MD 20877.

5 **Q. WHAT IS YOUR PRESENT OCCUPATION?**

6 **A.** I am a Senior Consultant with the Economic and Management Consulting Firm
7 of PCMG and Associates, LLC. ("PCMG"). In my capacity as a Senior
8 Consultant, I am responsible for evaluating and examining rate and rate related
9 proceedings before various governmental entities, preparing expert testimony
10 recommending revenue requirement, as well as, offering opinions on economic
11 policy and policy issues and methodologies used to set a value on a utility's
12 rate base and cost of service components of revenue requirement.

13 **Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.**

14 **A.** PCMG is an association of experts in utility regulation and policy, economics,
15 accounting, and finance. PCMG's members have over 75 years of collective
16 experience providing assistance to counsel and expert testimony regarding the
17 regulation of electric, gas, water and wastewater utilities that operate under
18 local, state, and federal jurisdictions. PCMG focuses on areas regarding
19 revenue requirement, cost of service, rate design, cost of capital and rate of
20 return. Prior to my association with PCMG, I was employed as a Senior
21 Consultant with the consulting firm of Snavely King Majoros and Associates
22 ("SKM") from 2013 to 2015, in the same capacity as PCMG. Prior to SKM I
23 was employed by the New Jersey Board of Public Utilities ("NJBPU") from 1983
24 to my retirement in 2011. During my tenure at the NJBPU, I held various
25 Accounting, Rate Analyst, Supervisory and Management Positions. My last
26 position was Bureau Chief of Rates in the Agency's Water Division (Bureau
27 Chief of Rates). I held this position for nearly 10 years. My resume is attached
28 as Appendix A.

1 **Q. WHAT EXPERIENCE DO YOU HAVE IN THE AREA OF UTILITY RATE**
2 **SETTING PROCEEDINGS AND OTHER UTILITY MATTERS?**

3 **A.** In my capacity as Bureau Chief of Rates at NJBPU, I was responsible for
4 overseeing the rate process regarding administrative, financial, and managerial
5 functions of the Rates Bureau. My primary duties were to ensure that the
6 jurisdictional utilities had sufficient revenues to cover their operating expenses,
7 the ability to earn a reasonable rate of return on plant investments, and to
8 ensure that the provision of safe, adequate, and proper service at reasonable
9 rates was met. During my time at the NJBPU, I was involved in hundreds of
10 rate and rate related proceedings. In my capacity as a Senior Consultant
11 previously with SKM and now with PCMG, I have been and am currently
12 involved in rate and rate related proceedings before the Commissions in the
13 State of Hawaii, the Commonwealth of Massachusetts and Pennsylvania, and
14 the States of Maine, Maryland, New Jersey, New York, North Dakota, and Ohio.
15 I was involved in the Generic Proceedings to Establish Parameters for the Next
16 Generation Performance Based Rate Plans before the Alberta Utilities
17 Commission. I was involved in transmission formula rate plans before the
18 Federal Energy Regulatory Commission (FERC) regarding the PECO Energy
19 Company on behalf of the Pennsylvania OCA and the Rockland Electric
20 Company on behalf of the NJ Division of Rate Counsel.

21 **Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?**

22 **A.** I hold a Master of Business Administration (“MBA”) degree with a concentration
23 in Strategic Management from Pace University-Lubin School of Business in
24 New York, New York. I hold a Master of Public Administration (“MP”) degree
25 from Kean University in Union, New Jersey. I hold a Bachelor of Science (“BS”)
26 degree in Accounting from Saint Peter’s University in Jersey City, New Jersey.

27
28
29

1 for Debt Service Coverage, Roger Colton for the Arrearage Forgiveness Program,
2 and Terry Fought for Sewer Laterals (or “Services”) costs.

3 **Q. PLEASE DESCRIBE HOW PWSA DEVELOPS ITS RATE REQUEST AND ITS**
4 **OVERALL REVENUE REQUIREMENT IN THE SETTING OF RATES.**

5 **A.** As described in Mr. Barca’s testimony (PWSA St. No. 2 at 30-31) PWSA sets its
6 rates for service based upon the Cash Flow Method (“CFM”) of ratemaking. Given
7 that the Authority does not have any shareholders and does not pay a dividend or
8 a rate of return to its owner, the CFM is determined to produce just and reasonable
9 rates for municipal utilities. (PWSA St. No. 2 at 30). According to Mr. Pickering,
10 the Authority became subject to the Commission’s jurisdiction in December 2017
11 under Act 65, and on March 15, 2018, a final implementation Order was entered
12 which transitioned the Authority to the Commission’s jurisdiction. PWSA is
13 governed by a nine-member Board of Directors (“BOD”) whose members are
14 appointed by the Mayor of the City and confirmed by City Council. Given this
15 relationship, the Commission determined that PWSA’s revenue requirement
16 should be set using the CFM. (PWSA St. No. 2 at 30). The BOD is responsible for
17 providing strategic direction and oversight to the Authority’s management team, as
18 well as, adopting the Authority’s annual operating and capital budgets, approving
19 contracts and setting rates. (PWSA St. No. 1 at 25). According to Mr. Huestis, the
20 revenue requirement increase is needed to continue the Authority’s operations,
21 pay its debt service obligations, meet its legal covenants, maintain its bond ratings
22 and access the capital markets. (PWSA St. No. 3 at 4).

23 **Q. WHAT ARE THE REQUIREMENTS OF THE USE OF A FPFTY PERIOD?**

24 **A.** With the enactment of Act 11 of 2012, PWSA has based its claimed revenue
25 requirement on the fully forecasted 12 months ending December 31, 2022.
26 According to Mr. Barca, the Fully Projected Future Test Year (“FPFTY”) was
27 derived through a comprehensive budget process to develop annual budgets and
28 costs are individually considered when developing the budget (PWSA St. No. 2 at
29 15).

30 **Q. HAS THE AUTHORITY RELIED UPON OTHER PROVISIONS OF ACT 11?**

1 **A.** Yes. According to Mr. Barca, the Authority is requesting consolidation of the three
2 dockets for water, wastewater and stormwater and authority to use combined
3 water, wastewater and stormwater revenue requirements. Mr. Barca stated that
4 this consolidation will continue the prior accounting and ratemaking practice of the
5 Authority. (PWSA St. No. 2 at 14). With the filing of the stormwater tariff, the
6 Authority is proposing to determine its revenue requirement on a combined
7 water/wastewater/stormwater basis as well.

8 **Q. HAS THE AUTHORITY TAKEN INTO CONSIDERATION ITS REVENUE**
9 **REQUIREMENT PROPOSAL IN LIGHT OF THE COVID-19 PANDEMIC?**

10 **A.** Yes. The Authority has proposed to phase-in the rate increase over a two-year
11 period. As proposed, Year 1 would be a \$22 million increase and Year 2 would be
12 a \$10.2 million increase. (PWSA St. No. 1 at 6). The Authority states that it is
13 requesting a reduced rate increase due to the effects of the COVID pandemic and
14 is seeking to balance the competing priorities of limiting the rate increase for
15 ratepayers during the COVID-19 pandemic and ensuring sufficient resources to
16 continue its operations, pay its debt service obligations, meet its legal covenants,
17 and maintain its bond ratings. (PWSA St. No. 3 at 4).

18 **Q. HAS THE COVID-19 PANDEMIC CAUSED THE AUTHORITY TO CHANGE ITS**
19 **INFRASTRUCTURE PROJECTS IN 2020?**

20 **A.** No. According to Mr. Pickering, the Authority has accomplished crucial water,
21 sewer and stormwater upgrades despite construction delays due to the pandemic.
22 (PWSA St. No. 1 at 31).

23 **III. REVENUE REQUIREMENT ISSUES**

24 **A. SUMMARY**

25 **Q. WHAT ARE THE OVERALL RECOMMENDATIONS YOU ARE PROPOSING IN**
26 **THIS RATE FILING?**

27 **A.** Based upon the use of PWSA's proposed fully projected future test year (FPFTY)
28 ending December 31, 2021, I have the following recommendations:

- 1 • My recommended System Revenues are \$211,345,766, which is
2 \$21,401,379 lower than the Authority's proposed System Revenues of
3 \$232,747,145.
- 4 • My recommended Direct Operating Expenses are \$99,283,614 which is
5 \$19,633,150 lower than the Authority's proposed Direct Operating
6 Expenses of \$118,916,763.
- 7 • My recommended Other Operating Expenses are \$5,712,514, which is
8 \$639,454 lower than the Authority's proposed Other Operating
9 Expenses of \$6,351,968.
- 10 • My recommended total Debt Service Coverage is \$89,407,272, which is
11 equal to the proposed Debt Service of \$89,407,273.
- 12 • My recommended Capital Expenditures/Transfers are \$16,137,025,
13 which is \$1,877,593 lower than the Authority's proposed Capital
14 Expenditures/Transfers of \$18,014,618.
- 15 • My Senior Debt Service Coverage Ratio is 1.455, as recommended by
16 David Habr, and as compared to the Authority's proposed Senior Debt
17 Service Coverage Ratio of 1.46.¹
- 18 • My Total Debt Service Coverage Ratio is 1.18, as recommended by
19 David Habr, and as compared to the Authority's proposed Total Debt
20 Service Coverage Ratio of 1.18.
- 21 • My recommended Cash Flow projection is 134.07 days Cash on Hand
22 (DCOH), as compared to the Authority's proposed DCOH of 174.9.
- 23 • My overall recommended Revenue Requirement increase is
24 \$11,185,774 (5.59%) which is \$21,747,379 lower than the Authority's
25 proposed increase of \$32,587,153 (16.28%).²

¹ There is a slight difference in the Authority's Debt Service Coverage Ratio of 1.46 compared to the recommended Debt Service Coverage ratio of 1.455. The difference is minimal.

² I note that the Authority calculated a 17.20% increase in rates shown on the Authority's rate case press release and newspaper advertisements. (Verified Statement of Julie A. Quigley filed May 25, 2021, Attachments A and D.) The Authority refers to a 17.1% increase in the testimony of its witness Edward Barca (PWSA St. 2 at 4). I am using the cost difference between existing rates and proposed rates shown on PWSA Exhibits EB-1 and EB-2, which I calculate to be 16.28%.

1 **Q. DO YOU HAVE SCHEDULES TO REFLECT THESE RECOMMENDATIONS?**

2 **A.** Yes. Attached are Schedules DM-1 through DM-20. The schedules reflect the
3 OCA's adjustments for FPFTY 2022.

4 **B. SYSTEM REVENUE REQUIREMENT**

5 **Q. PLEASE DESCRIBE HOW THE AUTHORITY HAS DEVELOPED ITS SYSTEM**
6 **REVENUE REQUIREMENT.**

7 **A.** As shown on PWSA Exhibit EB-2, the Authority has prepared a Statement of
8 Income at Proposed Rates to calculate its overall proposed Rate Revenue
9 increase of \$32.2 million or 17.10% over existing rates. (PWSA St. No. 2 at 4).
10 The Authority has proposed an increase to its water operations of \$23.3 million, a
11 decrease to its wastewater operations of \$14.8 million and an increase to its
12 stormwater operations of \$23.7 million. Under the FY 2022 column, the Authority
13 has computed a total System Revenue Requirement of \$232.691 million. The
14 proposed base rate case increase includes the introduction of a new stormwater
15 rate and adjustments to the wastewater conveyance rates where stormwater
16 related costs are currently recovered. (PWSA St. No. 2 at 4). The breakdown of
17 this balance is the need to recover O&M Expenses of \$125.268 million, Debt
18 Service of \$89.407 million and Capital Expenditures and Transfers of \$18.014
19 million. The System Revenue Surplus is calculated at \$56,523. A breakdown by
20 utility operations is shown on PWSA Exhibit HJS-1.

21 **Q. WHAT ARE THE DRIVERS OF THE AUTHORITY'S PROPOSED REVENUE**
22 **REQUIREMENT INCREASE?**

23 **A.** As stated by Mr. Barca, the Authority is proposing the most minimal rate increase
24 necessary to continue to fund operations and to just barely satisfy its rate
25 covenants. (PWSA St. No. 2 at 4). Mr. Barca stated that the proposed rate
26 increase is attributable to funding the Capital Improvement Plan (CIP) and the
27 additional debt service costs associated with funding the CIP. Mr. Barca stated
28 that failure to obtain the additional funds in this proceeding will put the Authority at
29 extreme risk of not meeting its debt service coverage ratios since this is existing
30 debt. (PWSA St. No. 2 at 5). Mr. Barca stated that the proposed increase is

1 needed to continue to increase operations within its Operating Budget associated
2 with salaries and benefits. (PWSA St. No. 2 at 7). Mr. Barca stated that the
3 remaining revenue requirement increase proposal is attributable to inflationary
4 costs for professional services and operating contracts and water treatment plant
5 repairs within the Operating Budget. (PWSA St. No. 2 at 8). According to Mr. Barca
6 virtually the entire proposed revenue requirement increase is either a result of, or
7 directly dedicated to addressing deferred maintenance with the water, wastewater
8 and stormwater system (OCA Set II-51).

9 **Q. THIS IS THE THIRD RATE CASE PROCEEDING FILED WITH COMMISSION**
10 **SINCE 2018. GIVEN ALL THIS INVESTMENT SUBSEQUENT TO 2018, HOW**
11 **WAS THE AUTHORITY ABLE TO MAINTAIN ITS FINANCIAL POSITION PRIOR**
12 **TO THAT?**

13 **A.** According to the response to OCA Set II-54, prior to 2018 the Authority was able
14 to maintain its credit rating because the majority of the assets within the system
15 were functioning without failure or causing issues even though they were not being
16 proactively replaced or maintained. Minimal work was being completed so there
17 were no need to raise rates. This allowed the Authority to maintain (but not
18 improve) its financial metrics. The presence of high lead, deferred maintenance,
19 and poor financial performance was a direct result of the lack of investment in the
20 system. This resulted in the Authority ramping up its operations and capital
21 program starting in 2018 in order to deal with the deferred maintenance while it
22 proposed to increase rates to support the work.

23 **Q. WHAT IS YOUR RESPONSE TO THE AUTHORITY'S REASON FOR**
24 **RECEIVING ALL OF ITS REQUESTED REVENUE REQUIREMENT**
25 **INCREASE?**

26 **A.** This rate petition is a request for an additional revenue requirement increase of
27 \$32.2 million or 17.1% over current rates. Mr. Barca stated that it is imperative
28 that the Authority receive all or substantially all of its request here to avoid
29 jeopardizing ongoing operations and needed capital improvements. (PWSA
30 Statement No. 2 at 8). The Authority's request to receive all or substantially all of
31 its revenue requirement request is contrary to ratemaking principles in that the

1 Authority is not guaranteed to recover all of its requested rate increase but has the
2 opportunity to recover its costs that are known and measurable, that are prudent
3 in nature, and that are used and useful.

4 **Q. HAS THE AUTHORITY INCLUDED COSTS FOR COVID-RELATED**
5 **EXPENSES?**

6 **A.** No. The Authority was permitted by the Commission to track and record as a
7 regulatory asset all COVID-19 Pandemic costs and permitted the Authority to claim
8 these funds for ratemaking purposes in the Authority's next general rate
9 proceeding. The Authority has incurred \$1.3 million in COVID-19 related costs
10 since the start of the pandemic; however, the Authority has elected not to include
11 any of these costs as part of this rate filing due to the ongoing nature of the
12 pandemic and its decision to request the bare minimum amount of rate increase
13 needed to support its operations. (PWSA St. No. 3 at 9). In response to OCA Set
14 II-11 the Authority stated that it is not seeking recovery of COVID-19 costs as a
15 way to limit the impact on ratepayers. As I understand, the Authority is foregoing
16 recovery of these costs and cannot claim these expenses in another future rate
17 case proceeding or request to defer these costs in a future rate case proceeding.

18 **Q. WHAT FINANCIAL METRICS HAS THE AUTHORITY CALCULATED IN**
19 **SUPPORT OF ITS SYSTEM REVENUE REQUIREMENT?**

20 **A.** The Authority has determined that it requires the following Financial Metrics as
21 shown on Authority Exhibit EB-2:

- 22 • 174.9 days of cash on hand (\$59,282,330 Ending Cash Balance)
- 23 • Senior Debt Coverage of 1.46x, with a minimum 1.25x.
- 24 • Total Debt Coverage of 1.18x, with a minimum of 1.10x.

25 I will further discuss these financial metrics later on in my testimony.

26 **1. SYSTEM REVENUES**

27 **Q. WHAT HAS THE AUTHORITY PROPOSED REGARDING ITS TOTAL SYSTEM**
28 **REVENUES?**

1 **A.** As shown on PWSA Exhibit EB-2, the Authority has proposed total System
2 Revenues of \$232,747,145, broken down by the following:

3	Water Sales	\$138,338,071
4	Wastewater Sales	\$ 54,705,958
5	Stormwater Sales	\$ 23,729,641
6	Sales for Resale/Contract	\$ 3,690,132
7	DSIC Revenues	\$ 9,599,856
8	Other Revenues	\$ 1,834,521
9	Penalties and Interest	<u>\$ 848,966</u>
10	Total System Revenues	\$232,747,145

11 **Q. HOW DID THE AUTHORITY ALLOCATE THE REVENUE REQUIREMENT TO**
12 **EACH OF THE UTILITY SERVICES ABOVE?**

13 **A.** According to PWSA witness Mr. Smith, the revenue requirements were determined
14 based upon a set of allocation factors that were assigned each to the water,
15 wastewater and stormwater for the FPPTY period. (PWSA St. No. 4 at 11).

16 **Q. DO YOU HAVE ANY CHANGES TO THE AUTHORITY'S PROPOSED**
17 **ALLOCATION OF THE REVENUE REQUIREMENT BY UTILITY SERVICE?**

18 **A.** No. I am accepting the Authority's proposed allocation to each of the utility
19 services.

20 **Q. WHAT CHANGES DO YOU HAVE WITH RESPECT TO THE AUTHORITY'S**
21 **PROPOSED SYSTEM REVENUES OF \$232,747,145?**

22 **A.** My System Revenue adjustments correspond to the adjustments that I made to
23 the Authority's Direct and Other Operating Expenses which I discuss further in my
24 testimony.

25	Water Sales	\$ 125,141,552
26	Wastewater Sales	\$ 49,488,274
27	Stormwater Sales	\$ 21,449,830
28	Sales for Resale/Contract	\$ 3,690,132
29	DSIC Revenues	\$ 8,731,491
30	Other Revenues	\$ 1,834,521
31	Penalties and Interest	\$ 848,966
32	Additional Revenues	\$ 125,000
33	Arrearage Forgiveness	<u>\$ 36,000</u>
34		
35	Total System Revenues	\$ 211,345,766
36		

1 My recommended System Revenues are \$21,401,379 lower than the Authority's
2 proposed System Revenues of \$232,747,145 in the FPFTY 2022 period. This
3 adjustment is shown on my Schedule DM-2.

4 **Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO ADD \$36,000 RELATED TO**
5 **ARREARAGE FORGIVENESS?**

6 **A.** As more fully explained by OCA Witness Roger Colton (OCA St. 4), I am adding
7 \$36,000 for the arrearage forgiveness program.

8 **Q. PLEASE EXPLAIN YOUR ADDITIONAL REVENUES OF \$125,000?**

9 **A.** As recommended by OCA Witness Mr. Habr, he recommended a Debt Service
10 Coverage ratio of 1.455 (rounded to 1.46). In order to achieve this Debt Service
11 Coverage, additional revenues of \$125,000 were needed to be added to the
12 Authority's System Revenue balance.

13 **2. OPERATING EXPENSES – DIRECT**

14 **Q. WHAT HAS THE AUTHORITY PROPOSED REGARDING ITS OPERATING**
15 **EXPENSES – DIRECT?**

16 **A.** As shown on PWSA Exhibit EB-2, the Authority has proposed total Operating
17 Expenses – Direct in the amount of \$118,916,763.

18 **Q. DID THE AUTHORITY ALLOCATE THE OPERATING EXPENSES – DIRECT TO**
19 **THE WATER, WASTEWATER CONVEYANCE AND STORMWATER UTILITY**
20 **SERVICES?**

21 **A.** Yes. As stated in PWSA Mr. Smith's testimony (PWSA St. No. 5 at 5), the Authority
22 allocated and assigned these costs to each of the water, wastewater conveyance
23 and stormwater utility services as shown on PWSA Exhibit HJS-1. Mr. Smith
24 provided a summary of factors that were used to assign costs to each of the
25 services above, and as detailed in PWSA Exhibit HJS-2.

26 **Q. HOW DID THE AUTHORITY APPROACH ITS DEVELOPMENT OF ITS**
27 **OPERATING BUDGETS FOR ITS HTY, FTY AND FPFTY THAT WERE USED**
28 **TO DEVELOP THE PROPOSED REVENUE REQUIREMENT?**

1 **A.** Mr. Barca stated that the HTY data were derived from the unaudited results for FY
2 2020; the audited results are not available at this time, but Mr. Barca stated that
3 he does not anticipate material differences between the unaudited results and the
4 audited results, which should be available by late April 2021. (PWSA St. No. 2 at
5 15). As noted above, Mr. Barca stated that the FTY and the FPFTY results were
6 derived through a comprehensive Authority-wide budgeting process. The
7 Authority used a zero-based budgeting method to develop annual budgets and
8 each cost is individually considered when developing the budget. (PWSA St. No.
9 2 at 15). Mr. Barca has provided additional information concerning the budget
10 process shown on Exhibit EB-4. This Exhibit provides information regarding
11 changes in budgeting levels from the HTY to the FTY and from the FTY to the
12 FPFTY period and the FY 2023. (PWSA St. No. 2 at 17).

13 **Q. HOW DID YOU APPROACH THE DEVELOPMENT OF YOUR DIRECT**
14 **OPERATING EXPENSE ADJUSTMENTS?**

15 **A.** I reviewed the Authority's PWSA Cost of Service Study Model 2021 (PWSA COSS
16 Model 2021) and, specifically, reviewed each of the Authority's 16-line item Direct
17 Operating Expense accounts shown on PWSA Exhibit EB-2 (with the exception of
18 Procurement NARUC 914 tab, and Ops Capital Assets NARUC 900 tab to the
19 PWSA COSS Model 2021). I also reviewed the data responses submitted to the
20 Authority in OCA Set II, as well as the Authority Index to Rate Filing Package Filing
21 Requirement (Volume I). I reviewed the Bureau of I&E's data set as well. I
22 analyzed and reviewed the Authority's adjustments beginning with the HTY period,
23 through the FPFTY period, and noted and evaluated any adjustments that might
24 be escalation costs in nature, unusual or large variations from prior historical
25 periods, one-time expense items, and whether such costs included in the FTY and
26 through the FPFTY periods were abnormal adjustments, or anomalies as
27 compared to prior years adjustments. In my review, and in certain instances, I
28 utilized three-year normalizations in areas where the Authority had incurred cost
29 increases and projected or budgeted over what was incurred in prior years and
30 reviewed whether those cost increases were reasonable in nature. The use of a
31 three-year normalization is a reasonable approach in developing costs

1 adjustments, on a budgeted basis prospectively. Costs incurred from prior years
2 typically show a trend that can be utilized to set costs in the future. My
3 normalization approach increase or decreases the Authority's proposed direct
4 operation expense balances.

5 In other areas of the Authority's proposed operating expenses, I used my informed
6 judgment to recommend whether the costs should be disallowed or partially
7 allowed. This approach was based on whether there were any prior expenses
8 incurred under the 2019, the FY 2020 and the FTY 2021 periods. If no costs were
9 incurred in prior years, it is difficult to gauge or determine whether a forecasted or
10 budgeted cost proposed by the Authority was reasonable; as there was nothing
11 with which to compare the forecasted or budgeted costs. While it is expected that
12 some level of costs will be incurred in these instances, there is no basis to support
13 the specific level of costs proposed by PWSA. To determine whether proposed
14 costs are reasonable, and thus, should be allowed in rates, proposed expenditures
15 must be continuing and recurring.

16 With respect to escalation costs, the Authority stated in response to OCA-II-31 that
17 it utilized escalation factors for certain water treatment plant expenditures, sewer
18 operations, public affairs, human resources, chief executive officer and
19 engineering and construction expenditures. The Authority identified the cost
20 adjustments in each of the referenced departments, which totaled \$2,789,515. I
21 am of the opinion that inflationary costs or escalation costs should not be used for
22 ratemaking purposes or to set rates for service. Inflationary type increases do not
23 provide a good index of cost increases, but rather are overall blanket-type
24 adjustments that are typically applied to all goods and services that may not
25 directly relate to costs incurred by the Authority. It is simply a forecast or prediction
26 of cost adjustments. As costs of goods and services fluctuate over time, applying
27 escalation factors to adjust costs is not a proper approach that should be utilized
28 in setting rates for utility service.

29 Finally, with respect to Salaries and Employee Benefits, I normalized these
30 adjustments over a three-year period. The Authority has indicated that the total

1 employee count as of March 15, 2021, was 345 and it is expecting to fill 67
2 positions within the 2021 Operating Budget. (OCA Set II-23, 29 and 30). In
3 response to OCA Set II-22 the Authority provide a schedule showing a breakdown
4 of its employee groups by utility operation and through the years 2019-2022. I
5 performed an analysis and developed a ratio of total filled employee positions to
6 the number of vacant positions in each of the years 2019-2021 by employee group.
7 I compared the results to the Authority's proposed Salaries and Employee Benefits
8 as shown on the Authority's COSS Model 2021 tabs 910 through 930 under the
9 Allocated Costs for each utility (water, wastewater and stormwater). I then made
10 adjustments to the Authority's FPFTY 2022 period related to Salaries and
11 Employee Benefits. I further discuss these adjustments in each of the following
12 department categories (operating expense accounts).

13 **Q. WHAT CHANGES DO YOU HAVE WITH RESPECT TO THE AUTHORITY'S**
14 **PROPOSED DIRECT OPERATING EXPENSES OF \$118,916,763?**

15 **A.** I have made adjustments to each of the Authority's 14-line item Direct Operating
16 expense accounts. My total recommended Direct Operating Expenses are
17 \$99,283,614 or a reduction of \$19,633,150, as shown on my Schedule DM-1. I
18 will address each of these Direct Operating Expenses below.

19 **a. Executive Director - 910**

20 **Q. WHAT DID THE AUTHORITY PROPOSE WITH RESPECT TO ITS EXECUTIVE**
21 **DIRECTOR EXPENSES FOR THE FPFTY 2021?**

22 **A.** As shown on PWSA Exhibit EB-2 (Line 9) and tab 910 of the PWSA COSS Model
23 2021, the Authority proposed a FPFTY 2021 balance of \$3,055,434. This balance
24 was broken down by utility service as shown on PWSA Exhibits HJS-1 and HJS-
25 2. The Authority allocated 73.23% to the water utility, 15.35% to the wastewater
26 utility and 11.42% to the stormwater utility. This balance is comprised of Salary
27 and Benefits, O&M Expenses, Inventory and General Administrative Expenses.

28 **Q. WHAT ADJUSTMENTS DO YOU HAVE WITH RESPECT TO THE**
29 **AUTHORITY'S EXECUTIVE DIRECTOR ACCOUNT BALANCE RELATED TO**
30 **SALARY AND BENEFITS?**

1 **A.** I first reviewed the Salary and Benefits balance. The Authority proposed total
2 Salary and Benefits of \$931,327 and \$217,442, respectively. (PWSA COSS Model
3 2021 tab 910 Column X Lines 290/291, 299/300 and 308/309.) Using the three-
4 year vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I arrived
5 at a normalized vacancy level of 29.76%. The use of a three-year normalization
6 of Salary and Benefits is appropriate, given the Authority's prior years' level of
7 employee count. The Authority has not accelerated its level of employees in prior
8 years as the information in response to OCA-II-22 shows. Given that this is the
9 third rate proceeding filed with the Commission, while the Authority states that it
10 needs to support rapid growth in all staff categories and as necessary to meet its
11 regulatory compliance obligations (PWSA Statement No. 1 page 27), it appears
12 that the Authority has not increased its level of employees. Using the Authority's
13 vacancy rates provided as shown in OCA-II-22, these vacancy rates show that
14 there is a gap in filling in needed staffing levels. The year by year adjustment and
15 comparison of employee vacancies show a level of disparate and varying vacancy
16 rates over the years (2018-2020). It is unclear whether the Authority will fill all
17 vacancies as stated. Given this disparity from year to year, I adjusted the
18 Authority's proposed Executive Salary and Benefits balances of \$931,327 and
19 \$217,442, respectively, and multiplied those amounts by the vacancy ratio of
20 29.76% to arrive at an adjusted level of \$655,726 for Salaries and \$152,727 for
21 Benefits. I then multiplied these balances by the ratio of Water, Wastewater and
22 Stormwater allocations shown in the Authority's Exhibit HJS-2. This reduces the
23 balance in the Executive Director Division by \$249,410 (Water), \$52,523
24 (Wastewater) and \$38,973 (Stormwater). (Schedule DM-3).

25 **Q. WHAT ARE YOUR ADJUSTMENTS TO THE AUTHORITY'S EXECUTIVE**
26 **DIRECTOR ACCOUNT BALANCE RELATED TO O&M EXPENSES,**
27 **INVENTORY AND GENERAL ADMINISTRATIVE?**

28 **A.** I then reviewed the Authority's PWSA COSS Model tab 910 and reviewed the
29 expenses for the 2019 – 2021 FY and the FPFTY 2022. I did not make any
30 changes to the Authority's Inventory Balance or the O&M Expense balance. My
31 adjustments are to the Authority's General Administrative Balance. I made

1 adjustments to the following accounts by normalizing these costs (with the
2 exception of Contingencies, which I disallowed altogether) from 2019 through 2021
3 and compared the result to the 2022 projection:

4	Membership Fees – Account 7010	(\$6,158)
5	Advertising – Account 7305	(\$945)
6	Consultant – Account 7323	(\$100,567)
7	Contingencies – Account – 7328	(\$40,000)
8	Professional Services – Account 7383	<u>(\$130,018)</u>
9	Total	(\$277,688)

10 With respect to Membership fees, I believe normalizing these costs is appropriate
11 because the level of fees is related to the number of employees claimed by PWSA.
12 I explained above the adjustment to the number of employees that I am
13 recommending via the use of a vacancy rate. The Authority claims the increase in
14 Membership Fees is due to increased employee count. However, I believe that
15 the Authority will not have the level of employees in place and as such,
16 Membership Fees should be adjusted to correspond to the adjustment to the
17 number of employees that I recommend. With respect to Advertising, Consultants
18 and Professional Services, I believe normalizing these costs is appropriate
19 because of the disparity of costs from year to year and the varying balances in
20 each account which reflect the uncertainty of the Authority's claim of its proposed
21 balance in the FPFTY period. Finally with respect to Contingencies, I believe this
22 cost should not be included because it is an uncertain amount that may or may not
23 occur. This uncertainty is not known and measurable. I then multiplied the
24 \$277,688 adjustment by the allocation factors provided by the Authority in Exhibit
25 HJS-2 and computed a balance adjustment of \$203,351 (Water), \$42,625
26 (Wastewater), and \$31,712 (Stormwater). (Schedule DM-3).

27 **Q. WHAT OTHER ADJUSTMENT DO YOU HAVE FOR THE AUTHORITY'S**
28 **EXECUTIVE DIRECTOR?**

29 **A.** I removed the Inflation factor adjustment of \$71,000 in response to OCA Set II-31.
30 Inflationary adjustments are not known and measurable and do not provide a good

1 representation of cost adjustments. These types of adjustments are blanket or
2 general in nature and may or may not represent accurate adjustments with respect
3 to the Authority's basket of goods and services.

4 **Q. WHAT ARE YOUR TOTAL ADJUSTMENTS TO THE AUTHORITY'S**
5 **EXECUTIVE DIRECTOR EXPENSES?**

6 **A.** My total adjustment is a reduction of \$689,594 and my recommended balance is
7 \$2,365,840, shown on my Schedule DM-3.

8 **b. Customer Service - 911**

9 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS**
10 **CUSTOMER SERVICE EXPENSES FOR THE FPFTY 2021?**

11 **A.** As shown on PWSA Exhibit EB-2, Line 10 and tab 911 of the PWSA COSS Model
12 2021, the Authority proposed a FPFTY 2021 balance of \$8,787,106. This balance
13 was broken down by utility service as shown on PWSA Exhibit HJS-1 and HJS-2.
14 The Authority allocated 29.03% to the water utility, 36.46% to the wastewater utility
15 and 34.51% to the stormwater utility. These balances are comprised of Salary and
16 Benefits, O&M Expenses, Inventory and General Administrative.

17 **Q. WHAT ADJUSTMENTS DO YOU HAVE WITH RESPECT TO THE**
18 **AUTHORITY'S CUSTOMER SERVICE ACCOUNT BALANCE?**

19 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
20 proposed a total Salary and Benefits balance of \$4,066,654 and \$1,137,504,
21 respectively, shown on PWSA COSS Model tab 911 lines 290/291, 299/300 and
22 308/309. For the same reasons and consistent with my treatment of Salary and
23 Benefits for all Direct Operating Expenses, using the three-year vacancy ratios for
24 2019-2021 as shown in response to OCA Set II-22, I arrived at a normalized
25 vacancy level of 19.82%. I multiplied the Authority's proposed Customer Salary
26 and Benefits balance of \$4,066,654 and \$1,137,504, respectively, by the vacancy
27 ratio of 19.82% to arrive at an adjusted level of \$3,260,363 for Salaries and
28 \$911,972 for Benefits. I then multiplied these balances by the ratio of Water,
29 Wastewater and Stormwater allocations shown the Authority's Exhibit HJS-2. This

1 reduces the balance in the Customer Service Division by \$276,529 (Water),
2 \$363,202 (Wastewater) and \$392,093 (Stormwater). (Schedule DM-4).

3 **Q. WHAT ARE YOUR OTHER ADJUSTMENTS RELATED TO O&M EXPENSES,**
4 **INVENTORY AND GENERAL ADMINSTRATIVE?**

5 **A.** I have adjustments to the Authority's General Administrative costs only.
6 Specifically, I made an adjustment to the Authority's proposed postage expense of
7 \$569,500, which is an increase of \$60,500 over the 2021 year balance of
8 \$509,000. That is a proposed increase of 11.88% over 2021. This amount
9 appears to be excessive, and the Authority has not provided any basis for the
10 increase related to Postage. Accordingly, I am recommending 50% of the
11 proposed \$60,500 or \$30,250, be allowed for recovery. The allocated adjustments
12 are (\$8,785) Water, (\$11,029) Wastewater, and (\$10,439) Stormwater. This is
13 shown on my Schedule DM-4.

14 **Q. WHAT IS YOUR RECOMMENDATION?**

15 **A.** Based upon the above, my adjustments reduce PWSA's Customer Service costs
16 from \$8,787,106 to \$7,725,029, a reduction of \$1,062,077. This is shown on my
17 Schedule DM-4.

18 **c. Management Information Systems - 912**

19 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS**
20 **MANAGEMENT INFORMATION SYSTEMS?**

21 **A.** As shown on PWSA Exhibit – EB-2, Line 11 and tab 912 of the PWSA COSS
22 Model 2021, the Authority proposed a FPFTY balance of \$4,594,275 for its
23 Management Information Systems costs. The Authority allocated 73.23% to the
24 water utility, 15.35% to the wastewater utility and 11.42% to the stormwater utility.
25 (PWSA Exhibit HJS-1 and HJS-2).

26 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
27 **MANAGEMENT INFORMATION SYSTEMS ACCOUNT BALANCE?**

28 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
29 proposed a total Salary and Benefits balance of \$1,504,617 and \$258,096,

1 respectively, shown on PWSA COSS Model tab 912 lines 290/291, 299/300 and
2 308/309. For the same reasons and consistent with my treatment of Salary and
3 Benefits for all Direct Operating Expenses, using the three-year vacancy ratios for
4 2019-2021 as shown in response to OCA Set II-22, I arrived at a normalized
5 vacancy level of 36.19%. I then multiplied the Authority's proposed MIS Salary
6 and Benefits balance of \$1,504,617 and \$258,096, respectively, by the vacancy
7 ratio of 36.19% to arrive at an adjusted level of \$960,148 for Salaries and \$164,700
8 for Benefits. I then multiplied these balances by the ratio of Water, Wastewater
9 and Stormwater allocations shown the Authority's Exhibit HJS-2. This reduces the
10 balance in the Management Information Division by \$519,594 (Water), \$109,237
11 (Wastewater) and \$81,133 (Stormwater). (Schedule DM-5).

12 **Q. WHAT OTHER ADJUSTMENTS DO YOU HAVE WITH RESPECT TO THE**
13 **AUTHORITY'S MIS EXPENSES?**

14 **A.** I reviewed the Authority's O&M Expenses, Inventory and General Administrative
15 category and have no further adjustments. My recommended balance is an overall
16 reduction of \$709,964 and is shown on my Schedule DM-5.

17 **d. Finance – 913**

18 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS FINANCE**
19 **COSTS?**

20 **A.** As shown on PWSA Exhibit – EB-2, line 12 and tab 913 of the PWSA COSS Model
21 2021, the Authority has proposed a FPFTY balance of \$7,782,404. The Authority
22 allocated 73.23% to the water utility, 15.35% to the wastewater utility and 11.42%
23 to the stormwater utility. (PWSA Exhibit HJS-1 and HJS-2).

24 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
25 **FINANCE BALANCE FOR THE FPFTY PERIOD?**

26 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
27 proposed a total Salary and Benefits balance of \$1,860,240 and \$342,798,
28 respectively, shown on PWSA COSS Model tab 913 lines 290/291, 299/300 and
29 308/309. For the same reasons and consistent with my treatment of Salary and
30 Benefits for all Direct Operating Expenses, using the three-year vacancy ratios for

1 2019-2021 as shown in response to OCA Set II-22, I arrived at a normalized
2 vacancy level of 26.30%. I then multiplied the Authority's proposed Finance Salary
3 and Benefits balance of \$1,860,240 and \$342,798, respectively, by the vacancy
4 ratio of 26.30% to arrive at an adjusted level of \$1,371,066 for Salaries and
5 \$252,655 for Benefits. I then multiplied these balances by the ratio of Water,
6 Wastewater and Stormwater allocations shown the Authority's Exhibit HJS-2. This
7 reduces the balance in the Finance Division by \$424,061 (Water), \$88,636
8 (Wastewater) and \$66,042 (Stormwater). (Schedule DM-6).

9 **Q. WHAT ARE YOUR OTHER ADJUSTMENTS RELATED TO O&M EXPENSES,**
10 **INVENTORY AND GENERAL ADMINISTRATIVE?**

11 **A.** I am not making any adjustments related to Inventory. My adjustments related to
12 O&M Expenses and General Administrative are below.

13 **Q. WHAT ARE YOUR ADJUSTMENTS RELATED TO O&M EXPENSES?**

14 **A.** I have an adjustment related to the Authority's Vehicle Expense in Account 5190.
15 The Authority proposed a balance of \$1,500,000. In prior years, the Authority
16 expended \$0 in 2018, 0\$ in 2019, \$577 in 2020, \$750,000 in 2021 and a projected
17 balance of \$1,500,000 in 2022, the FPPTY period. In response to I&E RE-7-D, the
18 Authority stated that the increased costs were a result of purchases being shifted
19 to capital budgets to fund these purchases on a PAYGO basis. The Authority
20 further stated that it switched back to the operating budget from the capital budget
21 and the 2022 balance included anticipated increases in vehicle purchases.

22 **Q. WHAT IS YOUR RESPONSE?**

23 **A.** I am recommending a reduction of \$750,000 or a balance of \$750,000 going
24 forward. The Company did not purchase any vehicles in 2018 and 2019, (PWSA
25 COSS Model Tab 913 Account No. 5190) and very few in 2020. The Company's
26 response to I&E RE-7-D is unclear how it accounts for vehicle purchases. It is
27 speculative that the Authority will increase its vehicles purchases by \$750,000
28 (double its actual spending in 2021) when it has not done so in the past. So it is
29 reasonable to allow half of the claim, which is equal to the amount claimed for the

1 FTY 2021. I allocated this adjustment by Water – 73.23%, Wastewater – 15.35%
2 and, Stormwater – 11.42%, which is shown on my Schedule DM-6.

3 **Q. WHAT ARE YOUR ADJUSTMENTS TO THE AUTHORITY'S GENERAL**
4 **ADMINISTRATIVE COSTS?**

5 **A.** I have several adjustments. They are as follows:

6	Membership Fees (7010)	(\$4,390)
7	Office Rent (7255)	(\$593,100)
8	Consultants (7323)	\$202,397
9	Consulting Engineer (7332)	<u>(\$65,000)</u>
10	Total	(\$460,093)

11 To be consistent with normalizing Membership fees under the Executive Director's
12 Office, I am normalizing the same here. The Authority spent little dollars in prior
13 years. In response to I&E RE-15-D, the Authority stated that it is increasing
14 Membership fees to allow more PWSA employees to join professional
15 organizations. My adjustment sets Membership fees from the Authority's proposed
16 balance in 2022 of \$5,775 to \$1,385, a difference of \$4,390. The Authority has not
17 provided any other information related to increased costs of Membership fees, but
18 for the fact that it anticipates an increase to allow more employees to participate.
19 With respect to Office Rent, the Authority spent little dollars in 2019, and increased
20 this account to \$971,698 in 2020, \$912,000 in 2021 and \$1,221,000 in 2022. The
21 Authority stated that the increase in costs are anticipated for additional space
22 needed for operations. No other explanation was provided. Without any support
23 for the specific level of increase, it is more reasonable to use a level of costs that
24 reflects the Authority's actual experience. I normalized these costs to arrive at a
25 balance of \$627,899 or a reduction of \$593,100. With respect to Consultants, I
26 increased this account by \$202,397. The Authority spent \$176,577 in 2019,
27 \$2,110,615 in 2021 and anticipates spending \$780,000 in 2022. Normalizing these
28 costs would increase the Consultant spending to \$982,397. Finally, with respect
29 to Consulting Engineer, the Authority spent no dollars in 2018 and 2019, only
30 \$70,000 in 2021 and anticipated spending \$200,000 in 2022, a two-year average

1 of \$135,000. In response to I&E-RE-17-D, the Authority stated that the increase
2 in Consulting Engineer costs is due to anticipated increases in costs for Consulting
3 Engineers report; no other information was provided. By normalizing these costs,
4 I decreased the Consulting Engineer account by \$65,000.

5 **Q. WHAT ARE YOUR TOTAL ADJUSTMENTS TO GENERAL ADMINISTRATIVE?**

6 **A.** My total adjustment is a decrease of \$460,093. I allocated these adjustments to
7 Water – 73.23%, Wastewater 15.35%, and Stormwater 11.42%, which is shown
8 on my Schedule DM-6.

9 **Q. WHAT IS YOUR TOTAL ADJUSTMENT TO THE AUTHORITY'S FINANCE**
10 **COSTS?**

11 **A.** My total adjustment is a reduction of \$1,788,832, shown on my Schedule DM-6.

12 **e. Human Resources - 915**

13 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS HUMAN**
14 **RESOURCES COSTS?**

15 **A.** As shown on PWSA Exhibit EB-2, line 14, the Authority has proposed a Human
16 Resources balance of \$1,180,406 for the FPFTY period. The Authority also
17 reflected this balance in its PWSA COSS Model 2021, tab 915. The Authority
18 allocated 73.23% to the water utility, 15.35% to the wastewater utility and 11.42%
19 to the stormwater utility. (PWSA Exhibit HJS-1 and HJS-2).

20 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
21 **HUMAN RESOURCE COSTS?**

22 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
23 proposed a total Salary and Benefits balance of \$627,460 and \$121,360,
24 respectively, shown on PWSA COSS Model tab 915 lines 290/291, 299/300 and
25 308/309. For the same reasons and consistent with my treatment of Salary and
26 Benefits for all Direct Operating Expenses, and my arguments previously testified
27 to, by using the three-year vacancy ratios for 2019-2021 as shown in response to
28 OCA Set II-22, I arrived at a normalized vacancy level of 33.9%. I then multiplied
29 the Authority's proposed Human Resource Salary and Benefits balance of

1 \$627,460 and \$121,360, respectively, by the vacancy ratio of 33.9% to arrive at an
2 adjusted level of \$414,987 for Salaries and \$80,265 for Benefits. I then multiplied
3 these balances by the ratio of Water, Wastewater and Stormwater allocations
4 shown the Authority's Exhibit HJS-2. This reduces the balance in the Human
5 Resource Division by \$185,612 (Water), \$38,796 (Wastewater) and \$28,907
6 (Stormwater). (Schedule DM-7).

7 **Q. WHAT ARE YOUR REMAINING ADJUSTMENTS?**

8 **A.** My remaining adjustment is to the Authority's General Administrative costs. I do
9 not have any adjustments to the Authority's Inventory or O&M Expenses.

10 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
11 **GENERAL ADMINISTRATIVE COSTS?**

12 **A.** I have one adjustment to the Authority's Professional Services account 7383. The
13 Authority spent \$106,584 in 2019, \$36,795 in 2020 and \$107,300 in 2021. The
14 Authority is proposing a balance in this account of \$250,140. In response to I&E
15 RE-17-D, the Authority stated that the increase is due to anticipated increases in
16 services, and prior adjustments were due to increases in the SCADA upgrade and
17 additional support at the Water Treatment Plant. No other description or reasoning
18 was provided. Without any further support for the specific level of increase, it is
19 more reasonable to use a level of costs that reflects the Authority's actual
20 experience. I am normalizing these costs and setting a level of \$83,560 for the
21 FPPTY. This decreases the costs from the projected balance of \$250,140 by
22 \$166,580. I allocated this adjustment 73.23% to the Water, 15.35% to the
23 Wastewater and 11.42% to the Stormwater.

24 **Q. WHAT OTHER ADJUSTMENTS DO YOU HAVE?**

25 **A.** My last adjustment is to remove the Inflation Adjustment of \$7,070. As I stated
26 previously in my testimony, I believe that Inflation Adjustments should not be used
27 to set rates for service in ratemaking because they are not known and measurable
28 and do not provide a good representation of cost adjustments.

1 **Q. WHAT ARE YOUR TOTAL ADJUSTMENTS TO HUMAN RESOURCES?**

2 **A.** My total adjustment to Human Resources is a decrease of \$426,965 shown on my
3 Schedule DM-7.

4 **f. Legal - 916**

5 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS LEGAL**
6 **EXPENSE?**

7 **A.** As shown on PWSA Exhibit EB-2, line 15, the Authority has proposed Legal
8 Expense of \$5,910,814 for the FPFTY period. This is also shown on PWSA COSS
9 Model 2021, tab 916. The Authority allocated 72.23% to the water utility, 15.35%
10 to the wastewater utility and 11.42% to the stormwater utility (PWSA Exhibit HJS-
11 1 and HJS-2).

12 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
13 **LEGAL EXPENSE?**

14 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
15 proposed a total Salary and Benefits balance of \$900,451 and \$156,718,
16 respectively, shown on PWSA COSS Model tab 916 lines 290/291, 299/300 and
17 308/309. For the same reasons and consistent with my treatment of Salary and
18 Benefits for all Direct Operating Expenses, previously testified to, by using the
19 three-year vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I
20 arrived at a normalized vacancy level of 11.11%. I then multiplied the Authority's
21 proposed Legal Salary and Benefits balance of \$900,451 and \$139,305,
22 respectively, by the vacancy ratio of 11.11% to arrive at an adjusted level of
23 \$800,401 for Salaries and \$139,305 for Benefits. I then multiplied these balances
24 by the ratio of Water, Wastewater and Stormwater allocations shown the
25 Authority's Exhibit HJS-2. This reduces the balance in the Legal Division by
26 \$85,749 (Water), \$17,620 (Wastewater) and \$12,921 (Stormwater). (Schedule
27 DM-8).

28 **Q. WHAT ARE YOUR OTHER ADJUSTMENTS?**

1 **A.** My other adjustments are to the Authority's General Administrative Expense
2 related to Rate Case expenses. The Authority is proposing a balance for rate case
3 expenses (Account 7370) in the amount of \$3,320,400. This is not consistent with
4 PAPUC practice, which is to normalize rate case expense (for the current case)
5 over the average timeframe that the utility has historically filed rate cases. In
6 PWSA's case that is two years. In response to OCA-II-39 the Authority provided
7 the level of actual rate case expenses incurred for its 2018 and 2020 rate case
8 proceeding. Normalizing the rate case expense costs claimed in this proceeding
9 over two years, provides a balance of \$3,104,835. My adjustment is a reduction
10 of \$215,565. I also recommend that PWSA update its actual rate case expense in
11 its rejoinder testimony so that the final amount to be normalized will reflect actual
12 expenses rather than projected expenses.

13 **Q. WHAT ARE YOUR TOTAL ADJUSTMENTS TO LEGAL EXPENSE?**

14 **A.** My total adjustments to Legal Expense are a reduction of \$331,855. This is shown
15 on my Schedule DM-8.

16 **g. Public Affairs - 921**

17 **Q. WHAT HAS PWSA PROPOSED WITH RESPECT TO ITS PUBLIC AFFAIRS?**

18 **A.** As shown on PWSA Exhibit JP-2, line 16, the Authority has proposed a Public
19 Affairs balance of \$1,283,083. This balance is also shown on PWSA COSS Model
20 2021, tab 921. The Authority allocated 73.23% to the water utility, 15.35% to the
21 wastewater utility and 11.42% to the stormwater utility. (PWSA Exhibit HJS-1 and
22 HJS-2).

23 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S
24 PUBLIC AFFAIRS EXPENSE?**

25 **A.** I have two adjustments to the Authority's Public Affairs costs. My first adjustment
26 is related to the Authority's Salary and Benefits. The Authority proposed a total
27 Salary and Benefits balance of \$600,035 and \$142,346, respectively, shown on
28 PWSA COSS Model tab 921 lines 290/291, 299/300 and 308/309. For the same
29 reasons and consistent with my treatment of Salary and Benefits for all Direct

1 Operating Expenses, previously testified to, by using the three-year vacancy ratios
2 for 2019-2021 as shown in response to OCA Set II-22, I arrived at a normalized
3 vacancy level of 17.2%. I then multiplied the Authority's proposed Public Affairs
4 Salary and Benefits balance of \$600,035 and \$142,346, respectively, by the
5 vacancy ratio of 17.2% to arrive at an adjusted level of \$496,999 for Salaries and
6 \$117,903 for Benefits. I then multiplied these balances by the ratio of Water,
7 Wastewater and Stormwater allocations shown the Authority's Exhibit HJS-2. This
8 reduces the balance in the Public Affairs Division by \$93,061 (Water); \$19,121
9 (Wastewater) and; \$14,023 (Stormwater). (Schedule DM-9).

10 **Q. PLEASE EXPLAIN YOUR SECOND ADJUSTMENT RELATED TO GENERAL**
11 **ADMINISTRATIVE?**

12 **A.** My second adjustment is to the Authority's General Administrative expenses
13 related to Membership Fees (Account 7010), Advertising (Account 7305) and
14 Consultants (Account 7323). I reviewed the three-year costs balances (2019-
15 2021). To be consistent with normalizing Membership fees under prior division
16 costs, I am normalizing the same here. The Authority spent little dollars in prior
17 years. In response to I&E RE-15-D, the Authority stated that it is increasing
18 Membership fees to allow more PWSA employees to join professional
19 organizations. My adjustment sets Membership fees from the Authority's proposed
20 balance in 2022 to \$39,122 a difference of \$23,123 from the Authority's proposed
21 balance of \$67,245. The Authority has not provided any other information related
22 to increased costs of Membership fees, but for the fact that it anticipates an
23 increase to allow more employees to participate. With respect to Advertising, I
24 also normalized these costs to be consistent with what I did in prior division costs.
25 The Authority expended \$0 in 2019, \$3,418 in 2020 and \$10,000 in 2021. The
26 Authority included \$12,000 in the FPFTY period. The Authority indicated that the
27 Advertising costs increase was due to solicitations, community outreach and
28 capital projects (IE-RE-17-D). The Authority did not expand or provide any further
29 reasoning. Normalizing these costs reduces the expense by \$7,527 and provides
30 a balance of \$4,472 (from \$12,000 to \$4,472, a difference of \$7,527). My last
31 adjustment under the Authority's General Administrative expenses is to

1 Consultants. The Authority expended \$10,226 in 2019, \$142,063 in 2020 and will
2 expend \$205,000 in 2021. The Authority is proposing a balance in the FPFTY
3 period of \$357,289. The Authority stated in response to IE-RE-17-D that the
4 increase was due to the support of stormwater efforts and environmental
5 compliance. No other information was provided. Without any support for the
6 specific level of increase, it is more reasonable to use a level of costs based upon
7 prior expended costs. Normalizing these costs reduces the amount by \$139,904
8 and provides for a balance of \$119,096, from the Authority's proposal of \$259,000.

9 **Q. WHAT IS YOUR FINAL ADJUSTMENT TO PUBLIC AFFAIRS?**

10 **A.** My final adjustment is to the inclusion of Inflationary Adjustments of \$11,480. As I
11 indicated previously, Inflationary costs should not be included in the development
12 of the revenue requirement because they are blanket adjustments that may not
13 directly relate to costs incurred by PWSA.

14 **Q. WHAT ARE YOUR TOTAL ADJUSTMENTS TO THE AUTHORITY'S PUBLIC**
15 **AFFAIRS COSTS?**

16 **A.** My total adjustment to the Authority's Public Affairs costs is a reduction of
17 \$313,239 as shown on my Schedule DM-9.

18 **h. Warehouse - 918**

19 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS**
20 **WAREHOUSE COSTS?**

21 **A.** As shown on PWSA Exhibit EB-2, Line 18, the Authority has proposed a balance
22 of \$473,416 (line 18). This balance is also shown on PWSA COSS Model 2021,
23 tab 918. The Authority allocated 73.23% to the water utility, 15.35% to the
24 wastewater utility and 11.42% to the stormwater utility. (PWSA Exhibit HJS-1 and
25 HJS-2).

26 **Q. WHAT ADJUSTMENT DO YOU HAVE REGARDING THE AUTHORITY'S**
27 **WAREHOUSE COSTS?**

28 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
29 proposed a total Salary and Benefits balance of \$353,333 and \$73,532,

1 respectively, shown on PWSA COSS Model tab 918 lines 290/291, 299/300 and
2 308/309. For the same reasons and consistent with my treatment of Salary and
3 Benefits for all Direct Operating Expenses, as previously testified to, by using the
4 three-year vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I
5 arrived at a normalized vacancy level of 15.1%. I then multiplied the Authority's
6 proposed Warehouse Salary and Benefits balance of \$353,333 and \$73,532,
7 respectively, by the vacancy ratio of 15.1% to arrive at an adjusted level of
8 \$300,953 for Salaries and \$62,444 for Benefits. I then multiplied these balances
9 by the ratio of Water, Wastewater and Stormwater allocations shown the
10 Authority's Exhibit HJS-2. This reduces the balance in the Warehouse Division by
11 \$46,989 (Water); \$9,655 (Wastewater) and; \$7,081 (Stormwater). (Schedule DM-
12 11).

13 **Q. DO YOU HAVE ANY OTHER ADJUSTMENTS RELATED TO INVENTORY, O&M**
14 **EXPENSES AND GENERAL ADMINISTRATIVE?**

15 **A.** No. My only adjustment is to the Authority's Salary and Benefits.

16 **Q. WHAT IS YOUR TOTAL ADJUSTMENT TO THE AUTHORITY'S WAREHOUSE**
17 **EXPENSES?**

18 **A.** My total adjustment is a reduction of \$63,725 shown on my Schedule DM-11.

19 **i. Water Quality - 321**

20 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO WATER**
21 **QUALITY?**

22 **A.** As shown on PWSA Exhibit EB-2, Line 20, the Authority has proposed a balance
23 of \$1,792,010 (line 20). This balance is also shown on PWSA COSS Model 2021,
24 tab 321. The Authority allocated 100% to the water utility (PWSA Exhibit HJS-1
25 and HJS-2).

26 **Q. WHAT ADJUSTMENTS DO YOU HAVE WITH RESPECT TO THE**
27 **AUTHORITY'S WATER QUALITY BALANCE?**

1 **A.** I have two adjustments to the Authority's Water Quality. My first adjustment is to
2 the Authority's Salary and Benefits. My second adjustment is to the Authority's
3 O&M Expenses.

4 **Q. PLEASE EXPLAIN YOUR FIRST ADJUSTMENT RELATED TO SALARY AND**
5 **BENEFITS.**

6 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
7 proposed a total Salary and Benefits balance of \$635,588 and \$171,958,
8 respectively, shown on PWSA COSS Model tab 321 lines 290/291. For the same
9 reasons and consistent with my treatment of Salary and Benefits for all Direct
10 Operating Expenses, as previously testified to, by using the three-year vacancy
11 ratios for 2019-2021 as shown in response to OCA Set II-22, I arrived at a
12 normalized vacancy level of 20.8%. I then multiplied the Authority's proposed
13 Water Quality Salary and Benefits balance of \$635,588 and \$171,958,
14 respectively, by the vacancy ratio of 20.8% to arrive at an adjusted level of
15 \$503,174 for Salaries and \$136,133 for Benefits. I then multiplied these balances
16 by the ratio of Water, Wastewater and Stormwater allocations shown the
17 Authority's Exhibit HJS-2. This reduces the balance in the Water Quality Division
18 by \$168,239 (Water); \$0 (Wastewater) and; \$0 (Stormwater). (Schedule DM-12).

19 **Q. WHAT IS YOUR NEXT ADJUSTMENT?**

20 **A.** My next adjustment is to the Authority's O&M Expenses. I made adjustments to
21 the Authority's Lab Equipment (Account 5147); Machinery Repairs (Account
22 5452); Lab (Account 7445) and; Lab Supplies (Account 7447). With respect to
23 Lab Equipment, the Authority, on average, has spent about \$212,937 for Lab
24 Equipment. In the FPFTY period the Authority proposes to expend \$348,100. The
25 Authority in response to IE-RE-7-D stated that the increase is due to anticipated
26 upgrades to equipment such as new turbidity meters, the Milli-Q system and CI-
27 17. Without any further support for the specific level of increase, it is more
28 reasonable to use a level of costs that reflects the Authority's actual experience. I
29 normalized these costs and reduced the balance by \$135,162 or a balance of
30 \$212,937 going forward. With respect to Machinery Repairs, the Authority stated

1 in response to IE-RE-7-D that decreases in prior years were due to shifting these
2 costs on a PAYGO basis and future increases were due to anticipated costs for
3 machinery, LG Sonic Monitor, leak detection equipment and security
4 improvements. I normalized these costs as the Authority expended little dollars in
5 prior years. My adjustment reduces the Authority's balance from \$31,600 to
6 \$7,727 or a decrease of \$23,873. With respect to Lab and Lab Supplies, the
7 Authority spent little dollars in prior years, and is now proposing to increase these
8 costs in 2022. Normalizing the Lab costs results in a decrease of \$57,311, or a
9 balance of \$33,522 from the Authority's proposal of \$90,833. Normalizing Lab
10 Supplies results in a decrease of \$7,641 or a balance of \$97,359 from the
11 Authority's proposal of \$105,000.

12 **Q. WHAT IS YOUR RECOMMENDED ADJUSTMENT REGARDING THE**
13 **AUTHORITY'S WATER QUALITY COSTS?**

14 **A.** My recommended adjustment is a reduction of \$392,226 and is shown on my
15 Schedule DM-12.

16 **j. Plant Operations – 322 Water Treatment**

17 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS PLANT**
18 **OPERATIONS?**

19 **A.** As shown on PWSA Exhibit EB-2, Line 21, the Authority has proposed a Plant
20 Operations balance of \$22,973,908. This balance is also shown on PWSA COSS
21 Model 2021, tab 322. The Authority allocated 100% to the water utility operations.
22 (PWSA Exhibit HJS-1 and HJS-2).

23 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
24 **PLANT OPERATIONS BALANCE OF \$26,912,878?**

25 **A.** I have several adjustments. My first adjustment is related to the Authority's Salary
26 and Benefits. The Authority proposed a total Salary and Benefits balance of
27 \$4,277,062 and \$1,318,067, respectively, shown on PWSA COSS Model tab 322
28 lines 290/291. For the same reasons and consistent with my treatment of Salary
29 and Benefits for all Direct Operating Expenses, as previously testified to, by using

1 the three-year vacancy ratios for 2019-2021 as shown in response to OCA Set II-
2 22, I arrived at a normalized vacancy level of 21.6%. I then multiplied the
3 Authority's proposed Water Treatment Salary and Benefits balance of \$4,277,062
4 and \$1,318,067, respectively, by the vacancy ratio of 21.6% to arrive at an
5 adjusted level of \$3,353,534 for Salaries and \$1,033,365 for Benefits. I then
6 multiplied these balances by the ratio of Water, Wastewater and Stormwater
7 allocations shown the Authority's Exhibit HJS-2. This reduces the balance in the
8 Water Treatment Plant Division by \$1,208,133 (Water); \$0 (Wastewater) and; \$0
9 (Stormwater). (Schedule DM-13).

10 **Q. WHAT ARE YOUR NEXT SET OF ADJUSTMENTS?**

11 **A.** My next set of adjustments is to the Authority's O&M Expenses, specifically
12 Landscaping costs (Account 5355). The Authority proposed total Landscaping
13 costs of \$210,000. Prior period costs showed an average of about \$106,318. In
14 response to IE-RE-10-D the Authority stated that landscaping cost increases were
15 due to anticipated increases for addressing deferred ground maintenance at all
16 locations. Without any further support for the specific level of increase, it is more
17 reasonable to use a level of costs based upon prior expended costs. I am
18 normalizing these costs to arrive at a balance in 2022 of \$106,318, or a reduction
19 of \$103,682.

20 **Q. WHAT IS YOUR NEXT ADJUSTMENT?**

21 **A.** My next adjustment is to the Authority's General Administrative Expenses. These
22 relate to Consultants (Account 7323), Professional Consulting Services (Account
23 7383), and Ground Maintenance (Account 7440). With respect to Consultants, the
24 Authority proposed a balance in the FPFTY 2022 of \$61,800. Prior period costs
25 reflected on average a balance of \$15,823, or a difference of \$45,977 from what
26 is proposed. The Authority stated in response to IE-RE-17-D, that the increase
27 was due to increases in consulting services from PWSA, to support stormwater
28 efforts and environmental compliance and other consulting services. Without any
29 further support for the specific level of increase, it is more reasonable to use a level
30 of costs that reflects the Authority's actual experience. I am recommending a

1 balance of \$15,823, or a decrease of \$45,977. With respect to Professional
2 Consulting Services, the Authority proposed a balance in 2022 of \$3,370,840.
3 Prior period costs on average were \$1,126,476. The Authority stated that these
4 increases were due to SCADA upgrade in 2021 and anticipated increases in
5 services in 2022. (IE-RE-17-D). The Authority has not provided any further
6 information. As such, I am recommending normalization of these costs or a
7 balance of \$1,126,476; a reduction of \$2,244,364. Finally, with respect to Ground
8 Maintenance, the Authority proposed a balance in the 2022 period of \$270,356.
9 Prior period costs show on average a balance of \$198,118. The Authority stated
10 in response to IE-RE-18-D that the adjustments in the Ground Maintenance
11 balances were due to costs being reallocated to another account, items that were
12 previously processed through inventory and anticipated increases in supplies.
13 Given this disparity of accounting, a normalized balance is appropriate. I am
14 recommending a balance of \$198,118, which reduces the Authority's balance by
15 \$72,237.

16 **Q. WHAT IS YOUR ADJUSTMENT RELATED TO GENERAL ADMINISTRATIVE?**

17 **A.** My adjustment is a reduction of \$2,362,578 shown on my Schedule DM-13.

18 **Q. WHAT IS YOUR LAST ADJUSTMENT TO THE AUTHORITY'S WATER
19 TREATMENT PLANT?**

20 **A.** My last adjustment is to remove the Inflationary costs of \$2,517,954. As I indicated
21 previously in my testimony, these costs should not be included in the development
22 of rates for service because they are blanket adjustments that may not relate
23 directly to costs incurred by PWSA.

24 **Q. WHAT ARE YOUR TOTAL RECOMMENDED ADJUSTMENTS TO THE
25 AUTHORITY'S WATER TREATMENT PLANT?**

26 **A.** My recommended adjustments to the Authority's Water Treatment Plant is a
27 reduction of \$6,192,347 from the Authority's proposed balance of \$22,973,908, or
28 \$16,781,561. These adjustments are shown on my Schedule DM-13.

1 **k. Sewer Operations – 424**

2 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS SEWER**
3 **OPERATIONS EXPENSE?**

4 **A.** As shown on the Authority's PWSA Exhibit EB-2, line 22, the Authority has
5 proposed a balance of \$3,437,580 for the FPFTY period. This balance is also
6 shown on the Authority's PWSA COSS Model 2021, tab 424. The Authority
7 allocated 50% of this expense to the wastewater utility and 50% to the stormwater
8 utility. (PWSA Exhibit HJS-1 and HJS-2).

9 **Q. WHAT ADJUSTMENTS DO YOU HAVE REGARDING THE AUTHORITY'S**
10 **SEWER OPERATIONS EXPENSE?**

11 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
12 proposed a total Salary and Benefits balance of \$1,689,200 and \$576,120,
13 respectively, shown on PWSA COSS Model tab 424 lines 299/300 and 308/309.
14 For the same reasons and consistent with my treatment of Salary and Benefits for
15 all Direct Operating Expenses, as previously testified to, by using the three-year
16 vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I arrived at
17 a normalized vacancy level of 18.1%. I then multiplied the Authority's proposed
18 Sewer Operations Salary and Benefits balance of \$1,689,200 and \$576,120,
19 respectively, by the vacancy ratio of 18.1% to arrive at an adjusted level of
20 \$1,383,454 for Salaries and \$471,842 for Benefits. I then multiplied these
21 balances by the ratio of Water, Wastewater and Stormwater allocations shown the
22 Authority's Exhibit HJS-2. This reduces the balance in the Sewer Operations
23 Division by \$0 (Water); \$205,012 (Wastewater) and; \$205,012 (Stormwater).
24 (Schedule DM-14).

25 **Q. PLEASE DESCRIBE YOUR SECOND SET OR GROUP OF ADJUSTMENTS.**

26 **A.** My next set of adjustments is to the Authority's General Administrative expenses.
27 With respect to Grounds and Maintenance costs (Account 7440), the Authority
28 proposed a balance in the FPFTY 2022 of \$54,000. Prior period costs resulted in
29 an average balance of \$41,290, or a decrease of \$12,710. The Authority provided
30 no specific reason for the increase but for the shifting of costs from one account to

1 another, and anticipated increases in supplies. (IE-RE-18-D). Without any further
2 support for the specific level of increase, it is more reasonable to use a level of
3 costs that reflects the Authority's actual experience. My recommended decrease
4 of \$12,710, results from normalizing the costs and is shown on my Schedule DM-
5 14.

6 **Q. WHAT IS YOUR FINAL ADJUSTMENT?**

7 **A.** My final adjustment is to remove the Authority's Inflationary increases of \$67,000.
8 As I indicated previously in my testimony, these costs should not be used to set
9 rates for service because they are not known and measurable and do not provide
10 a good representation of cost adjustments.

11 **Q. WITH THESE ADJUSTMENTS, WHAT IS YOUR RECOMMENDED BALANCE
12 REGARDING SEWER OPERATIONS?**

13 **A.** I am recommending a total balance of \$2,947,846, a reduction of \$489,734 from
14 the Authority's proposed balance of \$3,437,580, which is shown on my Schedule
15 DM-14.

16 **Q. DO YOU HAVE ANY OTHER CONCERNS YOU WOULD LIKE TO ADDRESS?**

17 **A.** Yes. OCA witness Mr. Fought (OCA St. 6) has recommended that the Authority
18 take ownership of the part of sewer laterals within public right-of-ways and
19 easements. He identifies that the Lateral Ownership Report estimated that the
20 average cost for the Authority to replace the part of a lateral within a public ROW
21 would be \$20,000 and that 60 laterals fail each year.

22 **Q. HAVE YOU INCLUDED AN ADJUSTMENT IN YOUR REVENUE
23 REQUIREMENT SCHEDULES RELATED TO PWSA OWNERSHIP OF SEWER
24 LATERALS?**

25 **A.** My understanding is that Mr. Fought estimates the actual costs related to his
26 recommendation will be less than the estimates in the Report. I have not made a
27 revenue requirement adjustment at this time, because I have been advised that
28 the OCA is seeking more information from PWSA. I reserve the right to update my
29 testimony to reflect such additional information.

1 **I. Environmental Compliance – 931**

2 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS**
3 **ENVIRONMENTAL COMPLIANCE EXPENSE?**

4 **A.** The Authority has proposed an Environmental Compliance expense of \$3,977,533
5 shown on Exhibit PWSA EB-2, line 17. This is also shown on the PWS COSS
6 Model 2021, tab 931. The Authority allocated 35% to the water utility and 32.50%
7 to each of the wastewater and stormwater utilities. (PSWA Exhibit HJS-1 and HJS-
8 2).

9 **Q. WHAT CHANGES DO YOU HAVE REGARDING THIS EXPENSE CATEGORY?**

10 **A.** My first adjustment is related to the Authority’s Salary and Benefits. The Authority
11 proposed a total Salary and Benefits balance of \$713,246 and \$133,627,
12 respectively, shown on PWSA COSS Model tab 931 lines 290/291, 299/300, and
13 308/309. For the same reasons and consistent with my treatment of Salary and
14 Benefits for all Direct Operating Expenses, as previously testified to, by using the
15 three-year vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I
16 arrived at a normalized vacancy level of 48.3%. I then multiplied the Authority’s
17 proposed Sewer Operations Salary and Benefits balance of \$713,246 and
18 \$133,627, respectively, by the vacancy ratio of 48.3% to arrive at an adjusted level
19 of \$368,510 for Salaries and \$69,041 for Benefits. I then multiplied these balances
20 by the ratio of Water, Wastewater and Stormwater allocations shown the
21 Authority’s Exhibit HJS-2. This reduces the balance in the Environmental
22 Compliance Division by \$143,262 (Water); \$133,030 (Wastewater) and; \$133,030
23 (Stormwater). (Schedule DM-10).

24 **Q. WHAT OTHER ADJUSTMENTS DO YOU HAVE REGARDING THE**
25 **AUTHORITY’S ENVIRONMENTAL COMPLIANCE?**

26 **A.** My other adjustment is to the Authority’s General Administrative expense.
27 Specifically I am making adjustments to Consultants (Account 7323),
28 Miscellaneous Service – Non Capital (Account 7335), and Professional Services
29 (Account 7383). With respect to Consultants, the Authority did not expend any
30 dollars in 2019 or 2020 and anticipates expending \$69,500 in 2021 and \$180,000

1 in 2022. As I did previously, I am normalizing these costs as the Authority stated
2 in response to IE-RE-17-D these are anticipated costs needed for flow monitoring,
3 mapping, compliance, and SCADA updates. No other information was provided to
4 further support the specific amount of PWSA's claimed increase, so it is more
5 reasonable to use a level of costs that reflects the Authority's actual experience.
6 Normalizing these costs reduces the Authority balance from \$180,000 to \$60,000,
7 a decrease of \$120,000. My next adjustment is to the Authority's Miscellaneous
8 Non-Capital costs. The Authority proposed a balance of \$1,410,400. Prior costs
9 were averaging around \$31,857. The Authority stated that the increased costs
10 were for flow monitoring, modeling, stormwater efforts and master-planning (IE-
11 RE-17-D). I am normalizing these costs going forward, as I believe these will
12 benefit future periods. A two-year average will provide the Authority the dollars it
13 needs to invest in these projects. A two-year average of the projected FPPTY
14 balance produces \$705,200 of costs annually. My next adjustment is to the
15 Authority's Professional Service. The Authority proposed a balance in the FPPTY
16 period of \$1,341,000. Prior period costs reflect on average a balance of
17 \$1,013,233. The Authority stated that the increase was due to SCADA upgrades,
18 and additional support at the Water Treatment Plant. (IE-RE-17-D). No other
19 information was provided. Without any further support for the specific level of
20 increase, it is more reasonable to use a level of costs based upon prior expended
21 costs. Normalizing these costs produce a balance decrease of \$327,766.

22 **Q. WHAT ARE YOUR TOTAL ADJUSTMENTS TO THE AUTHORITY'S**
23 **ENVIRONMENTAL COMPLIANCE?**

24 **A.** My total adjustment is a reduction of \$1,562,288 as shown on my Schedule DM-
25 10.

26 **m. Water Distribution – 325**

27 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ITS**
28 **DISTRIBUTION EXPENSE?**

29 **A.** The Authority has proposed a balance of \$15,138,386 shown on Exhibit PWSA
30 EB-2, line 23. This is also shown in PWSA COSS Model 2021, tab 325. The

1 Authority allocated 100% of this expense to the water utility operations (PWSA
2 Exhibit HJS-1 and HJS-2).

3 **Q. WHAT ADJUSTMENTS DO YOU HAVE?**

4 **A.** I have adjustments related to Salary and Benefits, O&M Expenses and General
5 Administrative.

6 **Q. WHAT IS YOUR FIRST ADJUSTMENT RELATED TO SALARY AND
7 BENEFITS?**

8 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
9 proposed a total Salary and Benefits balance of \$8,590,093 and \$2,669,103,
10 respectively, shown on PWSA COSS Model tab 325 lines 290/291, 299/300, and
11 308/309. For the same reasons and consistent with my treatment of Salary and
12 Benefits for all Direct Operating Expenses, as previously testified to, by using the
13 three-year vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I
14 arrived at a normalized vacancy level of 20.5%. I then multiplied the Authority's
15 proposed Sewer Operations Salary and Benefits balance of \$8,590,093 and
16 \$2,669,103, respectively, by the vacancy ratio of 20.5% to arrive at an adjusted
17 level of \$6,833,147 for Salaries and \$2,123,187 for Benefits. I then multiplied
18 these balances by the ratio of Water, Wastewater and Stormwater allocations
19 shown the Authority's Exhibit HJS-2. This reduces the balance in the Water
20 Distribution Division by \$2,302,862 (Water); \$0 (Wastewater) and; \$0
21 (Stormwater). (Schedule DM-15).

22 **Q. PLEASE EXPLAIN YOUR SECOND ADJUSTMENT.**

23 **A.** My next adjustment is for the Authority's O&M Expenses. I reviewed the accounts
24 related to Machinery (5150), Debris Removal (5330), Operating Contracts (5370)
25 and Repairs Maintenance (5496). With respect to Machinery the Authority
26 expended on average \$661,817 in prior periods. The Authority has proposed a
27 balance of \$506,000 in the FPFTY period. I am increasing this balance to
28 \$661,817 or an adjustment of \$155,818, to normalize these costs based upon prior
29 expended costs. Without any support for the specific level of decrease proposed

1 by the Authority, it is more reasonable to use a level of costs that reflects PWSA's
2 actual experience. With respect to Debris Removal, the Authority has expended
3 on average \$264,192 in prior periods. The Authority has proposed a balance of
4 \$210,000 in the FPFTY period. I am increasing this balance to \$264,192, or an
5 adjustment of \$54,192, to normalize these costs based upon prior expended costs.
6 With respect to Operating Contracts, the Authority has proposed a balance of
7 \$595,400 in the FPFTY period. I am decreasing this balance by \$39,497 based
8 upon prior expended costs. As indicated previously, the Authority stated that
9 Operating Contracts are increasing due to increased work on line location, pump
10 and motor, manhole point repair and CSO flow monitoring. (IE-RE-10-D). With
11 respect to Repairs Maintenance, the Authority proposed a balance of \$34,600 in
12 the FPFTY period. Prior costs expended were on average \$27,265. I am
13 decreasing this balance by \$7,335 based upon prior period costs.

14 **Q. WHAT IS YOUR ADJUSTMENT RELATED TO THE O&M EXPENSE**
15 **CATEGORY?**

16 **A.** My total adjustment to the O&M Expense category is a reduction of \$163,179
17 allocated 100.00% to the Water Division.

18 **Q. WHAT IS YOUR NEXT ADJUSTMENT?**

19 **A.** My next adjustment is to the Authority's General Administrative Expense,
20 specifically Grounds and Maintenance (Account 7440). The Authority has
21 expended, on average about \$108,582 in prior periods. The Authority is proposing
22 a balance of \$150,000 under the FPFTY period. The Authority stated that the
23 increase was due to costs being allocated for another general account, and as a
24 result of previously processed costs through inventory now expensed and
25 anticipated increases in supplies. (IE-RE-18-D). I believe normalizing these costs
26 provides for any adjustments or anomalies in this expense category as costs were
27 shifting from account to account. Normalizing these costs reduces the expense by
28 \$41,418.

29 **Q. WITH THOSE ADJUSTMENTS, WHAT IS YOUR RECOMMENDED BALANCE**
30 **RELATED TO WATER DISTRIBUTION?**

1 **A.** My recommended balance related to Water Distribution is \$12,957,285, a
2 reduction of \$2,181,101 from the Authority's proposed balance of \$15,138,386.
3 This is found on my Schedule DM-15.

4 **n.** **Engineering & Construction – 929 (tab 930)**

5 **Q. WHAT HAS THE AUTHORITY PROPOSED WITH RESPECT TO ENGINEERING**
6 **AND CONSTRUCTION?**

7 **A.** The Authority has proposed Engineering and Construction Expenses in the
8 amount of \$38,530,419 as shown on PWSA Exhibit EB-2, line 24. This balance is
9 also shown on PWSA COSS Model 2021, tab 930. The Authority has allocated
10 55.99% to the water utility, 26.38% to the wastewater utility and 17.62% to the
11 stormwater utility. (PWSA Exhibit HJS-1 and HJS-2).

12 **Q. WHAT ADJUSTMENTS DO YOU HAVE?**

13 **A.** I have adjustments related to Salary and Benefits, O&M Expenses and Inflationary
14 costs increases.

15 **Q. WHAT IS YOUR FIRST ADJUSTMENT?**

16 **A.** My first adjustment is related to the Authority's Salary and Benefits. The Authority
17 proposed a total Salary and Benefits balance of \$4,438,869 and \$938,144,
18 respectively, shown on PWSA COSS Model tab 930 lines 290/291, 299/300, and
19 308/309. For the same reasons and consistent with my treatment of Salary and
20 Benefits for all Direct Operating Expenses, as previously testified to, by using the
21 three-year vacancy ratios for 2019-2021 as shown in response to OCA Set II-22, I
22 arrived at a normalized vacancy level of 39.1%. I then multiplied the Authority's
23 proposed Sewer Operations Salary and Benefits balance of \$4,438,869 and
24 \$938,144, respectively, by the vacancy ratio of 39.1% to arrive at an adjusted level
25 of \$2,703,271 for Salaries and \$571,693 for Benefits. I then multiplied these
26 balances by the ratio of Water, Wastewater and Stormwater allocations shown the
27 Authority's Exhibit HJS-2. This reduces the balance in the Engineering &
28 Construction Division by \$1,365,213 (Water); \$495,677 (Wastewater) and;
29 \$239,437 (Stormwater). (Schedule DM-16).

1 **Q. WHAT IS YOUR ADJUSTMENT TO THE AUTHORITY'S O&M EXPENSE?**

2 **A.** The Authority proposed a balance in the Concrete Repairs category of \$8,000,000
3 (Account 5413). The Authority stated the increase was due to increased contract
4 costs, surface restoration, emergency water and sewer repair and lead line work.
5 (IE-RE-11-D). The Authority did not incur costs related to Concrete Repairs in
6 2018 or 2019. In 2020 the Authority incurred Concrete Repair costs of \$5,245,201.
7 The Authority booked a balance related to Concrete Repairs of \$5,500,000 in FY
8 2021 and an additional cost increase of \$2,500,000 to arrive at a total balance of
9 \$8,000,000 in FPFTY 2022. Given that the Authority is increasing and replacing
10 its lead line work, and other related initiatives, I am averaging these costs over two
11 years or an additional \$1,250,000 annually, instead of the Authority's proposed
12 adjustment of \$2,500,000. I believe the Authority's \$2,500,000 adjustment related
13 to Concrete Repairs is speculative at best. However, the additional dollars over
14 prior years' expenses will allow the Authority to accelerate these projects and
15 provide additional dollars related to the replacement of sewer repairs and lead line
16 work that is expected to continue in the future. This reduces the Authority's
17 balance by \$1,250,000.

18 **Q. WHAT IS YOUR FINAL ADJUSTMENT TO THE AUTHORITY'S ENGINEERING**
19 **AND CONSTRUCTION?**

20 **A.** My final adjustment is the removal of the Inflationary adjustment of \$115,011 (OCA
21 Set II-31). As I indicated previously, these costs should be removed from the rate
22 setting process because they may not relate to actual costs incurred.

23 **Q. WITH THE ABOVE ADJUSTMENT, WHAT IS YOUR RECOMMENDATION?**

24 **A.** My recommendation reduces the Authority's Engineering & Construction
25 Expenses by \$3,465,213, from \$38,530,419 to \$35,065,206 and is shown on my
26 Schedule DM-16.

27 **o. Arrearage Forgiveness Program**

28 **Q. WHAT HAVE YOU INCLUDED WITH RESPECT TO THE ARREARAGE**
29 **FORGIVENESS PROGRAM?**

1 **A.** Based upon the recommendations of OCA witness Roger Colton, I am including
2 \$36,000 of costs related to the Arrearage Forgiveness Program. Mr. Colton
3 explains the components and calculation for this adjustment in his testimony.

4 **3. OPERATING EXPENSES – Other**

5 **Q. WHAT TYPES OF EXPENSES HAS THE AUTHORITY INCLUDED IN ITS**
6 **OPERATING EXPENSES – OTHER?**

7 **A.** The Authority has included the following Other Operating Expenses:

8	• Loss (Gain) on ALCOSAN Billings	\$1,571,968 ³
9	• City Services	\$4,780,000
10	• Non-City Water Payments	<u>\$ 0</u>
11	Total	<u>\$6,351,968</u>

12 This is located on PWSA Exhibit EB-2, lines 26, 27 and 28. This is also located on
13 PWSA COSS Model 2020, tab EB-2.1.

14 **Q. WHAT DO THESE COSTS REPRESENT?**

15 **A.** The Loss (Gain) on ALCOSAN Billings is related to the annual costs that the
16 Authority incurs to carry bad debt expense for collections related to pass-through
17 charges of the Allegheny County Sanitary Authority (ALCOSAN) which, according
18 to PWSA, have increased and are expected to increase due to the decrease in
19 collected revenue resulting from the ongoing COVID-19 pandemic and the planned
20 ALCOSAN rate increases. (PWSA St. No. 1 at 8). The City Services costs of
21 \$4,780,000 represent costs that the Authority has an obligation to provide or make
22 payments to for services currently provided by the City of Pittsburgh (City or
23 Pittsburgh) to PWSA, as well as other negotiated responsibilities that PWSA pays
24 for on behalf of Pittsburgh. These payments are included in the revenue
25 requirement segregated by water and wastewater conveyance obligation. (PWSA
26 St. No. 2 at 15). The Authority has included \$650,000 for Permits, \$780,000 for

³ The ALCOSAN rate for wastewater treatment is not a dollar for dollar recovery. The Authority performs collection efforts for any delinquent or partial payments amounts for these charges. The Authority is responsible for remitting the full billed amount to ALCOSAN regardless of what the Authority collects. (OCA Set II-64).

1 Vehicle Repairs, \$350,000 for Fuel – Gasses and \$3,000,000 for Pension and
2 Voluntary Taxes (PWSA St. No. 2 at 16).

3 **Q. WHAT CHANGES DO YOU HAVE WITH RESPECT TO THE AUTHORITY'S**
4 **PROPOSED OTHER OPERATING EXPENSES OF \$6,351,968?**

5 A. Based on my review of PWSA's response to OCA Set II-18, I normalized the
6 Pension Obligations charges, the Fuel Usage Charges and the Vehicle Repair and
7 Fleet Administrative Charges. I believe these costs do fluctuate from year to year,
8 especially Pension costs, where there is a lot of variability, and Fuel Usage where
9 costs have been known to fluctuate from year to year. This same holds true to
10 Vehicle Repairs, as these costs vary depending on the number of vehicles and
11 repairs at any given time. It is, therefore, appropriate to normalize these costs in
12 setting rates prospectively. My average for Pension Costs (2019-2021) computes
13 to a balance of \$3,063,276. My average for Fuel Usage (2019-2021) computes to
14 a balance of \$300,000. My average for Vehicle Repair and Fleet Administration is
15 \$777,684. This totals \$4,140,546. I then calculated the ratio for Water – 73.22%,
16 Wastewater – 15.35% and Stormwater – 11.42% to arrive at the balances of
17 \$3,031,708 (Water); \$635,574 (Wastewater) and; \$472,850 (Stormwater).

18 **Q. WHAT IS YOUR RECOMMENDED BALANCE REGARDING THE**
19 **AUTHORITY'S OTHER OPERATING EXPENSES?**

20 A. My recommended balance is \$5,712,514, a reduction of \$639,454 from the
21 Authority's proposed balance of \$6,351,968. These adjustments are shown on my
22 Schedule DM-17.

23 **4. DEBT SERVICE COVERAGE**

24 **Q. WHAT HAS THE AUTHORITY PROPOSED REGARDING ITS DEBT SERVICE**
25 **COVERAGE (DSC) AND WHAT ARE THE SPECIFIC BREAKDOWNS?**

26 A. As shown on PWSA Exhibit EB-2, the Authority has proposed a total Debt Service
27 Coverage of \$89,407,273 broken down by the following components:

1	<u>Existing Debt</u>	
2	Senior Debt	\$56,681,659
3	Sub-Ordinate Debt	\$ 4,877,900
4	Pennvest	\$ 4,514,405
5	Revolving Interest	<u>\$ 3,500,000</u>
6	Total Existing Debt	\$69,573,964
7		
8	<u>Future Debt</u>	
9	Senior Debt	\$15,760,027
10	Pennvest	<u>\$ 4,073,281</u>
11	Total Future Debt	\$19,833,308
12		
13	Total Debt Service Required	\$89,407,273
14		

15 The total Debt Service proposal of \$89,407,272 computes to a proposed Senior
16 Debt Coverage Ratio of 1.46 and a Total Debt Service Coverage Ratio of 1.18.
17 (PWSA Exhibit EB-2).

18 **Q. WHAT IS THE RELATIONSHIP BETWEEN DEBT SERVICE AND CAPITAL**
19 **EXPENDITURES?**

20 **A.** As I understand, capital expenditures are a function of outstanding debt service.
21 Debt Service includes Senior Debt, Sub-Ordinate Debt, Pennvest, and Revolver
22 Interest. (PWSA Exhibit EB-2). The level of debt service correlates to the level of
23 capital expenditures (including the mandatory nature of the projects that are
24 included in the Authority's CIP and the Consent Orders and Agreements (COA)
25 (PWSA St. No. 1 at 20). The capital requirements represent the costs to complete
26 capital projects of \$252.3 million (PWSA St. No. 1 at 20) and the associated
27 (existing and future) Debt Service, PAYGO, and DSIC costs required to fund the
28 capital projects.

29 **Q. WHAT CHANGES DO YOU HAVE WITH RESPECT TO THE AUTHORITY'S**
30 **PROPOSED DEBT SERVICE COVERAGE (DSC) OF \$89,407,272?**

31 **A.** My changes are based upon OCA witness David Habr's recommendation of a DSC
32 (Senior Debt) of 1.455⁴, and total DSC of 1.18. I made adjustments to my revenue

⁴ This is rounded up to 1.46.

1 requirement model by modifying my revenues available for debt service (Schedule
2 DM-18). With my adjustments to Revenues, Expenses and City Service payments,
3 I computed Revenues Available for Debt Service of \$105,417,124. My Senior
4 DSC computes to 1.455, slightly lower than the Authority's proposed ratio of 1.46,
5 but what OCA Witness Mr. Habr has recommended.

6 **5. CAPITAL EXPENDITURES & TRANSFERS**

7 **Q. WHAT HAS THE AUTHORITY PROPOSED REGARDING ITS CAPITAL**
8 **EXPENDITURES & TRANSFERS?**

9 **A.** As shown on PWSA Exhibit EB-2 and HJS-1, the Authority has proposed total
10 Capital Expenditures & Transfers of \$18,014,618 by the following components:

11	Internally Generated Funds/PAYGO	\$ 1,000,000
12	Internally Generated Funds/PAYGO (DSIC)	\$ 9,599,856
13	Other Transfers to Reserves	\$ 1,000,000
14	A/R Collection/Bad Debt Expense	\$ 5,718,977
15	Stormwater Credit Program Costs	<u>\$ 696,685</u>
16	Total	\$18,014,618

17 **Q. WHAT CHANGES DO YOU HAVE WITH RESPECT TO THE AUTHORITY'S**
18 **CAPITAL EXPENDITURES & TRANSFERS BALANCE OF \$18,014,618?**

19 **A.** I have two flow-through adjustments. My first adjustment is related to the
20 Authority's Bad Debt Expense. Using my recommended revenue requirement
21 balance of \$211,184,766 (Schedule DM-1) and the Authority's bad debt ratio to
22 total revenues among the Water, (2.0%) Wastewater (2.60%) and Stormwater
23 services (4.30%), I compute a total Bad Debt Expense of \$4,711,869, which is a
24 reduction of \$1,006,208 from the Authority's balance of \$5,718,077.

25 **Q. WHAT IS YOUR NEXT ADJUSTMENT?**

26 **A.** My next adjustment is to the Authority's DSIC costs. The Authority proposed DSIC
27 revenues of \$9,599,856 representing 5% of Water and 5% of Wastewater
28 revenues. Using my recommended revenues for Water and Wastewater I compute
29 DSIC revenue for Water of \$6,257,078 and \$2,474,414 for Wastewater for a total
30 of \$8,731,491. This is a reduction of \$868,364 from the Authority's proposal of
31 \$9,599,856.

1 **Q. PLEASE SUM UP YOUR ADJUSTMENTS TO THE CAPITAL EXPENDITURES**
2 **& TRANFERS.**

3 **A.** My total adjustment is a reduction of \$1,874,572 and is shown on my Schedule
4 DM-19.

5 **6. PROJECTED CASH FLOW**

6 **Q. WHAT HAS THE AUTHORITY PROPOSED REGARDING ITS REQUIRED**
7 **DAYS CASH ON HAND (DCOH) AND ITS REQUIRED ENDING BALANCE?**

8 **A.** As shown on PWSA Exhibit EB-2, the Authority has computed an Ending Balance
9 of \$59,282,331. The Authority started with a Beginning Balance of \$59,225,808
10 and made adjustments to reflect Operating Surplus/(Deficit) of \$56,523, adding in
11 Budgeted Contributions of \$1,000,000, subtracting Hardship Grant Fund
12 Contributions of \$100,000 and subtracting Contributions to Rate Stabilization Fund
13 of \$900,000 to arrive at an Ending Balance of \$59,282,331. The Authority
14 computed its DCOH by taking its proposed total Operating Expenses of
15 \$125,268,731 minus the Loss (Gain) on ALCOSAN billing of \$1,571,968 to arrive
16 at a balance of \$123,696,763 and dividing that number by 365 days to arrive at
17 daily cash balance of \$338,895. The Authority then divided the \$338,895 into
18 \$59,282,331 to arrive at a DCOH of 174.93 days.⁵

19 **Q. WHAT CHANGES DO YOU HAVE WITH RESPECT TO THE AUTHORITY'S**
20 **PROPOSED PROJECTED CASH FLOW BALANCE OF \$59,282,331 AND THE**
21 **PROPOSED DAYS OF CASH ON HAND OF 174.93?**

22 **A.** My adjustments relate to the flow-through of my recommended adjustments to the
23 Authority's Operating Expenses.

24 **Q. PLEASE WALK THROUGH YOUR CALCULATIONS WITH RESPECT TO THE**
25 **AUTHORITY'S PROJECTED CASH FLOW.**

26 **A.** As shown on my Schedule DM-20, I utilized the same methodology as the
27 Authority. My adjustments are to my recommended Operating Expenses totaling
28 \$103,424,160, dividing that amount by 365 days to arrive at a balance of \$283,354.

⁵ Any differences due to rounding.

1 I then divided the \$283,354 into my recommended ending balance of \$37,988,219
2 to arrive at a DCOH of 134.07 days.

3 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

4 **A.** Yes, it does.

STATEMENT OF INCOME

	(1)		Authority		OCA	References
	Authority Present Rates FPFTY 2022	Adjustments	Authority Proposed Rates FPFTY 2022	Adjustments		
System Revenues						
1 Water Sales	\$ 115,504,656	\$ 22,833,415	\$ 138,338,071	\$ (13,196,519)	\$ 125,141,552	Set II-50
2 Wastewater Sales	\$ 69,551,767	\$ (14,845,809)	\$ 54,705,958	\$ (5,217,684)	\$ 49,488,274	Set II-50
3 Stormwater Sales	\$ -	\$ 23,729,641	\$ 23,729,641	\$ (2,279,811)	\$ 21,449,830	Set II-50
4 Sales for Resale / Contract Sales	\$ 3,192,713	\$ 497,419	\$ 3,690,132	\$ -	\$ 3,690,132	
5 Revenues - Other	\$ -	\$ -	\$ -	\$ -	\$ -	
6 DSIC Revenues	\$ 9,227,369	\$ 372,487	\$ 9,599,856	\$ (868,365)	\$ 8,731,491	
7 Other Revenues	\$ 1,834,521	\$ -	\$ 1,834,521	\$ -	\$ 1,834,521	
8 Penalties / Interest	\$ 848,966	\$ -	\$ 848,966	\$ -	\$ 848,966	
9 Additional Revenue				\$ 125,000	\$ 125,000	DH
10 Arrearage Adjustment	\$ -	\$ -	\$ -	\$ 36,000	\$ 36,000	RDG
11 Total System Revenues	\$ 200,159,992	\$ 32,587,153	\$ 232,747,145	\$ (21,401,379)	\$ 211,345,766	
(2) Proposed Revenue Requirement		\$ 32,587,153		\$ 11,185,774		1.455
		16.28%		5.59%		
Direct Operating Expenses						
12 Executive Director	\$ 3,055,434	\$ -	\$ 3,055,434	\$ (689,594)	\$ 2,365,840	DM-3
13 Customer Service	\$ 8,787,106	\$ -	\$ 8,787,106	\$ (1,062,077)	\$ 7,725,029	DM-4
14 MIS	\$ 4,594,275	\$ -	\$ 4,594,275	\$ (709,964)	\$ 3,884,311	DM-5
15 Finance	\$ 7,782,394	\$ -	\$ 7,782,394	\$ (1,788,822)	\$ 5,993,572	DM-6
16 Procurement	\$ -	\$ -	\$ -	\$ -	\$ -	
17 Human Resources	\$ 1,180,406	\$ -	\$ 1,180,406	\$ (426,965)	\$ 753,441	DM-7
18 Legal	\$ 5,910,814	\$ -	\$ 5,910,814	\$ (331,855)	\$ 5,578,959	DM-8
19 Public Affairs	\$ 1,283,083	\$ -	\$ 1,283,083	\$ (313,239)	\$ 969,844	DM-9
20 Environmental Compliance	\$ 3,977,533	\$ -	\$ 3,977,533	\$ (1,562,288)	\$ 2,415,245	DM-10
21 Warehouse	\$ 473,416	\$ -	\$ 473,416	\$ (63,725)	\$ 409,691	DM-11
22 Ops Capital Assets	\$ -	\$ -	\$ -	\$ -	\$ -	
23 Water Quality - Lab	\$ 1,792,010	\$ -	\$ 1,792,010	\$ (392,226)	\$ 1,399,784	DM-12
24 Water Treatment Plant	\$ 22,973,908	\$ -	\$ 22,973,908	\$ (6,192,347)	\$ 16,781,561	DM-13
25 Sewer Operations	\$ 3,437,579	\$ -	\$ 3,437,579	\$ (489,733)	\$ 2,947,846	DM-14
26 Water Distribution	\$ 15,138,386	\$ -	\$ 15,138,386	\$ (2,181,101)	\$ 12,957,285	DM-15
27 Engineering & Construction	\$ 38,530,420	\$ -	\$ 38,530,420	\$ (3,465,214)	\$ 35,065,206	DM-16
				\$ -	\$ -	
28 Arrearage Adjustment	\$ -	\$ -	\$ -	\$ 36,000	\$ 36,000	RDG
29 Total Direct Operating Expenses	\$ 118,916,764	\$ -	\$ 118,916,764	\$ (19,633,150)	\$ 99,283,614	
Other Operating Expenses						
30 Loss/(Gain) on ALCOSAN Billings	\$ 1,571,968	\$ -	\$ 1,571,968	\$ -	\$ 1,571,968	DM-17
31 City Services	\$ 4,780,000	\$ -	\$ 4,780,000	\$ (639,454)	\$ 4,140,546	DM-17
32 Non-City Water Payments	\$ -	\$ -	\$ -	\$ -	\$ -	
33 Total Other Operating Expenses	\$ 6,351,968	\$ -	\$ 6,351,968	\$ (639,454)	\$ 5,712,514	
34 Total Operating Expenses	\$ 125,268,732	\$ -	\$ 125,268,732	\$ (20,272,604)	\$ 104,996,128	
Debt Service						
35 Senior Debt Service	\$ 72,441,686	\$ -	\$ 72,441,686	\$ -	\$ 72,441,686	
36 Sub-Ordinante Debt Service	\$ 13,465,586	\$ -	\$ 13,465,586	\$ -	\$ 13,465,586	
37 Revolving Line of Credit	\$ 3,500,000	\$ -	\$ 3,500,000	\$ -	\$ 3,500,000	
Other Debt	\$ -	\$ -	\$ -	\$ -	\$ -	
38 Total Debt Service	\$ 89,407,272	\$ -	\$ 89,407,272	\$ -	\$ 89,407,272	DM-18
Capital Expenditures / Transfers						
39 Internally Generated Funds/PAYGO	\$ 1,000,000	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000	
Internally Generated Funds/PAYGO DSIC	\$ 9,227,369	\$ 372,487	\$ 9,599,856	\$ (868,364)	\$ 8,731,492	
Other Funding	\$ -	\$ -	\$ -	\$ -	\$ -	
40 Other Transfers to Reserves	\$ 1,000,000	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000	
41 A/R Collections / Bad Debt Expense	\$ 3,949,530	\$ 1,768,547	\$ 5,718,077	\$ (1,009,229)	\$ 4,708,848	
42 Stormwater Credit Program Cost	\$ -	\$ 696,685	\$ 696,685	\$ -	\$ 696,685	
43 Total Capital Expenditures / Transfers	\$ 15,176,899	\$ 2,837,719	\$ 18,014,618	\$ (1,877,593)	\$ 16,137,025	DM-19
44 Total System-wide Revenue Requirements	\$ 229,852,903	\$ 2,837,719	\$ 232,690,622	\$ (22,150,197)	\$ 210,540,425	
45 System Revenue Surplus (Deficit)	\$ (29,692,911)	\$ 29,749,434	\$ 56,523	\$ 748,818	\$ 805,341	

(1) PWSA Exhibit EB-1

(2) PWSA Exhibit EB-2

TOTAL SYSTEM REVENUES

		(1) Authority Proposed Rates			
		FPFTY 2022	Adjustments	OCA	References
1	Water Sales	\$ 138,338,071	\$ -	\$ 125,141,552	
2	Water: DSIC Revenues	\$ 6,864,558		\$ 6,257,078	
3	Wastewater Sales	\$ 54,705,958	\$ -	\$ 49,488,274	
4	Wastewater: DSIC Revenues	\$ 2,735,298		\$ 2,474,414	
5	Stormwater Sales	\$ 23,729,641		\$ 21,449,830	
6	Sales for Resale & Contract Sales	\$ 3,690,132	\$ -	\$ 3,690,132	
7	Other Revenues	\$ 1,834,521	\$ -	\$ 1,834,521	
8	Penalties & Interest	\$ 848,966	\$ -	\$ 848,966	
9	Arrearage Adjustment	\$ -	\$ 36,000	\$ 36,000	RC
10	Additional Revenues		\$ 125,000	\$ 125,000	DH
11	Total System Revenues	\$ 232,747,145	\$ 161,000	\$ 211,345,766	

(1) PWSA Exhibit EB-1

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			OCA	References
<u>Administrative Division</u>		Proposed Rates FPFTY 2022	Adjustments			
1	Executive Director - 910		\$ 3,055,434	\$ (689,594)	\$ 2,365,840	
2	Water - Salary & Benefits	73.23%	\$ 2,237,558	\$ (249,410)	\$ 1,988,148	Set III - 22
3	O&M Expenses					
4	Inventory					
5	General Administrative		\$ -	\$ (203,351)	\$ (203,351)	COSS Model 910 I&E RE-17-D
6	Wastewater - Salary & Benefits	15.35%	\$ 468,972	\$ (52,523)	\$ 416,449	
7	O&M Expenses					
8	Inventory					
9	General Administrative		\$ -	\$ (42,625)	\$ (42,625)	
10	Stormwater - Salary & Benefits	11.42%	\$ 348,904	\$ (38,973)	\$ 309,931	
11	O&M Expenses					
12	Inventory					
13	General Administrative		\$ -	\$ (31,712)	\$ (31,712)	
14	Inflationary Adjustments		\$ -	\$ (71,000)	\$ (71,000)	Set II -31
15	Total		\$ 3,055,434	\$ (689,594)	\$ 2,365,840	

(1) Exhibit PWSA HJS-1
Exhibit PWSA HJS-2

Set up 14 departments, by utility, and eliminate remaining tabs, explain in testimony and adjust in these schedules
Use same approach, three year averages, and remove inflation, or disallow altogether

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority Proposed Rates			OCA	References
<u>Administrative Division</u>		FYFTY 2022	Adjustments			
1	Customer Service - 911	\$ 8,787,106	\$ (1,062,077)	\$ 7,725,029		
2	Water - Salary & Benefits	29.03% \$ 2,551,184	\$ (276,529)	\$ 2,274,655		Set II - 22
3	O&M Expenses					
4	Inventory					
5	General Administrative (postage)		\$ (8,785)	\$ (8,785)		COSS Model 911
6	Wastewater - Salary & Benefits	36.46% \$ 3,203,545	\$ (363,202)	\$ 2,840,343		
7	O&M Expenses					
8	Inventory					
9	General Administrative (postage)		\$ (11,029)	\$ (11,029)		
10	Stormwater - Salary & Benefits	34.51% \$ 3,032,377	\$ (392,093)	\$ 2,640,284		
11	O&M Expenses					
12	Inventory					
13	General Administrative (postage)		\$ (10,439)	\$ (10,439)		
14	Total	\$ 8,787,106	\$ (1,062,077)	\$ 7,725,029		

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			
<u>Administrative Division</u>		Proposed Rates	Adjustments	OCA	References
		FPFTY 2022			
1	Management Information System - 912	\$ 4,594,275	\$ (709,964)	\$ 3,884,311	
2	Water - Salary & Benefits	73.23% \$ 3,364,483	\$ (519,594)	\$ 2,844,889	Set II-22
3	Wastewater - Salary & Benefits	15.35% \$ 705,166	\$ (109,237)	\$ 595,929	
4	Stormwater - Salary & Benefits	11.42% \$ 524,626	\$ (81,133)	\$ 443,493	
5	Total	\$ 4,594,275	\$ (709,964)	\$ 3,884,311	

(1) PWSA Exhibit HJS-1
 PWSAExhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority Proposed Rates				
<u>Administrative Division</u>		FPFTY 2022	Adjustments	OCA	References	
1	Finance - 913	\$ 7,782,394	\$ (1,788,822)	\$ 5,993,572		
2	Water - Salary & Benefits	73.23% \$ 5,699,209	\$ (424,061)	\$ 5,275,148	Set II - 22	
3	O&M Expenses (vehicles)	\$ -	\$ (549,225)	\$ (549,225)	I&E-RE-7-D	
4	Inventory					
5	General Administrative	\$ -	\$ (336,926)	\$ (336,926)	I&E-RE-15/17	
6	Wastewater - Salary & Benefits	15.35% \$ 1,194,504	\$ (88,636)	\$ 1,105,868		
7	O&M Expenses (vehicles)	\$ -	\$ (115,125)	\$ (115,125)		
8	Inventory	\$ -	\$ -	\$ -		
9	General Administrative	\$ -	\$ (70,624)	\$ (70,624)		
10	Stormwater - Salary & Benefits	11.42% \$ 888,691	\$ (66,042)	\$ 822,649		
11	O&M Expenses (vehicles)	\$ -	\$ (85,650)	\$ (85,650)		
12	Inventory	\$ -	\$ -	\$ -		
13	General Administrative	\$ -	\$ (52,543)	\$ (52,543)		
14	Total	\$ 7,782,404	\$ (1,788,832)	\$ 5,993,572		

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority Proposed Rates				
<u>Administrative Division</u>		FPFTY 2022	Adjustments	OCA	References	
1	Human Resources - 915	\$ 1,180,406	\$ (426,965)	\$ 753,441		
2	Water - Salary and Benefits	73.23% \$ 864,436	\$ (185,612)	\$ 678,824	Set II- 22	
3	General Administrative (Prof. Svcs.)	\$ -	\$ (121,987)	\$ (121,987)	I&E RE-17-D	
4	Wastewater -Salary and Benefits	15.35% \$ 181,178	\$ (38,796)	\$ 142,382		
5	General Administrative (Prof. Svcs.)	\$ -	\$ (25,570)	\$ (25,570)		
6	Stormwater - Salary and Benfits	11.42% \$ 134,792	\$ (28,907)	\$ 105,885		
7	General Administrative (Prof. Svcs.)	\$ -	\$ (19,023)	\$ (19,023)		
8	Inflationary Adjustments	\$ -	\$ (7,070)	\$ (7,070)	Set II - 31	
9	Total	\$ 1,180,406	\$ (426,965)	\$ 753,441		

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority Proposed Rates				
<u>Administrative Division</u>		FPFTY 2022	Adjustments	OCA	References	
1	Legal - 916	\$ 5,910,814	\$ (331,855)	\$ 5,578,959		
2	Water - Salary and Benefits	73.23% \$ 4,328,612	\$ (85,749)	\$ 4,242,863	Set II-22	
3	O&M Expenses	\$ -	\$ -	-		
4	Inventory	\$ -	\$ -	-		
5	General Administrative (rate case)	\$ -	\$ (157,858)	\$ (157,858)	Set II-39 IE-RE-17-D	
6	Wastewater - Salary and Benefits	15.35% \$ 907,239	\$ (17,620)	\$ 889,619		
7	O&M Expenses	\$ -	\$ -	-		
8	Inventory	\$ -	\$ -	-		
9	General Administrative (rate case)		\$ (33,089)	\$ (33,089)		
10	Stormwater - Salary and Benefits	11.42% \$ 674,963	\$ (12,921)	\$ 662,042		
11	O&M Expenses	\$ -	\$ -	-		
12	Inventory	\$ -	\$ -	-		
13	General Administrative (rate case)	\$ -	\$ (24,618)	\$ (24,618)		
14	Total	\$ 5,910,814	\$ (331,855)	\$ 5,578,959		

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority				
<u>Administrative Division</u>		<u>Proposed Rates</u>	<u>Adjustments</u>	<u>OCA</u>	<u>References</u>	
		FPFTY 2022				
1	Public Affairs - 921	\$ 1,283,083	\$ (313,239)	\$ 969,844		
2	Water - Salary and Benefits	73.23% \$ 939,628	\$ (93,061)	\$ 846,567	Set II-22	
3	O&M Expenses	\$ -	\$ -	-		
4	Inventory	\$ -	\$ -	-		
5	General Administrative		\$ (128,558)	\$ (128,558)	IE-RE-15/17	
6	Wastewater - Salary and Benefits	15.35% \$ 196,938	\$ (19,121)	\$ 177,817		
7	O&M Expenses	\$ -	\$ -	-		
8	Inventory	\$ -	\$ -	-		
9	General Administrative		\$ (26,948)	\$ (26,948)		
10	Stormwater - Salary and Benefits	11.42% \$ 146,517	\$ (14,023)	\$ 132,494		
11	O&M Expenses	\$ -	\$ -	-		
12	Inventory	\$ -	\$ -	-		
13	General Administrative		\$ (20,048)	\$ (20,048)		
14	Inflationary Adjustments		\$ (11,480)	\$ (11,480)	Set II - 31	
15	Total	\$ 1,283,083	\$ (313,239)	\$ 969,844		

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority Proposed Rates			
<u>Operations Division</u>		FPFTY 2022	Adjustments	OCA	References
1	Environmental Compliance - 931	\$ 3,977,533	\$ (1,562,288)	\$ 2,415,245	
2	Water - Salary and Benefits	35.00% \$ 1,392,137	\$ (143,262)	\$ 1,248,875	Set II-22
3	O&M Expenses	\$ -	\$ -	\$ -	
4	Inventory	\$ -	\$ -	\$ -	
5	General Administrative		\$ (403,538)	\$ (403,538)	IE-RE-17
6	Wastewater - Salary and Benefits	32.50% \$ 1,292,698	\$ (133,030)	\$ 1,159,668	
7	O&M Expenses	\$ -	\$ -	\$ -	
8	Inventory	\$ -	\$ -	\$ -	
9	General Administrative		\$ (374,714)	\$ (374,714)	
10	Stormwater - Salary and Benefits	32.50% \$ 1,292,698	\$ (133,030)	\$ 1,159,668	
11	O&M Expenses	\$ -	\$ -	\$ -	
12	Inventory	\$ -	\$ -	\$ -	
13	General Administrative		\$ (374,714)	\$ (374,714)	
14	Total	\$ 3,977,533	\$ (1,562,288)	\$ 2,415,245	

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			
<u>Operations Division</u>		Proposed Rates	Adjustments	OCA	References
		FPFTY 2022			
1	Warehouse - 918	\$ 473,416	\$ (63,725)	\$ 409,691	
2	Water - Salary and Benefits	73.23% \$ 346,692	\$ (46,989)	\$ 299,703	Set II-22
3	Wastewater - Salary and Benefits	15.35% \$ 72,664	\$ (9,655)	\$ 63,009	
4	Stormwater - Salary and Benefits	11.42% \$ 54,060	\$ (7,081)	\$ 46,979	
5	Total	\$ 473,416	\$ (63,725)	\$ 409,691	

(1) PWSA Exhibit HJS-1
 PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			
<u>Operations Division</u>		Proposed Rates			
		FPFTY 2022	Adjustments	OCA	References
1	Water Quality (Lab) - 321	\$ 1,792,010	\$ (392,226)	\$ 1,399,784	
2	Water - Salary and Benefits	100.00% \$ 1,792,010	\$ (168,239)	\$ 1,623,771	Set II-22
3	O&M Expenses	\$ -	\$ (223,987)	\$ (223,987)	I&E RE-7
4	Inventory	\$ -	\$ -	\$ -	
5	General Administrative	\$ -	\$ -	\$ -	
6	Wastewater	0.00% \$ -	\$ -	\$ -	
7	Stormwater	0.00% \$ -	\$ -	\$ -	
8	Total	\$ 1,792,010	\$ (392,226)	\$ 1,399,784	

(1) PWSA Exhibit HJS-1
 PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority Proposed Rates				
<u>Operations Division</u>		FPFTY 2022	Adjustments	OCA	References	
1	Water Treatment Plant - 322	\$ 22,973,908	\$ (6,192,347)	\$ 16,781,561		
2	Water - Salary and Benefits	100.00% \$ 22,973,908	\$ (1,208,133)	\$ 21,765,775	Set II-22	
3	O&M Expenses	\$ -	\$ (103,682)	\$ (103,682)	IE-RE-10-D	
4	Inventory	\$ -	\$ -	\$ -		
5	General Administrative	\$ -	\$ (2,362,578)	\$ (2,362,578)	IE-RE-17-D	
6	Wastewater	0.00% \$ -	\$ -	\$ -		
7	Stormwater	0.00% \$ -	\$ -	\$ -		
8	Inflationary adjustments		\$ (2,517,954)	\$ (2,517,954)	Set II - 31	
9	Total	\$ 22,973,908	\$ (6,192,347)	\$ 16,781,561		

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			References
<u>Operations Division</u>		Proposed Rates	Adjustments	OCA	
		FPFTY 2022			
1	Sewer Operations - 424	\$ 3,437,579	\$ (489,733)	\$ 2,947,846	
2	Water	0.00% \$ -	\$ -	-	Set II-22
3	Wastewater - Salary and Benefits	50.00% \$ 1,718,790	\$ (205,012)	\$ 1,513,778	
4	O&M Expenses	\$ -	\$ -	-	
5	Inventory	\$ -	\$ -	-	
6	General Administrative	\$ -	\$ (6,355)	\$ (6,355)	IE RE-18-D
7	Stormwater - Salary and Benefits	50.00% \$ 1,718,790	\$ (205,012)	\$ 1,513,778	
8	O&M Expenses	\$ -	\$ -	-	
9	Inventory	\$ -	\$ -	-	
10	General Administrative	\$ -	\$ (6,355)	\$ (6,355)	
11	Inflationary Adjustments		\$ (67,000)	\$ (67,000)	Set II - 31
12	Total	\$ 3,437,580	\$ (489,734)	\$ 2,947,846	

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			
<u>Operations Division</u>		Proposed Rates	Adjustments	OCA	References
		FPFTY 2022			
1	Water Distribution - 325	\$ 15,138,386	\$ (2,181,101)	\$ 12,957,285	
2	Water - Salary and Benefits	100.00% \$ 15,138,386	\$ (2,302,862)	\$ 12,835,524	Set II-22
3	O&M Expenses	\$ -	\$ 163,179	\$ 163,179	IE RE-7-D
4	Inventory	\$ -	\$ -		
5	General Administrative	\$ -	\$ (41,418)	\$ (41,418)	IE-RE-18-D
6	Wastewater	0.00% \$ -	\$ -	\$ -	
7	Stormwater	0.00% \$ -	\$ -	\$ -	
8	Total	\$ 15,138,386	\$ (2,181,101)	\$ 12,957,285	

(1) PWSA Exhibit HJS-1
 PWSA Exhibit HJS-2

<u>DIRECT OPERATING EXPENSES</u>		(1) Authority			
<u>Engineering & Construction Division</u>		Proposed Rates			
		FPFTY 2022	Adjustments	OCA	References
1	Engineering & Construction - 930	\$ 38,530,420	\$ (3,465,214)	\$ 35,065,206	
2	Water - Salary and Benefits	55.99% \$ 21,574,561	\$ (1,365,213)	\$ 20,209,348	Set II-22
3	O&M Expenses	\$ -	\$ (699,875)	\$ (699,875)	IE-RE-11-D
4	Inventory	\$ -	\$ -	-	
5	General Administrative				IE RE-17-D
6	Wastewater - Salary and Benefits	26.38% \$ 10,164,915	\$ (495,677)	\$ 9,669,238	
7	O&M Expenses	\$ -	\$ (329,750)	\$ (329,750)	
8	Inventory	\$ -	\$ -	-	
9	General Administrative				
10	Stormwater - Salary and Benefits	17.62% \$ 6,790,943	\$ (239,437)	\$ 6,551,506	
11	O&M Expenses	\$ -	\$ (220,250)	\$ (220,250)	
12	Inventory	\$ -	\$ -	-	
13	General Administrative				
14	Inflationary Adjustments		\$ (115,011)	\$ (115,011)	Set II-31
15	Total	\$ 38,530,419	\$ (3,465,213)	\$ 35,065,206	

(1) PWSA Exhibit HJS-1
PWSA Exhibit HJS-2

OCA Set II - 32 Washout Disconnection Expenses CSO Flow monitoring expenses

<u>OTHER OPERATING EXPENSES</u>		(1) Authority Proposed Rates			OCA	References
		FPFTY 2022	Adjustments			
1	Loss/(Gain) on ALCOSAN Billing	\$ 1,571,968	\$ -	\$ 1,571,968		Set II - 64
2	Water	\$ -				
3	Wastewater	\$ 1,571,968	\$ -	\$ 1,571,968		Set II - 37
4	Stormwater	\$ -				PWSA EB-4
5	Total	\$ 1,571,968	\$ -	\$ 1,571,968		
6	City Services	\$ 4,780,000	\$ -	\$ 4,780,000		
7	Water - 73.22%	\$ 3,500,493	\$ (468,785)	\$ 3,031,708		
8	Wastewater - 15.35%	\$ 733,673	\$ (98,099)	\$ 635,574		
9	Stormwater - 11.42%	\$ 545,834	\$ (72,984)	\$ 472,850		
10	Total	\$ 4,780,000	\$ (639,454)	\$ 4,140,546		Set II-18
11	Non-City Water Payments	\$ -				
12	Total	\$ 6,351,968	\$ (639,454)	\$ 5,712,514		

(1) PWSA Exhibit HJS-1
PWSA Exhibit EB-2

<u>DEBT SERVICE COVERAGE</u>		(1)			
		Company			
		Proposed Rates			
		FPFTY 2022	Adjustments	OCA	References
Revenues					
1	Operating Revenues	\$ 232,747,145	\$ (21,401,379)	\$ 211,345,766	
2	ALCOSAN Collections	\$ 77,026,440	\$ -	\$ 77,026,440	
3	Unrestricted Cash on Hand	\$ -			
4	Total Revenues	\$ 309,773,585	\$ (21,401,379)	\$ 288,372,206	
Current Expenses - Proposed Rates					
5	Current Expenses - Proposed Rates	\$ (123,696,764)	\$ 14,560,090	\$ (109,136,674)	
6	ALCOSAN Charges	\$ (78,598,408)	\$ -	\$ (78,598,408)	
7	Non-City Water Payments	\$ -	\$ -	\$ -	
8	Bad Debt Expense	\$ (5,718,077)	\$ 1,006,208	\$ (4,711,869)	
9	Stormwater Credit Program Cost	\$ (696,685)	\$ -	\$ (696,685)	
10	Total Current Expenses	\$ (208,709,934)	\$ 20,974,852	\$ (187,735,082)	
11	Add back City Services	\$ 4,780,000	\$ -	\$ 4,780,000	
12	Revenues Available for Debt Service	\$ 105,843,651	\$ (426,527)	\$ 105,417,124	
Debt Service					
<u>Existing Debt</u>					
13	Senior Debt	\$ 56,681,659	\$ -	\$ 56,681,659	
14	Sub-Ordinate Debt	\$ 4,877,900	\$ -	\$ 4,877,900	
15	Pennvest	\$ 4,514,405	\$ -	\$ 4,514,405	
16	Revolver Interest	\$ 3,500,000	\$ -	\$ 3,500,000	
17	Total Existing Debt	\$ 69,573,964	\$ -	\$ 69,573,964	
<u>Future Debt</u>					
18	Senior Debt	\$ 15,760,027	\$ -	\$ 15,760,027	
19	Pennvest	\$ 4,073,281	\$ -	\$ 4,073,281	
20	Other Debt	\$ -	\$ -	\$ -	
21	Total Future Debt	\$ 19,833,308	\$ -	\$ 19,833,308	
22	Total Debt Service (Required)	\$ 89,407,272	\$ -	\$ 89,407,272	
23	Senior Debt Service Coverage	1.4611		1.455199763	
24	Minimum Requirement	1.2500			
25	Total Debt Service Coverage	1.1838		1.179066557	
26	Minimum Requirement	1.1000			

(1) PWSA Exhibit EB-2

<u>CAPITAL EXPENDITURES & TRANSFERS</u>		(1) Company Proposed Rates			
		FPFTY 2021	Adjustments	OCA	References
1	<u>Internally Generated Funds/PAYGO</u>	\$ 1,000,000	\$ -	\$ 1,000,000	
2	Water	\$ 1,000,000	\$ -	\$ 1,000,000	
3	Wastewater	\$ -			
4	Stormwater	\$ -			
5	Total	\$ 1,000,000	\$ -	\$ 1,000,000	
6	<u>Other Transfers to Reserves</u>	\$ 1,000,000	\$ -	\$ 1,000,000	
7	Water	\$ 640,000	\$ -	\$ 640,000	
8	Wastewater	\$ 250,000	\$ -	\$ 250,000	
9	Stormwater	\$ 110,000	\$ -	\$ 110,000	
10	Total	\$ 1,000,000	\$ -	\$ 1,000,000	
11	<u>Bad Debt Expense</u>	\$ 5,718,077	\$ -	\$ 2,113,458	
12	Water	\$ 2,977,855	\$ (475,024)	\$ 2,502,831	
13	Wastewater	\$ 1,148,825	\$ 137,870	\$ 1,286,695	
14	Stormwater	\$ 1,591,397	\$ (669,054)	\$ 922,343	
15	Total	\$ 5,718,077	\$ (1,006,208)	\$ 4,711,869	
16	<u>Stormwater Credit Program Costs</u>	\$ 696,685	\$ -	\$ 696,685	
17	Water	\$ -			
18	Wastewater	\$ -			
19	Stormwater	\$ 696,685	\$ -	\$ 696,685	
20	Total	\$ 696,685		\$ 696,685	
21	Subtotal - CAPEX & Transfers	\$ 8,414,762	\$ (1,006,208)	\$ 7,408,554	
22	<u>DSIC Costs</u>	\$ 9,599,856		\$ 8,731,492	
23	Water	\$ 6,864,558	\$ (607,480)	\$ 6,257,078	
24	Wastewater	\$ 2,735,298	\$ (260,884)	\$ 2,474,414	
25	Stormwater	\$ -	\$ -	\$ -	
26	Total	\$ 9,599,856	\$ (868,364)	\$ 8,731,491	
27	Total CAPEX & Transfers	\$ 18,014,618	\$ (1,874,572)	\$ 16,140,045	

average out PAYGO and adjust DSIC as needed, as one utility
Adjust Bad Debts as needed

(1) PWSA Exhibit HJS-1

Total Capital Expenditures and Transfers are reduced by A/R Collection and Bad Debt Expense and are not included in the total.

PROJECTED CASH FLOW

		(1) Authority Proposed Rates		OCA		Reference
		FPFTY 2022	Adjustments	FPFTY 2022		
Operating Fund						
1	Beginning Balance	\$ 59,225,808	\$ (22,042,930)	\$ 37,182,878		
<u>Sources</u>						
2	Operating Surplus /(Deficit)	\$ 56,523	\$ 748,818	\$ 805,341		
3	Budgeted Contributions	\$ 1,000,000	\$ -	\$ 1,000,000		
<u>Uses</u>						
4	Hardship Grant Fund Contribution	\$ (100,000)		\$ (100,000)		
5	Contributions to Rate Stabilization Fund	\$ (900,000)	\$ -	\$ (900,000)		
6	Ending Balance	\$ 59,282,331	\$ -	\$ 37,988,219		
7	Days Cash on Hand (DCOH)	174.93		134.07	Set II-48	
8	Proposed Operating Expenses / 365 days	\$ 338,895	\$ (55,541)	\$ 283,354		

(1) PWSA Exhibit EB-2

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Dante Mugrace, hereby state that the facts set forth in my Direct Testimony, OCA Statement 1, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 8, 2021
*312546

Signature: *Dante Mugrace*
Dante Mugrace

Consultant Address: PCMG and Associates
90 Moonlight Court
Toms River, NJ 08753

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
	:	Docket Nos. R-2021-3024773
v.	:	(Water), R-2021-3024774
	:	(Wastewater), and R-2021-
	:	3024779 (Stormwater)
Pittsburgh Water and Sewer	:	
Authority	:	

DIRECT TESTIMONY OF
DR. DAVID S. HABR
ON BEHALF OF THE
OFFICE OF CONSUMER ADVOCATE

July 8, 2021

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

2 A: David S. Habr, 213 Cornuta Way, Nipomo, CA.

3 **Q: By whom are you employed?**

4 A: I am the owner of Habr Economics, a consulting firm I founded in January 2009.
5 The firm focuses on cost of capital and mergers and acquisitions.

6 **Q: Would you provide a brief description of your education and experience?**

7 A: Yes. I received a Bachelor of Arts (1968) and a Master of Arts (1969) degree in
8 economics from the University of Nebraska – Lincoln. I received a Ph.D. degree
9 in economics from Washington State University in 1976.

10 My career in utility regulation began when I joined the Iowa State
11 Commerce Commission (n/k/a as the Iowa Utilities Board) in 1981. I filed my
12 first rate of return testimony in a 1983 Northwestern Bell case and I have
13 continued to testify on rate of return and other economic and/or financial issues
14 since then. In 1987, I was hired by the Iowa Office of Consumer Advocate to
15 establish and develop their testifying staff as well as continue to testify on
16 economic and financial matters including rate of return.

17 I remained in that position until the end of 2008. Since starting Habr
18 Economics I have filed testimony in merger cases in Maine and Maryland, rate of
19 return testimony in Hawaii, Pennsylvania, Maine and Maryland, and debt service
20 coverage ratio testimony in the Philadelphia Gas Works' 2017 and 2020 rate cases
21 as well as Pittsburgh Water and Sewer Authority's 2020 rate case.

22 Prior to joining the Iowa State Commerce Commission staff, I had a private

1 consulting practice, worked for a small consulting firm, and served six years as
2 member of the Drake University economics faculty. My vita, Exhibit DSH-1,
3 contains a more detailed account of my previous activities.

4 **Q: What is the purpose of your direct testimony in this proceeding?**

5 A: The purpose of my testimony is to recommend a debt service coverage ratio to use
6 in this proceeding that maintains the financial integrity of the Pittsburgh Water and
7 Sewer Authority (PSWA). I also have some comments on Mr. Barca's testimony.

8 **Q: Have you prepared any exhibits to accompany your testimony?**

9 A: Yes, I have prepared Exhibits DSH-1 through DSH-5. A brief description of each
10 exhibit follows:

11 DSH-1 – Habr's Vita.

12 DSH-2 – "Rating Methodology – Municipal Utility Revenue Debt"

13 DSH-3 – Financial metrics' "credit rating"

14 DSH-4 – FEDERAL RESERVE Statistical Release G.19 June 7, 2021

15 DSH-5 – Present Value of Debt v. PAYGO Financing

16 **Q: How does your analysis fit into the revenue requirement calculation?**

17 A: PWSA's rates are established using the cash flow method. Under this method, the
18 revenue requirement is the sum of operating expenses, debt service, and a
19 "margin" sufficient to maintain the organization's ability to attract capital on
20 reasonable terms. PWSA's senior debt requires a 1.25x debt service coverage
21 ratio while its subordinate debt requires a 1.10x debt service coverage ratio. My

1 role is to determine how much additional margin, if any, needs to be added to
2 establish a reasonable revenue requirement under current market conditions.

3 **Q: How much is PWSA proposing to increase base rates?**

4 A: PWSA is proposing a \$32.2 million base rate increase for 2022. Although Mr.
5 Barca indicates that PWSA is proposing to phase-in the \$32.2 million increase
6 (\$22 million in 2022 and \$10.2 million in 2023), the full increase is included in the
7 2022 FPFTY. (See PWSA Statement No. 2, Page 4, lines 4-12.)

8 **Q: What were the driving forces for this proposed increase?**

9 A: Mr. Pickering identified four general areas, two in capital projects and two in
10 operating expenses. The capital projects are related to the acceleration of lead
11 service line replacement and the refurbishing and replacing significant portions of
12 PWSA's water supply system. The operating expense increased are related to
13 regulatory compliance issues and responding to unexpected situations that arise
14 due to the ages of the system.¹

15 **Q: How do capital projects impact PWSA's rates?**

16 A: For a cash flow regulated company like PWSA, funds for capital projects come
17 from either the margin above operating costs (PAYGO) included in rates, or debt
18 issuances (investor contributed) or a combination of both.

19 **Q: What debt service coverage ratio are you recommending in this proceeding?**

20 A: For this proceeding, I am recommending the revenue requirement be set at a level
21 that generates a 1.46x senior debt service coverage ratio and a 1.18x overall debt

¹ PWSA Statement No. 1, Page 4, line 20 through Page 5, line 8.

1 service coverage ratio. These are the same debt service coverage ratios that Mr.
2 Barca recommended in PWSA Exhibit EB-2.

3 **Q: Why have you adopted Mr. Barca’s Debt Service Coverage Ratios in this**
4 **proceeding?**

5 A: My recommended Debt Service Coverage Ratios in PWSA’s last proceeding
6 (Docket No. R-2020-3017951et. al.) were 1.49x and 1.19x for senior and total
7 debt service coverage respectively. Mr. Barca’s 1.46x and 1.18x senior and total
8 debt service coverage ratios are very close to my previous recommendation.

9 **Q: Mr. Barca discusses the importance of PWSA maintaining its current bond**
10 **rating pages 42 – 43 of PWSA Statement No. 2. Will a 1.18x overall debt**
11 **service coverage ratio put PWSA’s bond rating at risk?**

12 A: No, it will not. I used the information in Moody’s “Rating Methodology – US
13 Municipal Utility Revenue Debt” to determine if the financial metric values
14 generated by the OCA’s analysis² maintain a rating consistent with PWSA’s A3
15 Moody’s rating. The results on Exhibit DSH-3 clearly show that the financial
16 metrics weighted score, 3.23, is in the upper half of the 3.17 to 3.50 A3 rating
17 score range. (Note: low scores in Moody’s rating scores are associated with
18 higher ratings.) Thus, it does not appear that a 1.18x coverage ratio, on its own,
19 would result in PWSA’s A3 rating being lowered.

20 **Q: Is there any need for PWSA to pursue rapid upgrades in its bond rating?**

²(1) annual debt service coverage, (2) days of cash on hand, and (3) debt to operating revenues.

1 A: No. PWSA currently has solid investment grade ratings and is certainly not
2 teetering on the edge of a down grade due to operating problems. Pursuing
3 upgrades at a rate faster than they may be obtained under current rates would
4 require increased rates which in turn would create a heavier burden for many of
5 PWSA's customers.

6 **Q: Do you have any other comments on Mr. Barca's testimony?**

7 A: Yes, I do. I do not agree with Mr. Barac's statement on Page 24, lines 4 – 6, of
8 PWSA Statement No. 2 wherein he asserts that "PAYGO funding is cheaper
9 compared to the debt service and required debt service coverage costs associated
10 with long term debt when the cost of long-term borrowing is computed." Just
11 because PAYGO does not have an explicit interest cost tied to it does not mean
12 PAYGO is the cheaper alternative from the customers' point of view. What Mr.
13 Barca has left out of consideration is the customers' opportunity cost of the funds
14 they are being "forced" to provide PWSA to fund PAYGO investments.

15 **Q: What is the customers' opportunity cost of the funds they supply for their**
16 **"investment" in PAYGO opportunities?**

17 A: Depending on the individual customer's financial condition, the opportunity cost
18 of making an "investment" in PWSA could be either the extra interest the
19 customer has to pay on credit cards that can't be paid down as fast or, for
20 customers on the margin, it could be the interest on newly incurred credit card
21 debt, or it could be the interest or other income from investments forgone due to
22 the "investment" in PWSA.

1 **Q: What is the starting point for examining PWSA’s customers’ opportunity**
2 **costs relative to debt or margin financing?**

3 A: The starting point is PWSA’s cost of debt. I’ll use the 4.00% interest rate used by
4 PWSA for the 30-year bonds used in its financial projections to represent PWSA’s
5 interest cost.³ For any fixed amount of capital expenditure, customers could avoid
6 this interest cost by providing the funds for that fixed amount of capital
7 expenditure through the “margin.” However, if customers, in order to provide
8 those funds, have to take on or add to credit card debt, their interest cost could be
9 in the neighborhood of 15.9%, the most recent average rate for bank credit cards
10 with outstanding balances. (See OCA Exhibit DSH-4.) Clearly, the net interest
11 payment for customers with credit card debt is minimized when they use their
12 funds to pay down credit card debt and PWSA borrows the needed funds at a
13 much lower interest cost.

14 **Q: Would customers who have no credit card debt benefit from “investing” in**
15 **PGW?**

16 A: Yes, they could. In my example, they avoid paying the 4.00% interest cost on new
17 debt. However, if these customers have any debt with an interest cost above
18 4.00%, they would be better off paying down that debt as opposed to “investing”
19 in PWSA.

20 **Q: What about customers with no debt outstanding?**

³ See PWSA Cost of Service Study Model 4.13.2, Future Debt Tab, Column F, Row 58 et. al.

1 A: If they had a choice, these customers may want to include an “investment” in
2 PWSA if it fits the risk profile of their investment profile. However, they do not
3 have a choice in this situation.

4 **Q: Can you provide an example total cost of debt financing versus the total cost**
5 **of PAYGO financing?**

6 A: Yes, I can. I have constructed a hypothetical wherein the cash-flow regulated
7 organization made \$100 million in capital expenditures each year for 10 years
8 under two different scenarios. In the first scenario, each year’s capital
9 expenditures are funded by 30-year debt with a 4% interest rate and one thirtieth
10 of the debt due at the end of each year. In the second scenario, all capital
11 expenditures are PAYGO funded. Both scenarios last for 39 years, the time it
12 would take for all of the bonds to be paid off. This scenario is shown in OCA
13 Exhibit DSH-5, page 1.

14 It is clear that the nominal amount of money collected from consumers
15 under debt financing, \$2,025,000,000, is greater than the \$1,405,000,000 collected
16 under the PAYGO scenario. However, this comparison does not take into account
17 the customers’ time value of money which is important because the PAYGO
18 method collects more money in the early years. The Present Value of Customer
19 Provided Funds columns show the discount rate, which results in customers, as a
20 group, being indifferent between debt funding and PAYGO funding because the
21 present values of the two choices are equal.

1 The results on OCA Exhibit DSH-5, page 2, show that PAYGO is the low
2 cost way to go for customers (\$1.022 billion PAYGO v. \$1.054 billion debt
3 funding) when, as a group, the customers' actual discount rate (cost of money) is
4 less than the "breakeven" discount rate shown on page 1. Conversely, the results
5 on page 3 show that debt funding is the low cost way to go (\$915 million debt
6 funding v. \$955 million PAYGO) for customers when the customers' cost of
7 money is greater than the "breakeven" discount rate.

8 **Q: What is the current cost of funds for PWSA's customers as a group?**

9 A: OCA Exhibit DSH-4 provides a range of consumer cost of funds rates based on
10 how the funds are used. Credit cards with unpaid balances were the highest,
11 15.91%. Next is 24-month personal loans at 9.46% and the lowest is 60-month
12 new car loans at 4.96%. All of these rates exceed the 4.413181875% "breakeven"
13 rate on OCA Exhibit DSH-5 page 1.

14 **Q: What does this mean for the current proceeding?**

15 A: It means that the cost incurred by customers, as a group, to provide PAYGO funds
16 exceeds the cost they incur to provide the funds required by the debt service
17 coverage ratio.

18 **Q: Why do you include the funds remaining after debt service in your PAYGO**
19 **recovery?**

1 A: PWSA uses the funds generated by the debt service coverage ratio that exceed the
2 debt service requirements for other PWSA purposes. The need for the funds in
3 excess of the actual debt service requirement is independent of the means used to
4 finance PWSA's capital projects. Therefore, I included these funds in the PAYGO
5 analysis to keep a proper comparison.

6 **Q: Do the results of your analysis depend on the value of the debt service**
7 **coverage ratio?**

8 A: No, they do not. I replaced the 1.25x coverage ratio on page 1 of OCA Exhibit
9 DSH-5 with PWSA's 1.18x proposed debt service coverage ratio. The results are
10 shown on page 4 of OCA Exhibit DSH-5. Like page 1, page 4 shows the present
11 value of the funds collected from customers through debt financing equals the
12 present value of the funds collected from customers under PAYGO financing.

13 **Q: Do you have any further comments concerning PAYGO versus debt**
14 **financing?**

15 A: Yes. PAYGO results in a mismatch between customers who pay the cost of the
16 assets and the customers who actually receive the benefits of the assets. This is
17 easy to see on page 1 of OCA Exhibit DSH-5. Under the debt financing scenario,
18 the Debt Service column shows the annual cost to customers while the Total
19 Customer Required Funds column under the PAYGO scenario show the annual
20 cost to customers under that method.

1 Under the PAYGO scenario, customers in the first ten years pay all of the
2 all of the capital expenditure costs while customers and customers after that pay
3 none of the capital costs. Under the debt financing scenario, these costs are spread
4 over customers during the entire time frame.

5 **Q: Does this conclude your direct testimony?**

6 A: Yes, it does. I reserve the right to supplement this testimony should additional
7 information become available.

DAVID S. HABR

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Nipomo, CA 93444-5020
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515-229-7388 (W)

SUMMARY

Ph.D. economist with over thirty five years of applied economic and financial experience in utility regulation. Has special expertise in rate of return, mergers, and asset transactions. Was instrumental in determining the methodology used in class cost of service and rate design. Solid technical background with testimony that is very clear and defensible under cross examination. Recognized by the Governor of Iowa for his knowledge and understanding of public utilities' operations and his fair and balanced judgment.

PROFESSIONAL EXPERIENCE

Habr Economics January 2009 – Present

Habr Economics established in January 2009 after a successful career in public utility regulation. The firm specializes in rate of return, mergers, asset transactions, and general policy issues.

**Consumer Advocate Division,
Iowa Department of Justice November 1987 – December 2008**

Chief, Technical Bureau July 1989 – December 2008

Leader of the Consumer Advocate Division's technical staff. Staff's expertise includes accounting, economics, finance, and electrical engineering. Members testify on matters ranging from the cost of capital, rate design, and transmission line location to optimal programs for demand side management. Disputed amounts have ranged from \$1 million to over \$100 million.

- Testified as an expert witness in over 45 cases on the cost of common equity, the overall cost of capital, and other economic and financial matters including utility mergers, asset acquisitions, and competitive market analysis. Testimony successfully defended under strenuous cross examination.
- Initiated studies on electric restructuring which demonstrated that electric deregulation could cost Iowa customers a minimum of \$200 million per year. These un-refuted results helped the efforts which lead to restructuring being rejected in Iowa.
- Achieved consensus in settlement negotiations, represented the Office in public forums, Public Consumer Advocate Sector representative on Midwest Independent System Operator Advisory Committee, drafted legislation, and prepared and managed the OCA's \$3 million annual budget.
- Identified and hired the professional staff needed to expand from a six to a 17 person technical staff in 1989. Staff educational level ranges from B.A.'s to Ph.D.'s. At December 31, 2008 staff's average time with the Office was 19 years.

David S. Habr, Page 2

Head, Technical Section November 1987 – July 1989
Hired to establish the Consumer Advocate's initial six person technical staff and advise the Consumer Advocate and legal staff on economic matters. Staff's main goal was to provide the attorneys with technical assistance on accounting, economics, engineering, financial, and rate design matters.

- Testified as an expert witness on the cost of common equity, the overall cost of capital, and other economic or financial matters.
- Integrated the use of bond betas to develop a “risk premium” method of estimating common equity cost rates based on the Capital Asset Pricing Model.

**Utilities Division,
Iowa Department of Commerce September 1981 – November 1987**

Utility Specialist September 1981 – November 1987

- Determined cost of common equity and overall cost of capital for various utility companies. Presented the analysis as written testimony and was subject to cross-examination on the testimony.
- Completed article integrating brokerage fees and flotation cost in the discounted cash flow model which was accepted for publication in the January 1988 issue of the National Regulatory Research Institute Quarterly Bulletin. Presented a paper on the use of double leverage in determining the cost of capital for utility subsidiaries of a holding company to the Economics and Finance Subcommittee at the 1987 Winter Meeting of the National Association of Regulatory Utility Commissioners.
- Refined and improved the accuracy of the computer program used to calculate the weighted cost of capital for rate case presentation.

Private Consulting Practice September 1980 – September 1981

- Estimated damages in two antitrust cases; helped develop a brief in a third antitrust case.
- Testified on a telephone rate design issue before the Iowa State Commerce Commission and on alternative benefit payment methods before the Iowa Industrial Commission.

Mitchell & Mitchell Economists, Ltd. October 1979 – August 1980

- Organized and developed the economics group. Secured and completed contract with Northwestern Bell to develop a revenue forecasting model. Secured and completed contract with City of Des Moines to conduct a feasibility study for the Neighborhood Business Revitalization Program.

Drake University September 1973 – June 1979

- Taught graduate and undergraduate courses in the economics program. Courses included Managerial Economics (M.B.A. Program), Government Regulation of Business, Public Utilities, and Transportation.
- Served on University Business Affairs Committee for four years; committee chair 1978-79. Faculty advisor, local chapter of Omicron Delta Epsilon (economics honor society) 1973-79.

EDUCATION

Ph.D. (Economics) Washington State University

Dissertation: "The Returns to Advertising: An Analysis of the Relationship Between Advertising and Liquor Sales in the State of Washington"

M.A. (Economics) University of Nebraska – Lincoln

B.A. (Economics) University of Nebraska – Lincoln

PROFESSIONAL ACTIVITIES

Activities and Memberships: Developed and taught an antitrust economics class at the Drake Law School Fall 1981 and taught the macroeconomics class in the Drake M.B.A. program Spring and Fall 1987. Member of the National Association of State Utility Consumer Advocates' Economics and Finance Committee 1990 – 2008 and the NARUC Ad Hoc Committee on Diversification (1986 – 1987).

David S. Habr, Page 4

Regulatory Proceedings in Which Dr. Habr Has Filed Testimony

1. Northwestern Bell Telephone Company (Iowa State Commerce Commission Docket No. RPU-81-40, Direct January 1982), Cost of equity issues.
2. Northwestern Bell Telephone Company (Iowa State Commerce Commission Docket No. RPU-82-49, Direct March 1983), Rate of Return.
3. MCI Telecommunications Corporation (Iowa State Commerce Commission Docket No. RPU-84-2, Direct 1984), Competitiveness of Long Distance Markets.
4. Northwestern Bell Telephone Company (Iowa State Commerce Commission Docket No. RPU-84-7, Direct June 1984), Rate of Return.
5. INVESTIGATION INTO COMPETITION IN COMMUNICATIONS SERVICES AND FACILITIES (Iowa State Commerce Commission Docket No. INU-84-6, October 1984), Workable Competition and Cost Allocation.
6. Peoples Natural Gas Company (Iowa State Commerce Commission Docket No. RPU-84-42, Direct December 1984), Capital Structure.
7. Union Electric Company (Iowa State Commerce Commission Docket No. RPU-85-9, Direct August 1985), Flotation Costs.
8. Iowa Public Service Company -- Gas (Iowa State Commerce Commission Docket No. RPU-85-14, Direct September 1985), Rate of Return.
9. INVESTIGATION INTO COMPETITION IN MTS, WATS, AND PL SERVICES (Iowa State Commerce Commission Docket No. INU-83-3, October 1985), Workable Competition.
10. Iowa Electric Light and Power Company – Gas (Iowa State Commerce Commission Docket No. RPU-85-31, Direct February 1986), Rate of Return.
11. Iowa Electric Light and Power Company – Electric (Iowa Utilities Board Docket No. RPU-86-7, Direct July 1986), Capital Structure.
12. Peoples Natural Gas Company, A Division of Utilicorp United, Inc. (Iowa Utilities Board Docket No. RPU-86-11, Direct September 1986), Rate of Return.
13. Great River Gas Company (Iowa Utilities Board Docket No. RPU-86-12, Direct September 1986), Rate of Return.
14. Iowa Power and Light Company – Electric (Iowa Utilities Board Docket No. RPU-87-2, Direct, June 1987, Rebuttal, October 1987), Capital Structure.

David S. Habr, Page 5

15. Iowa Public Service Company – Gas (Iowa Utilities Board Docket No. RPU-87-3, Direct December 1987), Rate of Return.
16. Iowa Public Service Company – Electric (Iowa Utilities Board Docket No. RPU-87-6, Direct April 1988, Rebuttal August 1988), Rate of Return, Weather Normalization.
17. Iowa Southern Utilities Company and Ottumwa Water Works (Iowa Utilities Board Docket No. AEP-88-1, Direct May 1989, Rebuttal May 1989), Capacity and Energy Rates for a Small Hydro.
18. DEREGULATION OF INTERLATA INTEREXCHANGE MESSAGE TELECOMMUNICATIONS SERVICES (MTS), WIDE AREA TELECOMMUNICATIONS SERVICE (WATS), CHANNEL SERVICE (PRIVATE LINE), AND CUSTOM NETWORK SERVICE (Iowa Utilities Board Docket No. INU-88-2, September 1988), Strength of Competitive Market Forces.
19. Iowa Southern Utilities Company (Iowa Utilities Board Docket No. RPU-89-7, Direct February 1990, Rebuttal April 1990), Rate of Return.
20. Iowa Electric Light and Power Company – Electric (Iowa Utilities Board Docket No. RPU-89-9, Direct April 1990, Rebuttal May 1990), Cost of Common equity, Double Leverage.
21. Iowa Resources, Inc. and Midwest Energy Company (Iowa Utilities Board Docket No. SPU-90-5, Direct June 1990, Rebuttal June 1990), Utility Holding Company Merger.
22. Iowa Electric Light and Power Company – Gas (Iowa Utilities Board Docket No. RPU-90-7, November 1990), Cost of Common Equity, Double Leverage.
23. Iowa Southern Utilities Company – Electric (Iowa Utilities Board Docket No. RPU-90-8, Direct August 1990, Rebuttal January 1991), Rate of Return.
24. Rochester Telephone Co. et al (Iowa Utilities Board Docket No. SPU-91-3, Direct June 1991, Rebuttal June 1991), Merger Analysis.
25. Midwest Gas, a Division of Iowa Public Service Company (Iowa Utilities Board Docket No. RPU-91-5, Direct October 1995, Rebuttal of Intervenor November 1991, Rebuttal December 1991), Cost of Common Equity, Acquisition Adjustment.
26. Iowa Public Service Company – Electric (Iowa Utilities Board Docket No. RPU-91-6, Direct August 1991, Rebuttal January 1992), Cost of Common Equity.
27. Iowa Southern Utilities Company – Electric (Iowa Utilities Board Docket No. RPU-91-8, Direct September 1991, Rebuttal February 1992, Additional Rebuttal April 1992), Cost of Common Equity.

David S. Habr, Page 6

28. Iowa Electric Light and Power Company – Electric (Iowa Utilities Board Docket No. RPU-91-9, Direct January 1992, Rebuttal of Intervenor February 1992, Rebuttal March 1992), Cost of Common Equity.
29. Iowa Electric Light and Power Company and Union Electric Company (Iowa Utilities Board Docket No. SPU-92-7, Direct April 1992), Asset Purchase Analysis.
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RATING METHODOLOGY US Municipal Utility Revenue Debt

This rating methodology replaces "US Municipal Utility Revenue Debt", last revised on December 15, 2014. We have updated some outdated links and removed certain issuer-specific information.

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Summary

This methodology explains how we evaluate the credit quality of essential service US municipal utility revenue bonds. The approach described in this methodology applies to six basic categories of municipal utilities: water distribution, gas distribution, electric distribution, sanitary sewerage, stormwater disposal, and solid waste disposal.¹

The primary factors that drive our credit analysis for these types of utilities are the size and health of the system and its service area, the financial strength of its operations, the legal provisions governing its management, and the strength of its rate management and regulatory compliance.

We intend for this methodology to help investors, municipalities, utilities, and other interested market participants understand how key quantitative and qualitative risk factors are likely to affect ratings in the municipal utility sector. This document does not offer an exhaustive treatment of all factors that are reflected in our ratings, but should enable the reader to understand the considerations that are usually most important for ratings in this sector. While reflecting many of the same core principles that we have used in assigning ratings to this sector, this methodology uses a scorecard that quantifies several factors that we previously evaluated in qualitative ways.

The purpose of the scorecard is to provide a reference tool that market participants can use to approximate most credit profiles within the US municipal utility sector. The scorecard provides summarized guidance for the factors that we generally consider most important in assigning ratings to these issuers. However, the scorecard is a summary that does not include every rating consideration. The weights the scorecard shows for each factor represent an approximation of their importance for rating decisions. In addition, the scorecard was built based on historical results, while our ratings are based on forward-looking expectations. As a result, we would not expect the scorecard-indicated outcome to match the actual rating in every case.

THIS RATING METHODOLOGY WAS UPDATED ON OCTOBER 10, 2019. WE HAVE UPDATED SOME OUTDATED REFERENCES AND ALSO MADE SOME MINOR FORMATTING CHANGES.

¹ Different methodologies are used to assign ratings to municipal utility districts, global regulated water utilities, regulated electric and gas utilities, electric generation and transmission cooperatives, and waste to energy projects. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Introduction

This methodology covers debt secured by the revenues generated by US municipal utilities providing monopolistic services essential to public health and functional economies.

The security for a municipal utility revenue bond is typically defined in a bond resolution or a trust indenture, which acts as a contract between the utility and its bondholders. The resolution or indenture most often identifies the bond's security as a lien on the net revenues of the system after the payment of regular operating and maintenance expenses.

The sector is varied and fragmented. US municipal utilities provide many different services whose rates or fees can secure debt. The utilities mostly fall into one or more of six basic categories:

- 1) **Water utilities** take water from the ground, a river, a lake, or in special cases the ocean, treat it to a potable standard, and distribute it to customers for drinking, cleaning, and commercial, industrial, or agricultural uses. These utilities can be involved in any or all of the functions of water supply: water treatment, long-distance transmission, and retail water distribution. Some water utilities have no treatment capacity and purchase potable water wholesale.
- 2) **Gas utilities** take natural gas from a wholesale² pipeline, odorize it for safety detection, and pressurize it and deliver it to customers through a pipe network for uses such as heating, cooking, or commercial and industrial applications. Some municipal gas systems may encompass their own natural gas supplies.
- 3) **Electric utilities** purchase electricity³ from wholesale suppliers and deliver it to residential, commercial, and industrial customers for a wide range of power uses.
- 4) **Sanitary sewer** utilities collect and treat wastewater, discharging it into a waterway or injecting it underground, and landfilling or incinerating the residual sludge. Some sewer utilities with no treatment capacity gather wastewater and transmit it to another utility that treats it.
- 5) **Stormwater** utilities collect and treat rainwater before discharging it into a body of water such as an ocean or a river. While every city or county addresses stormwater drainage as an integral element of its streets and highways, the stormwater systems that require capital markets financing are typically large in scale and are necessary to avert flooding from heavy seasonal rainfall in hilly areas.
- 6) **Solid waste** utilities collect residential or commercial refuse and dispose of it through landfills, waste-to-energy plants, or other waste-disposal processes. A solid waste system can be complete or collection-only, relying on another municipal or private entity for long-haul removal and disposal through landfill or incineration.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody.com for the most updated credit rating action information and rating history.

² This methodology covers gas distribution utilities. These utilities purchase their supply from providers covered under the regulated electric and gas utilities methodology, or other providers. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

³ Only those municipal electric utilities that generate less than 20% of their own power are covered by this methodology. We rate electric generation utilities under different methodologies. For information, see our methodology that describes general principles related to US public power electric utilities with generation ownership exposure and also our methodology that describes general principles related to US municipal joint action agencies. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Defining the municipal utility universe

This methodology covers essential-service utilities that operate as departments, boards, or independent authorities of US states or local governments.

States and subdivisions of states, such as counties and cities, often issue bonds secured by the net revenues generated by a system operated directly under their auspices, such as a city water department. Other times, states or state subdivisions create an independent authority or special purpose district that operates the system and issues the bonds. This distinction is usually unimportant for rating purposes, although in some cases a separate authority has beneficial management expertise.

This methodology focuses on revenue bonds for essential-service functions. Other types of public utilities issue bonds backed by revenues charged for services such as telephone, cable television, or parking. These services are typically competitive and subject to greater elasticity in pricing and utilization. Bonds secured by revenues generated by these services are not rated under this methodology. Also not rated under this methodology are utility revenue bonds whose rating is ultimately based on a General Obligation guaranty. Lastly, the electric utilities covered under this methodology are typically retail distributors of electricity mostly generated elsewhere. Electric generation utilities, municipal waste-to-energy facilities, and US municipal joint action agencies are rated under separate methodologies.⁴

The credit quality of essential-service utility revenue bonds is generally strong. Its numerous fundamental strengths include:

- 1) The provision of essential services, usually in a government-protected monopoly
- 2) Typically unregulated and independent rate-setting authority
- 3) The ability to discontinue service to delinquent accounts and in many cases to put a lien on the property for nonpayment
- 4) Utility cost burdens that are typically low relative to household income and to tax burdens
- 5) A generally strong federal and state regulatory framework that is designed to keep utilities functioning in order to protect public health and achieve environmental goals
- 6) A "special revenue" designation that may insulate a utility from a parent's bankruptcy

The Relationship Between General Obligation (GO) and Utility Revenue Bond Ratings

A municipality's GO credit quality may directly affect the strength of its associated utility systems. This section outlines the broad principles that apply when assessing the credit linkages between a municipality's GO and utility debt. These broad principles are meant to enhance transparency around our view of the relationship between related ratings and explain why, in most cases, the ratings of GO and associated utility revenue debt are and will remain relatively close.

Municipal utility debt is generally exposed to similar credit strengths and pressures as the GO and can thus expect to experience simultaneous credit improvement or deterioration. Examples of credit linkages between the GO and utility debt include:

- » Economy: Utility systems usually rely on a coterminous or overlapping economic base and service area.

⁴ A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

- » Legal structure: Utility bond indentures sometimes contain events of default tied to the bankruptcy or insolvency of the general government.
- » Finances and Debt: Cash can often flow between the two entities, sometimes with a formal funding mechanism. Debt and other long-term liabilities are often paid by the same group of constituents. GO and utility issuers may also be exposed to the same pension plan.
- » Management and Governance: Management of the city and the utility may be the same or have close ties. For instance, city management may appoint the board of the utility or have the power to affect enterprise rates.
- » Capital Markets: The GO and the utility issuer may need to access the same capital markets for funding.

Because of these linkages, in most cases, ratings of a municipality's utility debt will typically be within two notches of its GO rating.

There are, however, cases where a utility's credit strength may be sufficiently independent from its associated GO rating to justify a larger notching difference. We expect these cases to be rare, and they would likely include several of the following characteristics:

- » An unusually weak GO rating which is driven by idiosyncratic factors less relevant to the utility's credit strength.
- » A non-coterminous service area, so that utility revenues are derived from a larger and more diversified base.
- » A closed loop flow of funds, wherein the GO issuer is unable to access utility revenues.
- » A strict separation of accounts and assets.
- » The absence of rating triggers tied to the GO credit quality in utility financings.
- » Separation of management and governance.

Conversely, a utility rating more than two notches below its associated GO generally has one or more of the following characteristics:

- » An unusually weak utility rating which is driven by factors less relevant to the general government's credit strength.
- » A utility service that is narrower and less diverse than the municipality as a whole.
- » A lack of expectation that the general government would transfer funds to assist a utility experiencing financial distress.
- » A strict separation of accounts and assets.
- » The absence of rating triggers tied to the utility credit quality in GO financings.
- » Separation of management and governance.

Essential service revenue bonds in bankruptcy

An important property of public utility revenue bonds is that they enjoy a potential moat from a general government's bankruptcy. Under Chapter 9 of the US bankruptcy code, a lien on "special revenue" bonds remains valid and enforceable even if the issuer is granted bankruptcy protection.

The potential survival through bankruptcy of a lien on the net revenues of a utility system is a key strength. When a debtor is granted bankruptcy protection, its unsecured assets are subject to an automatic stay, which freezes outflows unless approved by the bankruptcy judge. An asset secured by a lien that is not subject to the automatic stay enjoys a credit advantage over a related General Obligation credit that is subject to the stay.

Further, a special revenue bond is less susceptible to adjustment in bankruptcy if its lien leads to an interpretation of the bonds as enjoying secured status.

Although the bankruptcy code establishes these strengths of a special revenue bond, Chapter 9 remains largely untested. Case law offers few precedents, and only a handful of examples to support the assertion that a special revenue designation protects revenue bonds in bankruptcy.

The political reality is that utility systems are often major cash-generating assets that other stakeholders frequently would like to bring into bankruptcy negotiations. Moreover, bankruptcy judges in some cases have allowed the cash flows generated by special revenue systems to pay the legal costs of related parents in bankruptcy.

It is premature to conclude that utility revenue bonds are completely insulated from Chapter 9 bankruptcies, and the risks and costs of a general government bankruptcy remain considerable.

The Scorecard

The municipal utility scorecard (see Exhibit 1) is a tool providing a composite score of a utility's credit profile based on the weighted factors we consider most important, universal and measurable, as well as possible notching factors dependent on individual credit strengths and weaknesses. The scorecard is designed to enhance the transparency of our approach by identifying critical factors as a starting point for analysis, along with additional considerations that may affect the final rating assignment.

The scorecard is not a calculator. Its purpose is not to determine the final rating, but rather to provide a standard platform from which to begin viewing and comparing municipal utility credits. It, therefore, acts as a starting point for a more thorough and detailed analysis.

The scorecard-indicated outcome will not match the actual rating in every case, for a number of reasons including the following:

- » Our methodology considers forward-looking expectations that may not be captured in historical data.
- » The scorecard is a summary that does not include every rating consideration.
- » In some circumstances, the importance of one factor may escalate and transcend its prescribed weight in this methodology.

EXHIBIT 1

Municipal Utility Scorecard Factors

Broad Scorecard Factors	Factor Weighting	Subfactors	Subfactor Weighting
System Characteristics	30%	Asset Condition (Remaining Useful Life)	10%
		Service Area Wealth (Median Family Income)	12.5%
		System Size (O&M)	7.5%
Financial Strength	40%	Annual Debt Service Coverage	15%
		Days Cash on Hand	15%
		Debt to Operating Revenues	10%
Management	20%	Rate Management	10%
		Regulatory Compliance and Capital Planning	10%
Legal Provisions	10%	Rate Covenant	5%
		Debt Service Reserve Requirement	5%
Total	100%	Total	100%

We intentionally limited our scorecard metrics to major rating drivers that are common to most issuers. Outside of these drivers, we may adjust the scorecard score for a variety of “below-the-line” adjustments, which are more idiosyncratic factors that are likely not to apply to all issuers, but that can impact credit strength. The scorecard score is the result of the “above-the-line” score based quantitatively on the above-the-line factors, combined with any “below-the-line” notching adjustments. The scorecard score is a guideline for discussion, but does not determine the final rating. The rating is determined by a rating committee, which considers, but is not bound by, the scorecard score.

Discussion of Scorecard Factors

To arrive at a scorecard-indicated outcome, we begin by assigning a score for each subfactor. We have chosen measures that act as proxies for a variety of different service area characteristics, financial conditions, and governance behaviors that can otherwise be difficult to measure objectively and consistently. Based on the scores and weights for each subfactor, a preliminary score is produced that translates to a given rating level.

We may then move the score up or down a certain number of rating notches based on additional “below-the-line” factors that we believe impact a particular utility’s credit quality in ways not captured by the statistical portion of the scorecard. This is where analytical judgment comes into play. We may also choose to make adjustments to the historical inputs to reflect our forward-looking views of how these statistics may change.

The scorecard score, combined with below-the-line notching, then provides an adjusted score. This adjusted score is not necessarily the final rating. Because some utilities’ credit profiles are idiosyncratic, one factor, regardless of its scorecard weight, can overwhelm other factors, and other considerations may prompt us to consider final ratings that differ from the scorecard-indicated outcome.

Below, we discuss each factor and subfactor, as well as the below-the-line adjustments and other considerations that we analyze within each category of this methodology.

Factor 1: System Characteristics (30%)

EXHIBIT 2

System Characteristics (30%)

		Aaa	Aa	A	Baa	Ba	B and Below
Asset Condition (10%)	Net Fixed Assets/Annual Depreciation :	> 75 years	75 years ≥ n > 25 years	25 years ≥ n > 12 years	12 years ≥ n > 9 years	9 Years ≥ n > 6 Years	≤ 6 Years
System Size (7.5%)	Water and/or sewer / Solid Waste:	O&M > \$65M	\$65M ≥ O&M > \$30M	\$30M ≥ O&M > \$10M	\$10M ≥ O&M > \$3M	\$3M ≥ O&M > \$1M	O&M ≤ \$1M
	Stormwater:	O&M > \$30M	\$30M ≥ O&M > \$15M	\$15M ≥ O&M > \$8M	\$8M ≥ O&M > \$2M	\$2M ≥ O&M > \$750K	O&M ≤ \$750K
	Gas or Electric:	O&M > \$100M	\$100M ≥ O&M > \$50M	\$50M ≥ O&M > \$20M	\$20M ≥ O&M > \$8M	\$8M ≥ O&M > \$3M	O&M ≤ \$3M
Service Area Wealth (12.5%)		> 150% of US median	150% ≥ US median > 90%	90% ≥ US median > 75%	75% ≥ US median > 50%	50% ≥ US median > 40%	≤ 40% of US median

Why it matters

This factor on the scorecard measures a utility’s capacity to fund its operations and capital needs based on the health of its capital assets, the size and diversity of its operations, and the strength and resources of its service base.

The scope of this factor is broad. Each of the subfactors contributes to an analysis of what magnitude of expenditures is necessary to keep the system functioning, and how large, diverse, and flexible the available resources are to meet those expenditures.

Subfactor 1a: Asset condition (10%)

Input: Net fixed assets divided by most recent year's depreciation, expressed in years

The condition of a utility's capital assets determines its ability to comply with environmental regulations and continue delivering adequate service with existing resources.

Depreciation is an accounting concept that acts as a proxy for the rate at which a utility's plant and equipment are aging. Central to our analysis of capital adequacy is an assessment of how utilities "fund depreciation," meaning make capital replacements and repairs to address aging plant and equipment.

The consequences of failing to fund depreciation can be costly. Implicit in this measure is the concept of deferred capital investment. Utilities that delay investing in their systems, replacing aging plant and equipment, and modernizing their facilities often find it more expensive to do so later. Capital investments are ordinarily more expensive when deferred.

Further, systems whose facilities deteriorate often run afoul of environmental regulations. The failure to fund depreciation, which will manifest as a declining useful remaining life, can lead to sewage overflows, inflow and infiltration problems, or non-compliant wastewater discharges, resulting in civil fines, litigation, or regulatory consent decrees. These are usually more expensive than funding depreciation through a prudent multi-year capital plan that replaces assets as they deteriorate or break down.

The inherent differences between types of utilities are manifested in their component parts, which can have very different useful lives. Because a solid waste utility is largely automotive-based, with collection vehicles and earthmoving equipment at the landfill, the useful life of its assets will be well under 20 years, compared to a water utility whose distribution mains and reservoir have useful lives of 40 to 100 years. We generally acknowledge and address these differences below the line.

For utilities whose asset condition ratios are not determinable, such as utilities that utilize cash accounting and do not report net fixed assets or depreciation, we are likely to assess the sufficiency of capital assets based on other available information.

Subfactor 1b: Service area wealth (12.5%)

Input: Median family income of the service area, expressed as a percentage of the US median

Most of the costs of operating a utility and maintaining its capital assets are borne by ratepayers. The income of the residents of the service base conveys the capacity of its ratepayers to bear higher rates to fund operations and capital upgrades. The median family income breakpoints in this scorecard are aligned with the ones in our US local government general obligation debt methodology.⁵

Utilities that serve lower-income ratepayers may have more difficulty implementing higher rates, if utility costs consume a considerable share of residents' budgets. The US Environmental Protection Agency (EPA) considers wastewater costs exceeding 2% of median household income to be a heavy burden, for example, a threshold that would be reached more quickly for a utility serving lower-income ratepayers.

We believe MFI is the best proxy for the wealth of a service base, but other indicators such as the poverty rate, unemployment, home foreclosures, per capita income, and median home value supplement our analysis of ratepayer capacity.

⁵ A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Subfactor 1c: System size (7.5%)

Input: Most recent year operations and maintenance expenditures, expressed in dollars

Larger systems tend to be more diverse and enjoy economies of scale. The size of a system implies the flexibility and resilience not only of its operations, but also of its service base.

Small systems present a number of risks. They are less likely to have redundancies, which allow a system to shut down some of its operations in an emergency or to make repairs without interrupting service. Small standalone water or sewer systems will typically depend upon a single supply of water or a single sewage treatment plant. They are more likely to be exposed to a concentrated customer base. They are more susceptible to the departure of a single large customer. An unexpected capital need is likely to be more costly relative to its annual budget. The collective engineering and scientific expertise is likely to be less robust than a larger system's.

We use different breakpoints for different types of systems in this subfactor, recognizing that not all types of utilities have the same cost structure. For instance, an electric distribution system is more expensive to run than a stormwater system. A distribution-only water system is likely to have a lower, more predictable cost base, but also depend on an external system for water supply and pay prices largely out of its control.

Utilities that are wholesalers to municipal government customers may exhibit operating stability not captured by size or service area wealth. Many of a utility's risks may be shifted to its municipal customers if their service contracts prevent these customers from switching providers or decreasing payments. If service contracts are so strongly worded and unconditional that municipal customers would have to pay the utility's debt service under any circumstances, then the utility's bonds may effectively represent a claim on the combined credit quality of the municipal governments.

For utilities that are exclusively wholesalers to municipal customers, we assess the customers' ("participants") credit quality, using our methodologies for general obligation bonds, lease revenue bonds, or other appropriate methodology determined by the nature of the participants' pledge to the utility.⁶ For bonds secured by a utility's net revenue pledge, we incorporate the strength of the municipal customers' credit quality as an important factor in the utility's revenue base. For utilities whose pledges are essentially a pass-through of the municipal customers' underlying pledges, we may rate their bonds using our public sector pool financings methodology, recognizing that bondholders enjoy a direct claim on the underlying municipalities' ability and willingness to pay.⁷

Below-the-line adjustments

Additional service area economic strength or diversity: We would use this adjustment, upward or downward, if the MFI statistic incompletely or inaccurately depicts that capacity of the service base to bear higher rates.

Significant customer concentration: A large exposure to a single user or industry, or a small number of users, poses substantial risks that might not be captured in MFI. We may adjust the scorecard score down if a large share of a utility's revenues comes from one or a small number of customers, or from a single industry. We would be more likely to use this adjustment for volatile, unpredictable, and mobile industries than for longer-standing, more stable ones. We are less likely to consider a wholesale customer as a factor contributing to concentration, as it is purchasing on behalf of end-users.

⁶ A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

⁷ A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Revenue per customer greatly over/under regional average: Revenue per customer conveys additional information about users' capacity for higher rates that might not be captured in MFI. We might adjust the above-the-line rating, upward or downward, if revenue per customer implies higher or lower ability to increase rates than MFI suggests.

Exposure to weather volatility, extreme conditions or market fluctuations: Large amounts of rain that infiltrate pipes or storms that destroy equipment are examples of credit risks that could result in below-the-line adjustments. Weather can also affect the prices that distribution systems pay third-party providers for electricity or natural gas.

Resource vulnerability: Water, gas, and electric distribution utilities sell a product whose availability can be limited or expensive in some cases. For instance, a water provider in a drought-stricken region may have to purchase expensive third-party water, and see declines in billable flow due to conservation efforts. We may adjust the scorecard score down if the availability of water, an adequate gas supply, or a dependable source of electricity is vulnerable or in doubt.

Sizeable or insufficient capacity margin: Our useful remaining life calculation is designed to assess the quality of existing capital assets, but it does not measure the adequacy of a system's capacity relative to demand. Areas that are growing need more water, gas, and electricity, and place greater demands on wastewater and trash disposal utilities. Systems that are close to capacity may face greater capital costs to expand in the future, suggesting larger debt burdens and posing additional risks that we may adjust the scorecard score downward for. Alternately, systems with ample capacity may be notched up, given the lack of capital spending requirements implied by the excess capacity. Further, excess capacity can sometimes imply a revenue-generating opportunity, since utilities can often sell their product or service to other parties. We are less likely to view excess capacity as a positive if it is caused by a declining user base.

Unusual depreciation practices relative to industry norms: Utilities typically have some flexibility to determine the depreciation schedules of their assets. Utilizing unreasonably long useful lives or employing other practices that distort depreciation schedules would also distort our remaining useful life calculation. We may notch a score down if an unreasonable depreciation schedule is inflating a utility's remaining useful life. Likewise, we may notch a score up if an unusually rapid depreciation schedule understates remaining useful life.

Factor 2: Financial Strength (40%)

EXHIBIT 3

Financial Strength (40%)	Aaa	Aa	A	Baa	Ba	B and Below
Annual Debt Service Coverage (15%)	> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	≤ 0.70x
Days Cash on Hand (15%)	> 250 Days	250 Days ≥ n > > 150 Days	150 Days ≥ n > > 35 Days	35 Days ≥ n > 15 Days	15 Days ≥ n > 7 Days	≤ 7 Days
Debt to Operating Revenues (10%)	< 2.00x	2.00x < n ≤ 4.00x	4.00x < n ≤ 7.00x	7.00x < n ≤ 8.00x	8.00x < n ≤ 9.00x	≥ 9.00x

Why it matters

The financial health of a utility determines its flexibility to respond to contingencies, resilience against potential short-term shocks, and cushion against a long-term unfavorable trend.

We measure utilities' financial health by looking at cash and other liquid reserves, the burden that debt places on operations, and the magnitude by which revenues are sufficient to meet expenditures.

Subfactor 2a: Annual debt service coverage (15%)

Input: Most recent year's net revenues divided by most recent year's debt service, expressed as a multiple

Debt service coverage is a core statistic assessing the financial health of a utility revenue system. The magnitude by which net revenues are sufficient to cover debt service shows a utility's margin to tolerate business risks or declines in demand while still assuring repayment of debt. Higher coverage levels indicate greater flexibility to withstand volatile revenues, unexpected outflows, or customer resistance to higher rates.

Utilities usually enter into a rate covenant under which they pledge to achieve a given level of debt service coverage each year. The covenant ensures that the utility utilizes its assets to generate sufficient income to pay bondholders.

The analysis of a utility system's debt service coverage demands ample context. If debt service escalates in future years, then the utility's current net revenues may be sufficient to cover debt service this year, but not in the future. Systems with greater revenue stability can operate comfortably at lower coverage levels. Systems with greater capital needs are likely to incur more debt, which will lead to increased debt service and decreased coverage. The debt service coverage calculation is the basis for a comprehensive analysis of a utility's financial flexibility and trend over the long term.

Rate covenants define a calculation method. These calculation methods vary, for example in the inclusion or exclusion of connection fees. Our coverage calculation will frequently differ from the coverage utilities report for purposes of complying with their rate covenants. Frequently, our analysis will consider several types of coverage, including maximum annual debt service (MADS) coverage, annual debt service coverage, coverage with and without connection fees, and coverage as calculated for the rate covenant. For entry on the scorecard, we include connection fees (when pledged) in revenues, recognizing that these are pledged revenues that are usually generated annually and are an important source of funding for expansion. If connection fees are particularly volatile, or if they represent an inordinate share of revenues, we may adjust below the line.

Subfactor 2b: Days cash on hand (15%)

Input: Unrestricted cash and liquid investments times 365 divided by operating and maintenance expenses, expressed in days

Cash is the paramount resource utilities have to meet expenses, cope with emergencies, and navigate business interruptions. Utilities with a lot of cash and cash equivalents are able to survive temporary disruptions and cash flow shortfalls without missing important payments. A large cash balance can also partially compensate for the lack of a debt service reserve fund. A low cash balance indicates poor flexibility to manage contingencies.

We include in this measure any cash or cash-equivalent that is both unrestricted and liquid. The measure does not include cash held in a debt service reserve fund, unspent bond proceeds, or cash that is restricted for capital.

Subfactor 2c: Debt to operating revenues (10%)

Input: Net debt divided by most recent year's operating revenues, expressed as a multiple

A utility's debt profile determines its leverage and fixed costs. Systems that carry a lot of debt have less ability to reduce costs if demand shrinks, and are generally more challenged to achieve higher debt service coverage.

A greater debt burden may also prohibit a utility from funding necessary capital upgrades, if a covenant prevents the issuer from incurring the debt necessary to fund those upgrades.

"Net debt" is a utility's long-term debt subtracted by debt service reserve funds.

Below-the-line adjustments

Debt service coverage (annual or MADS) below key thresholds: A debt service coverage ratio below 1 times is an important threshold, because coverage below 1 times indicates the utility is not fully covering debt service with income generated from operations. If a utility fails to achieve 1 times coverage, we may adjust the score down to reflect the financial imbalance of the utility's operations. Another key threshold that would likely prompt us to adjust the score down is if coverage were to fall below the utility's coverage covenant, even if that covenant is higher than 1 times. Management's willingness and ability to operate the system for bondholders' benefit is a crucial credit consideration, and a breach of covenant calls that willingness and ability into question. A coverage level that impedes the issuance of additional bonds under the utility's additional bonds covenant could also prompt us to adjust the score down, if we think it would prevent the utility from funding necessary capital upgrades.

Constrained liquidity position due to oversized transfers: It is common for utilities to transfer cash to their general governments regularly, either to share overhead costs, make payments in lieu of taxes for occupied property, or to help fund shared infrastructure. It is also common for parent governments to tap utilities' cash to fund General Fund operations. We may notch a utility's score down if these types of transfers are large and begin to strain its own liquidity. We are more likely to make this adjustment if the general government is operationally reliant on utility transfers and has the authority to increase them, particularly if the general government is struggling financially. Even if a utility has never transferred cash to its parent, such transfers remain a possibility⁸, one of the reasons for the relationship between a revenue rating and the GO rating of its general government.

Outsized capital needs: A utility with significant capital needs will likely need to incur additional debt not communicated in the existing debt metric. We may adjust the score downward for utilities under regulatory consent decree, or otherwise with great capital needs, that are likely to increase their debt levels.

Oversized adjusted net pension liability relative to debt, or significant actuarial required contribution underpayment: Employees of public utilities are usually members of a municipal pension plan. Most utilities either sponsor their own plan or participate in another entity's plan, and are responsible for funding their share of the plan's pension liabilities. We may adjust the score down if this liability is especially large, or if the utility has underfunded its contributions.

Significant exposure to puttable debt and/or swaps, or other unusual debt structure: The risks of a debt portfolio can be magnified if it is significantly composed of puttable debt. Utilities generally set rates with the intention of covering operating expenses and debt service in the current year. A debt put, accelerated amortization under a term-out, or other unexpected calls on a utility's resources can impose immediate and

⁸ Unless the utility's flow of funds is closed-loop. A closed-loop flow of funds is stronger than an open one for this reason.

substantial, unbudgeted cash outflows and upend that intention. We may notch a score down, potentially by several notches, if the composition of a debt portfolio, or cash-flow demands or unfavorable valuation of a swap, communicates a greater degree of risk than the existing debt metric.

Factor 3: Management (20%)

EXHIBIT 4

Management (20%)	Aaa	Aa	A	Baa	Ba	B and Below
Rate Management (10%)	Excellent rate-setting record; no material political, practical, or regulatory limits on rate increases	Strong rate-setting record; little political, practical, or regulatory limits on rate increases	Average rate-setting record; some political, practical, or regulatory limits on rate increases	Adequate rate-setting record; political, practical, or regulatory impediments place material limits on rate increases	Below average rate-setting record; political, practical, or regulatory impediments place substantial limits on rate increases	Record of insufficiently adjusting rates; political, practical, or regulatory obstacles prevent implementation of necessary rate increases
Regulatory compliance and capital planning (10%)	Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single year Capital Improvement Plan	Not fully addressing compliance issues; Limited or weak capital planning	Not addressing compliance issues; No capital planning

Why it matters

If the legal provisions establish the minimum level of financial margin at which a utility must be run, the utility's management determines the actual level at which it is run.

Utility management refers to the dynamics of setting rates, planning for capital spending, budgeting for annual expenditures, and complying with environmental regulations. All of these factors interplay with one another to determine the credit strength of a utility system.

The scorecard captures two crucial aspects of management: rate-setting and capital planning. These two aspects encompass most of what is important in running a utility: keeping the system in good working order, and paying for it.

Subfactor 3a: Rate management (10%)

User rates are the primary, and sometimes only, mechanism utilities employ to pay for their operations.

Ideally, rates increase marginally and steadily, rather than choppily. It is common for utilities to split their rates into a “base” charge (flat rate charged to all users) plus a “volumetric” charge (per unit costs based on flow/usage). Utilities funded to a greater extent by the volumetric charge face greater risks, since volume can be economically sensitive or decline because of a shift in consumption patterns.

Management's track record at setting rates appropriately and increasing them when necessary drives this score. We tend to give higher scores to utilities that set rate structures under which increases are automatic, and do not require annual approval for implementation.

Embedded into this factor is the length of time required to implement a rate increase. Many public utilities enjoy the authority to set their own rates, and can enact a rate increase in short order by majority vote of the governing board. Some utilities must give the public a few weeks or months notice before increasing rates, or choose to do so by policy or practice. Some utilities require state approval to increase rates. Utilities that need state approval often have to file a rate case subject to public objection, and in some cases the state takes a long time to approve them or denies the full rate increase.

The longer it takes a utility to implement a rate increase, the less flexibility it has to quickly generate new revenues when faced with cash flow shortfalls.

Subfactor 3b: Regulatory compliance and capital planning (10%)

The public utility sector is heavily regulated. Most public utilities are regulated by federal as well as state agencies.

The EPA enforces the Safe Drinking Water Act for water distribution utilities, the Clean Water Act for sanitary sewer and stormwater utilities, the Resource Conservation and Recovery Act for solid waste disposal systems, and the Clean Air Act for electric utilities. These statutes, and the methods employed to enforce them, are continually evolving, often intensifying over time. Additionally, many states have passed their own environmental regulations and are active enforcers.

This scorecard factor assesses utilities' compliance with relevant regulations and their plans for the capital expenditures required to comply in the future.

In addition to achieving environmental compliance, proper capital planning ensures the continued delivery of the product or service and the ongoing generation of revenues.

During our reviews, we look for indications of potential compliance gaps, such as environmental litigation, a delay in renewing a permit, or a consent decree with a state or federal enforcement body.

Below-the-line adjustments

Unusually strong or weak capital planning: Continued violations of environmental laws and the associated litigation can impose extraordinary costs on utilities. We may notch the score down if these costs threaten to overwhelm a system's resources, in the form of a large consent decree, lawsuit, or other costs. Alternately, we may notch the score up if a utility's capital planning is particularly sophisticated or forward-looking. More sophisticated and forward-looking capital management is more important for systems facing resource vulnerability or extreme weather volatility.

Factor 4: Legal provisions (10%)

EXHIBIT 5

Legal Provisions (10%)	Aaa	Aa	A	Baa	Ba	B and Below
Rate Covenant (5%)	> 1.30x	≥ n 1.30x > 1.20x	≥ n 1.20x > 1.10x	≥ n 1.10x > 1.00x		≤ 1.00x
Debt Service Reserve Requirement (5%)	DSRF funded at MADS	DSRF funded at lesser of standard 3-prong test	DSRF funded at less than 3-prong test OR springing DSRF	NO explicit DSRF; OR funded with speculative grade surety		

Why it matters

The legal provisions of a public utility revenue bond form the backbone of its security.

When a municipality assigns its General Obligation pledge to a bond, it has promised to do whatever it has to do to cover debt service, in most cases from any revenues or resources at its disposal.

A utility revenue bond enjoys no such open-ended pledge, making the legal edifice of the bond critical to bondholder security. Most commonly, the legal security for municipal utility revenue bonds is a lien on the net revenues of the system. Occasionally, bondholders enjoy a lien on the gross revenues of a system. We ordinarily do not consider a gross revenue pledge as materially stronger than a net revenue pledge, because systems need to pay operating and maintenance costs in order to remain functional.

The linchpin of a bond's legal structure is its covenants: the legal compulsions the municipal utility agrees to when issuing the bonds.

Utilities abide by many different types of covenants. We consider three to be the most important: the rate covenant, the additional bonds test, and the debt service reserve fund. Also crucial in the analysis of a revenue bond's legal structure is whether the flow of funds is open-loop (accessible by another government entity) or closed.

Strong covenants bind the utility to utilize its assets to benefit bondholders by operating with a comfortable financial margin, not taking on too much debt, and maintaining adequate cash available to pay debt service. Weak or nonexistent covenants allow the utility to operate on a thin margin or even at a net loss, incur a lot of leverage, transfer its money to other government entities, or maintain inadequate cash, in ways that are detrimental to bondholders.

Covenants specify the minimum factors management must legally abide by. Utilities frequently exceed the minimum. Many of our ratings represent the expectation of performance at levels that exceed the covenants.

Subfactor 4a: Rate covenant (5%)

Input: Covenant governing net revenues (operating revenues minus operating expenditures net of depreciation) divided by annual debt service, expressed as a multiple

The rate covenant is a legal pledge to set rates such that net revenues will be sufficient to cover debt service at a prescribed level. For example, a covenant may bind a utility to ensure that net revenues cover debt service by 1.2 times. If net revenues fall short of this covenant in one year, the utility must raise rates to achieve a compliant coverage level the following year.

The rate covenant takes many forms. Some utilities pledge for net revenues to cover current year annual debt service by a given level. Others pledge to cover average annual debt service throughout the life of the bonds at that level. A strong coverage requirement would be for net revenues to cover maximum annual debt service (MADS) by a certain level.

Some rate covenant formats are materially weaker than this. Some utilities allow a "rolling" calculation, which includes outstanding cash from prior years' surpluses as part of the resources available to cover debt service. Many rate covenants allow connection fees to be included in available operating revenues.

The above-the-line coverage factor assumes the covenant is an annual debt service coverage calculation. We can adjust for any departures from this format below the line, upward or downward.

Subfactor 4b: Debt service reserve requirement (5%)

Input: Debt service reserve requirement

Many issuers agree to hold a specified amount of cash or other resources in a debt service reserve fund (DSRF), which the trustee can tap to pay debt service in the event that net revenues are inadequate. The DSRF covenant ordinarily requires the utility to replenish any draws from the DSRF.

The DSRF protects bondholders by assuring the payment of debt service even if net revenues fall short in one year.

DSRF funds can be funded with cash, or with surety policies from an insurer. We generally consider cash to be superior to a surety, although this is unlikely to materially affect the rating as long as the surety provider is rated investment grade.

One commonly used DSRF requirement is known as the "three-pronged test." Under tax law, the Internal Revenue Service limits the earning of interest on proceeds of a tax-exempt bond unless the invested proceeds comply with the three-pronged test. Under that test, the DSRF must be the lesser of 10% of principal, MADS, or 1.25 times average annual debt service. A DSRF set at the three-pronged test is usually weaker than one funded at MADS.

Revenue bonds have been issued without a DSRF in the past. This has resulted in a number of utilities with some bonds secured by a DSRF and other parity bonds secured by the same lien but no DSRF. We have rarely distinguished ratings between these parity bonds. The DSRF is a last-resort security measure, and most utilities comply with their coverage covenants and never have to tap their DSRF. We are most likely to distinguish between DSRF-secured bonds and bonds with no DSRF if the system holds narrow liquidity. A system operating with abundant liquidity can use its operating cash to meet debt service shortfalls, effectively executing a similar function to the DSRF. The combination of narrow liquidity and no DSRF exposes bondholders to greater risks of interrupted debt service payments, and is therefore more likely to be reflected in ratings.

For a utility whose debt is mostly, but not all, secured by a DSRF, we will still enter the DSRF requirement into the scorecard. For a utility whose debt is mostly not secured by a DSRF, we will adjust the DSRF entry downward⁹.

⁹ For example, if 1/3 of a utility's debt is secured by a DSRF funded at MADS and 2/3 is not secured by a DSRF at all, we may enter the DSRF requirement as a Baa.

Below-the-line adjustments

Coverage covenant other than annual debt service: Our input for the coverage covenant assumes the coverage refers to net revenue coverage of annual debt service. A "rolling" coverage covenant that includes outstanding cash, or some other modification that weakens the meaning of the covenant, may prompt us to notch the score down. Conversely, a MADS coverage covenant may prompt us to notch the score up.

Structural enhancements/complexities: The scorecard is designed to capture covenants as they are most commonly constituted, but cannot account for the myriad structures and complexities that arise in bond transactions throughout the sector. Enhancements such as a lock-box structure for debt service may lead us to notch the score up. Other shortcomings, such as a weak additional bonds test or the inclusion of cash in a coverage covenant, may lead us to notch the score down. Any characteristic of the legal provisions of a bond transaction may lead us to conclude that the scorecard does not adequately capture its risk profile.

Treatment of Different Liens on a US Municipal Utility's Net Revenues

It is common for utilities to issue debt secured by different liens on their net revenues. Senior bonds are secured by a first lien on net revenues, and subordinate bonds or loans secured by a subordinate, or junior, lien. Sometimes, utilities will issue debt secured by a third lien or lower.

Our practice is to evaluate the likelihood of default and the expected recovery in the event of default for each lien independently.

This will most commonly result in a rating distinction of one notch for each lien of subordination. In other words, if a municipal utility's senior lien is rated Aa3, its subordinate lien will most likely be rated A1 and the third lien will most likely be rated A2.

The reason for the typical one-notch-per-lien distinction is that subordinate liens are marginally more likely to default than senior liens, and subordinate liens' expected recovery in the event of default would be lower. Senior liens are typically afforded stronger legal protections under utilities' indentures, senior-lien debt service is usually paid earlier in the flow of funds, and the first lien would likely enjoy a better claim in bankruptcy.

For most investment grade municipal utilities, the probability of default for any lien is small, and so the notching distinction is driven primarily by a greater expected loss severity in the unlikely event of a default. This is comparable to our approach for ratings distinctions for different debt classes of investment grade corporations, where ratings distinctions are driven by differences in expected loss severities.¹⁰ In contrast to corporates, however, there often is not an explicit cross-default of senior municipal debt in the event of a subordinate payment default.

In some instances, we may conclude that an investment grade municipal utility's subordinate lien has a default probability and expected loss severity that is nearly as low or just as low as the senior lien (in which case we may not make a ratings distinction), or a default probability and expected loss severity that is materially higher than the senior lien (in which case we may make a ratings distinction of more than one notch).

Such a conclusion would be based on the municipal utility's management of its system with respect to its liens, and the characteristics of the legal framework governing the liens: rate covenants, additional debt provisions, and cross-default and acceleration provisions in a senior lien's variable rate debt resulting from a default on the subordinate lien, for example. If a utility has only a very small amount of senior lien debt, we may choose not to distinguish between liens.

The distinctions among a municipal utility's liens become starker when it faces a material likelihood of default or bankruptcy. For these situations, the different characteristics of the liens are likely to drive greater disparities in default probabilities and expected recoveries for disparate liens. Thus, we are more likely to employ ratings distinctions other than one notch for speculative grade municipal utilities' different liens as the Loss Given Default approach drives more of the analysis.

In nearly all instances, the ratings on the different liens of the same utility will remain closely related. The reason for this is that municipal utilities are actively managed enterprises that continually need to generate net revenues sufficient not only to cover debt service but also to fund capital needs. Even if senior lien coverage is strong, a utility that is unable to pay its junior lien debt service is not generating excess funds for capital investment and does not have capacity for capital borrowing. Thus, while subordinate liens face greater default probability and higher loss expectations based on their first-loss positions, an increased likelihood of default on a subordinate lien implies an increased likelihood of insolvency for the utility as a whole.

For this reason, we enter the debt-oriented inputs into the scorecard on a consolidated basis. For the debt to revenues factor, we enter total debt (senior and junior). For the debt service coverage factor, we enter total debt service coverage. It is the municipal utility's ability to cover all of its debt service with net revenues that determines its viability as a going concern. Even for a senior lien with a large coverage factor by net revenues, a narrow coverage of all debt service implies pressure to maintain healthy operations and generate funds sufficient for capital reinvestment.

¹⁰ For more information, see our cross-sector methodology that describes the alignment of corporate instrument ratings based on differences in security and priority of claim. A link to an index of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Appendix: Municipal Utility Revenue Bond Scorecard

EXHIBIT 6

		Aaa	Aa	A	Baa	Ba	B and Below
Numerical score		0.5 to 1.5	1.5 to 2.5	2.5 to 3.5	3.5 to 4.5	4.5 to 5.5	5.5 to 6.5
System Characteristics (30%)							
Asset Condition (10%)	Net Fixed Assets/Annual Depreciation :	> 75 years	75 years ≥ n > 25 years	25 years ≥ n > 12 years	12 years ≥ n > 9 years	9 Years ≥ n > 6 Years	≤ 6 Years
Service Area Wealth (12.5%)		> 150% of US median	150% ≥ US median > 90%	90% ≥ US median > 75%	75% ≥ US median > 50%	50% ≥ US median > 40%	≤ 40% of US median
System Size (7.5%)	Water and/or Sewer/ Solid Waste:	O&M > \$65M	\$65M ≥ O&M > \$30M	\$30M ≥ O&M > \$10M	\$10M ≥ O&M > \$3M	\$3M ≥ O&M > \$1M	O&M ≤ \$1M
	Stormwater:	O&M > \$30M	\$30M ≥ O&M > \$15M	\$15M ≥ O&M > \$8M	\$8M ≥ O&M > \$2M	\$2M ≥ O&M > \$750K	O&M ≤ \$750K
	Gas or Electric:	O&M > \$100M	\$100M ≥ O&M > \$50M	\$50M ≥ O&M > \$20M	\$20M ≥ O&M > \$8M	\$8M ≥ O&M > \$3M	O&M ≤ \$3M
Financial Strength (40%)							
Annual Debt Service Coverage (15%)		> 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	≤ 0.70x
Days Cash on Hand (15%)		> 250 Days	250 Days ≥ n > 150 Days	150 Days ≥ n > 35 Days	35 Days ≥ n > 15 Days	15 Days ≥ n > 7 Days	≤ 7 Days
Debt to Operating Revenues (10%)		< 2.00x	2.00x < n ≤ 4.00x	4.00x < n ≤ 7.00x	7.00x < n ≤ 8.00x	8.00x < n ≤ 9.00x	≥ 9.00x
Management (20%)							
Rate Management (10%)		Excellent rate-setting record; no material political, practical, or regulatory limits on rate increases	Strong rate-setting record; little political, practical, or regulatory limits on rate increases	Average rate-setting record; some political, practical, or regulatory limits on rate increases	Adequate rate-setting record; political, practical, or regulatory impediments place material limits on rate increases	Below average rate-setting record; political, practical, or regulatory impediments place substantial limits on rate increases	Record of insufficiently adjusting rates; political, practical, or regulatory obstacles prevent implementation of necessary rate increases
Regulatory Compliance and Capital Planning (10%)		Fully compliant OR proactively addressing compliance issues; Maintains sophisticated and manageable Capital Improvement Plan that addresses more than a 10-year period	Actively addressing minor compliance issues; Maintains comprehensive and manageable 10-year Capital Improvement Plan	Moderate violations with adopted plan to address issues; Maintains manageable 5-year Capital Improvement Plan	Significant compliance violations with limited solutions adopted; Maintains single year Capital Improvement Plan	Not fully addressing compliance issues; Limited or weak capital planning	Not addressing compliance issues; No capital planning
Legal Provisions (10%)							
Rate Covenant (5%)		> 1.30x	1.30x ≥ n > 1.20x	1.20x ≥ n > 1.10x	1.10x ≥ n > 1.00x	≤ 1.00x ¹¹	
Debt Service Reserve Requirement (5%)		DSRF funded at MADS	DSRF funded at lesser of standard 3-prong test	DSRF funded at less than 3-prong test OR springing DSRF	NO explicit DSRF; OR funded with speculative grade surety ¹²		

¹¹ Scores as a Ba.

¹² Scores as a Baa.

Adjustments/Notching Factors

Factor 1: System Characteristics

Additional service area economic strength or diversity

Significant customer concentration

Revenue-per-Customer greatly over/under regional average

Exposure to weather volatility or extreme conditions

Resource vulnerability (1/3 or greater)

Sizable or insufficient capacity margin

Weak depreciation/reinvestment practices relative to industry norms

Other analyst adjustment to System Characteristics (Specify)

Factor 2: Financial Strength

Debt Service Coverage (Annual or MADS) below key thresholds: Additional Bonds Test and 1.00x coverage

Constrained liquidity position due to oversized transfers

Oversized capital needs

Oversized ANPL relative to debt or significant under-payment of actuarial funding requirement

Significant exposure to puttable debt and/or swaps or other unusual debt structure

Other analyst adjustment to Financial Strength factor (Specify)

Factor 3: Legal Provisions

Structural Enhancements/Complexities

Other analyst adjustment to Legal Provisions factor (Specify)

Factor 4: Management

Unusually strong or weak operational or capital planning

Other analyst adjustment to Management factor (Specify)

Other

Credit Event/Trend not yet reflected in existing data set

Scorecard-Indicated Outcome	Overall Weighted Score
Aaa	0.5 to 1.5
Aa1	1.5 to 1.83
Aa2	1.83 to 2.17
Aa3	2.17 to 2.5
A1	2.5 to 2.83
A2	2.83 to 3.17
A3	3.17 to 3.5
Baa1	3.5 to 3.83
Baa2	3.83 to 4.17
Baa3	4.17 to 4.5
Ba1	4.5 to 4.83
Ba2	4.83 to 5.17
Ba3	5.17 to 5.5
B1	5.5 to 5.83
B2	5.83 to 6.17
B3	6.17 to 6.5

Moody's Related Publications

Credit ratings are primarily determined by sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. An index of sector and cross-sector credit rating methodologies can be found [here](#).

For data summarizing the historical robustness and predictive power of credit ratings, please click [here](#).

For further information, please refer to *Rating Symbols and Definitions*, which is available [here](#).

Report Number: 1095545

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**2022 PWSA Financial Metrics Bond Rating Based
On Moody's Methodology**

Financial Metric	OCA Proposed	Rating	Rating Range	Rating Numerical Score	Metric Numerical Score	Weight	Weighted Score
Debt Service Coverage	1.18	Baa	1.25 --1.00	3.5 to 4.5	3.78	0.38	1.419
Days of Cash	134.07	A	150 -- 35	2.5 to 3.5	2.64	0.38	0.989
Debt to Operating Revenues	6.31	A	4.00 to 7.00	2.5 to 3.5	3.27	0.25	0.817
Financial Metric Weighted Average Score							3.23
A3 Rating Range							3.17 to 3.50

Ratings Range Sources: OCA Exhibit DSH-2, pages 19 and 21.

FEDERAL RESERVE statistical release



G.19

Consumer Credit
April 2021

For release at **3 p.m.** (Eastern Time)
June 7, 2021

In April, consumer credit increased at a seasonally adjusted annual rate of 5.3 percent. Revolving credit decreased at an annual rate of 2.4 percent, while nonrevolving credit increased at an annual rate of 7.6 percent.

Consumer Credit Outstanding¹
Seasonally adjusted. Billions of dollars except as noted.

	2016	2017	2018	2019 ^r	2020 ^r	2020				2021			
						Q1 ^r	Q2 ^r	Q3 ^r	Q4 ^r	Q1 ^r	Feb ^r	Mar ^r	Apr ^p
Total percent change (annual rate) ²	6.9	5.3	4.5	4.6	-0.2	0.6	-5.6	1.9	2.2	3.0	5.2	5.3	5.3
Revolving	6.9	5.9	3.7	3.6	-11.2	-7.1	-31.0	-4.1	-3.7	-3.7	3.8	1.7	-2.4
Nonrevolving ³	7.0	5.1	4.8	5.0	3.6	3.4	3.2	3.7	4.0	5.0	5.6	6.4	7.6
Total flow (annual rate) ^{2,4}	236.2	194.3	172.7	185.5	-9.5	26.5	-234.0	76.8	92.7	124.5	218.7	223.0	223.3
Revolving	62.0	56.7	37.3	38.1	-122.1	-77.7	-334.1	-40.6	-36.0	-36.3	36.9	16.6	-23.5
Nonrevolving ³	174.2	137.6	135.3	147.4	112.6	104.2	100.1	117.4	128.7	160.8	181.8	206.4	246.9
Total outstanding	3,636.4	3,830.8	4,007.0	4,192.6	4,187.8	4,203.9	4,145.4	4,164.6	4,187.8	4,218.9	4,200.3	4,218.9	4,237.5
Revolving	960.1	1,016.8	1,053.8	1,092.0	974.6	1,077.3	993.8	983.6	974.6	965.5	964.1	965.5	963.6
Nonrevolving ³	2,676.3	2,813.9	2,953.2	3,100.6	3,213.2	3,126.6	3,151.6	3,181.0	3,213.2	3,253.4	3,236.2	3,253.4	3,273.9

Terms of Credit
Not seasonally adjusted. Percent except as noted.

Commercial bank interest rates ⁵													
New car loans													
48-month	4.30	4.61	5.03	5.39	5.09	5.29	5.13	4.98	4.95	5.21	5.21	n.a.	n.a.
60-month	4.14	4.33	5.02	5.31	5.02	5.15	5.14	4.98	4.80	4.96	4.96	n.a.	n.a.
Credit card plans													
All accounts	12.35	12.89	14.22	15.05	14.71	15.09	14.52	14.58	14.65	14.75	14.75	n.a.	n.a.
Accounts assessed interest	13.56	14.44	16.04	16.98	16.28	16.61	15.78	16.43	16.28	15.91	15.91	n.a.	n.a.
Personal loans													
24-month	9.69	10.13	10.32	10.32	9.51	9.63	9.50	9.26	9.65	9.46	9.46	n.a.	n.a.
Finance companies (new car loans) ⁶													
Interest rates	5.1	5.4	6.1	6.4	5.2	6.1	4.8	5.0	5.1	4.8	n.a.	4.8	n.a.
Maturity (months)	66	67	66	67	69	68	71	68	68	67	n.a.	67	n.a.
Amount financed (dollars)	28,601	29,288	30,173	31,311	34,449	32,724	36,675	34,660	33,738	34,207	n.a.	34,207	n.a.

This release is generally issued on the fifth business day of each month. See the Statistical Release Schedule for more information.
Footnotes appear on the second and third pages.

Consumer Credit Outstanding (Levels)
Non seasonally adjusted
Billions of dollars

						2020				2021			
	2016	2017	2018	2019 ^r	2020 ^r	Q1 ^r	Q2 ^r	Q3 ^r	Q4 ^r	Q1 ^r	Feb ^r	Mar ^r	Apr ^p
Total	3,636.4	3,830.8	4,007.0	4,192.6	4,187.8	4,148.2	4,097.9	4,143.9	4,187.8	4,163.2	4,163.1	4,163.2	4,184.3
Major holders													
Depository institutions	1,562.6	1,633.2	1,687.4	1,774.1	1,687.5	1,712.7	1,646.9	1,651.4	1,687.5	1,635.1	1,637.8	1,635.1	1,644.5
Finance companies	548.4	541.3	534.4	537.7	551.4	528.5	536.4	548.6	551.4	560.5	554.4	560.5	568.8
Credit unions	396.7	439.3	481.2	498.0	505.1	495.2	498.3	503.9	505.1	496.8	501.6	496.8	499.2
Federal government ⁷	1,049.3	1,145.6	1,236.3	1,319.2	1,382.7	1,350.6	1,355.8	1,379.4	1,382.7	1,411.1	1,409.1	1,411.1	1,412.2
Nonprofit and educational institutions ⁸	41.3	35.1	31.3	27.7	25.3	26.5	25.7	25.5	25.3	25.0	25.1	25.0	24.9
Nonfinancial business	38.2	36.2	36.5	35.8	35.8	34.7	34.8	35.1	35.8	34.7	35.0	34.7	34.7
Major types of credit, by holder													
Revolving	960.1	1,016.8	1,053.8	1,092.0	974.6	1,022.0	952.6	943.8	974.6	910.3	917.1	910.3	910.9
Depository institutions	859.5	912.0	947.2	983.6	875.3	919.1	853.9	846.6	875.3	817.6	822.2	817.6	818.7
Finance companies	25.5	26.6	23.7	21.9	17.1	19.1	18.3	16.9	17.1	15.6	16.0	15.6	15.7
Credit unions	53.2	58.0	62.4	66.5	62.3	64.9	61.4	61.1	62.3	58.3	59.7	58.3	57.7
Federal government ⁷	...	...	...	...	...	...	...	...	...	...	...	...	...
Nonprofit and educational institutions ⁸	...	...	...	...	...	...	...	...	...	...	...	...	...
Nonfinancial business	21.9	20.2	20.5	20.0	20.0	18.9	19.0	19.1	20.0	18.9	19.1	18.9	18.8
Nonrevolving	2,676.3	2,813.9	2,953.2	3,100.6	3,213.2	3,126.2	3,145.2	3,200.1	3,213.2	3,253.0	3,246.0	3,253.0	3,273.4
Depository institutions	703.0	721.2	740.2	790.5	812.2	793.5	792.9	804.8	812.2	817.5	815.6	817.5	825.8
Finance companies	522.8	514.7	510.7	515.9	534.3	509.4	518.1	531.7	534.3	544.9	538.4	544.9	553.1
Credit unions	343.5	381.3	418.8	431.5	442.8	430.3	436.9	442.8	442.8	438.6	441.9	438.6	441.5
Federal government ⁷	1,049.3	1,145.6	1,236.3	1,319.2	1,382.7	1,350.6	1,355.8	1,379.4	1,382.7	1,411.1	1,409.1	1,411.1	1,412.2
Nonprofit and educational institutions ⁸	41.3	35.1	31.3	27.7	25.3	26.5	25.7	25.5	25.3	25.0	25.1	25.0	24.9
Nonfinancial business	16.3	16.0	16.0	15.8	15.8	15.8	15.8	15.9	15.8	15.8	15.9	15.8	15.8
Memo													
Student Loans ⁹	1,405.3	1,488.9	1,570.5	1,646.4	1,704.8	1,674.9	1,680.6	1,704.9	1,704.8	1,730.0	n.a.	1,730.0	n.a.
Motor Vehicle Loans ¹⁰	1,062.3	1,102.0	1,139.6	1,184.1	1,224.4	1,183.9	1,197.4	1,218.4	1,224.4	1,236.3	n.a.	1,236.3	n.a.

Footnotes

1. Covers most credit extended to individuals, excluding loans secured by real estate. Includes receivables carried on the balance sheet of the institution as well as outstanding balances of pools upon which securities have been issued; under the current accounting rule, most of those balances remain on the balance sheets of the loan originator.
2. The series for consumer credit outstanding and its components may contain breaks that result from discontinuities in source data. Percent changes are adjusted to exclude the effect of such breaks. In addition, percent changes are at a simple annual rate and are calculated from unrounded data.
3. Includes motor vehicle loans and all other loans not included in revolving credit, such as loans for mobile homes, education, boats, trailers, or vacations. These loans may be secured or unsecured.
4. Flow data represent changes in the level of credit due to economic and financial activity, and exclude breaks in the data series due to changes in methodology, source data, and other technical aspects of the estimation that could affect the level of credit.
5. Interest rates are annual percentage rates (APR) as specified by the Federal Reserve's Regulation Z. Interest rates for new-car loans and personal loans at commercial banks are simple unweighted averages of each bank's most common rate charged during the first calendar week of the middle month of each quarter. For credit card accounts, the rate for all accounts is the stated APR averaged across all credit card accounts at all reporting banks. The rate for accounts assessed interest is the annualized ratio of total finance charges at all reporting banks to the total average daily balances against which the finance charges were assessed (excludes accounts for which no finance charges were assessed).

Consumer Credit Outstanding (Flows)
Not seasonally adjusted
Billions of dollars, annual rate

	2016	2017	2018	2019 ^r	2020 ^r	2020				2021			
						Q1 ^r	Q2 ^r	Q3 ^r	Q4 ^r	Q1 ^r	Feb ^r	Mar ^r	Apr ^p
Total	236.2	194.3	172.7	185.5	-9.5	-196.2	-201.5	184.0	175.6	-98.2	-157.0	1.7	252.4
Major holders													
Depository institutions	107.9	70.6	50.6	86.6	-91.3	-264.5	-263.1	18.1	144.2	-209.6	-195.7	-33.2	113.0
Finance companies	-13.0	-7.1	-6.9	3.4	13.7	-36.8	31.3	49.0	11.1	36.3	-26.7	73.0	99.9
Credit unions	44.1	42.6	41.9	16.8	7.1	-11.3	12.6	22.1	4.9	-33.1	7.1	-57.7	28.2
Federal government ⁷	99.6	96.3	90.7	83.0	63.4	125.4	20.7	94.5	13.0	113.8	65.0	24.7	12.7
Nonprofit and educational institutions ⁸	-3.6	-6.2	-3.9	-3.6	-2.4	-4.5	-3.4	-0.9	-0.6	-1.2	-1.1	-1.5	-1.0
Nonfinancial business	1.1	-2.0	0.2	-0.7	0.0	-4.5	0.4	1.0	3.1	-4.5	-5.6	-3.6	-0.4
Major types of credit, by holder													
Revolving													
Depository institutions	62.0	56.7	37.3	38.1	-122.1	-298.8	-277.5	-35.4	123.3	-257.4	-224.3	-81.6	7.7
Finance companies	57.7	52.5	35.5	36.4	-113.0	-276.7	-260.7	-29.4	114.6	-230.7	-205.5	-55.4	13.0
Credit unions	-0.2	1.1	-2.9	-1.9	-4.8	-11.0	-3.4	-5.4	0.6	-6.0	-6.0	-5.7	1.3
Federal government ⁷	3.9	4.8	4.4	4.2	-4.3	-6.5	-14.1	-1.1	4.6	-16.1	-7.7	-17.7	-6.4
Nonprofit and educational institutions ⁸	...	...	...	...	...	...	...	...	...	...	...	...	...
Nonfinancial business	0.6	-1.7	0.3	-0.5	0.0	-4.5	0.6	0.5	3.4	-4.6	-5.1	-2.9	-0.2
Nonrevolving													
Depository institutions	174.2	137.6	135.3	147.4	112.6	102.6	76.1	219.4	52.3	159.2	67.3	83.3	244.8
Finance companies	50.2	18.2	15.1	50.3	21.7	12.2	-2.4	47.5	29.5	21.1	9.8	22.2	100.0
Credit unions	-12.8	-8.1	-4.1	5.2	18.5	-25.8	34.7	54.4	10.5	42.3	-20.7	78.7	98.7
Federal government ⁷	40.2	37.7	37.6	12.7	11.3	-4.8	26.7	23.2	0.3	-17.0	14.8	-40.0	34.7
Nonprofit and educational institutions ⁸	99.6	96.3	90.7	83.0	63.4	125.4	20.7	94.5	13.0	113.8	65.0	24.7	12.7
Nonfinancial business	-3.6	-6.2	-3.9	-3.6	-2.4	-4.5	-3.4	-0.9	-0.6	-1.2	-1.1	-1.5	-1.0
Nonfinancial business	0.5	-0.3	-0.1	-0.1	0.0	0.0	-0.2	0.5	-0.4	0.0	-0.5	-0.7	-0.3
Memo													
Student Loans ⁹	85.1	83.6	81.6	75.8	58.4	114.2	22.4	97.5	-0.4	100.7	n.a.	100.7	n.a.
Motor Vehicle Loans ¹⁰	72.3	39.7	33.7	44.5	40.3	-0.9	54.0	84.1	24.0	47.5	n.a.	47.5	n.a.

6. Covers most of the captive and non-captive finance companies. The series of finance company new car loan terms included in previous releases are discontinued. They remain available from the Data Download Program.

7. Includes student loans originated by the Department of Education under the Federal Direct Loan Program and the Perkins Loan Program, as well as Federal Family Education Program loans that the government purchased under the Ensuring Continued Access to Student Loans Act.

8. Includes student loans originated under the Federal Family Education Loan Program and held by educational institutions and nonprofit organizations.

9. Includes student loans originated under the Federal Family Education Loan Program and the Direct Loan Program; Perkins loans; and private student loans without government guarantees. This memo item includes loan balances that are not included in the nonrevolving credit balances. For additional information, see public documentation. Data for this memo item are released for each quarter-end month.

10. Includes motor vehicle loans owned and securitized by depository institutions, finance companies, credit unions, and nonfinancial business. Includes loans for passenger cars and other vehicles such as minivans, vans, sport-utility vehicles, pickup trucks, and similar light trucks for personal use. Loans for boats, motorcycles and recreational vehicles are not included. Data for this memo item are released for each quarter-end month.

r=revised. p=preliminary. n.a.=not available. ...=not applicable.

PRESENT VALUE OF DEBT FINANCING EQUALS PRESENT VALUE OF PAYGO FINANCING														
DEBT FINANCING CUSTOMER REQUIRED FUNDS									PAYCO FINANCING CUSTOMER REQUIRED FUNDS			PRESENT VALUE OF CUSTOMER PROVIDED FUNDS		
Year	Capital Expenditure	Bond Issuance Amount	Total Bonds Outstanding	Total Interest @ 4.0%	Principal	Debt Service	Debt Service Coverage Requirement 1.25x	Remaining Debt Service Funds To Support Other Needs	Payco Funds	Customer Required Funds To Support Other Needs	Total Customer Required Funds	Present Value Debt Service Coverage Requirement	Present Value of Total PAYGO Required Funds	Discount Rate
1	\$100,000,000	\$100,000,000	\$100,000,000	\$4,000,000	\$3,333,333	\$7,333,333	\$9,166,667	\$1,833,333	\$100,000,000	\$1,833,333	\$101,833,333	\$8,779,224	\$97,529,193	4.413181875%
2	\$100,000,000	\$100,000,000	\$196,666,667	\$7,866,667	\$6,666,667	\$14,533,333	\$18,166,667	\$3,633,333	\$100,000,000	\$3,633,333	\$103,633,333	\$16,663,437	\$95,058,029	4.413181875%
3	\$100,000,000	\$100,000,000	\$290,000,000	\$11,600,000	\$10,000,000	\$21,600,000	\$27,000,000	\$5,400,000	\$100,000,000	\$5,400,000	\$105,400,000	\$23,719,076	\$92,592,246	4.413181875%
4	\$100,000,000	\$100,000,000	\$380,000,000	\$15,200,000	\$13,333,333	\$28,533,333	\$35,666,667	\$7,133,333	\$100,000,000	\$7,133,333	\$107,133,333	\$30,008,287	\$90,137,041	4.413181875%
5	\$100,000,000	\$100,000,000	\$466,666,667	\$18,666,667	\$16,666,667	\$35,333,333	\$44,166,667	\$8,833,333	\$100,000,000	\$8,833,333	\$108,833,333	\$35,589,179	\$87,697,109	4.413181875%
6	\$100,000,000	\$100,000,000	\$550,000,000	\$22,000,000	\$20,000,000	\$42,000,000	\$52,500,000	\$10,500,000	\$100,000,000	\$10,500,000	\$110,500,000	\$40,516,071	\$85,276,682	4.413181875%
7	\$100,000,000	\$100,000,000	\$630,000,000	\$25,200,000	\$23,333,333	\$48,533,333	\$60,666,667	\$12,133,333	\$100,000,000	\$12,133,333	\$112,133,333	\$44,839,712	\$82,879,556	4.413181875%
8	\$100,000,000	\$100,000,000	\$706,666,667	\$28,266,667	\$26,666,667	\$54,933,333	\$68,666,667	\$13,733,333	\$100,000,000	\$13,733,333	\$113,733,333	\$48,607,504	\$80,509,128	4.413181875%
9	\$100,000,000	\$100,000,000	\$780,000,000	\$31,200,000	\$30,000,000	\$61,200,000	\$76,500,000	\$15,300,000	\$100,000,000	\$15,300,000	\$115,300,000	\$51,863,696	\$78,168,420	4.413181875%
10	\$100,000,000	\$100,000,000	\$850,000,000	\$34,000,000	\$33,333,333	\$67,333,333	\$84,166,667	\$16,833,333	\$100,000,000	\$16,833,333	\$116,833,333	\$54,649,579	\$75,860,109	4.413181875%
11			\$816,666,667	\$32,666,667	\$33,333,333	\$66,000,000	\$80,500,000	\$16,500,000		\$16,500,000	\$16,500,000	\$51,303,301	\$10,260,660	4.413181875%
12			\$783,333,333	\$31,333,333	\$33,333,333	\$64,666,667	\$80,833,333	\$16,166,667		\$16,166,667	\$16,166,667	\$48,142,265	\$9,628,453	4.413181875%
13			\$750,000,000	\$30,000,000	\$33,333,333	\$63,333,333	\$79,166,667	\$15,833,333		\$15,833,333	\$15,833,333	\$45,156,790	\$9,031,358	4.413181875%
14			\$716,666,667	\$28,666,667	\$33,333,333	\$62,000,000	\$77,500,000	\$15,500,000		\$15,500,000	\$15,500,000	\$42,337,682	\$8,467,536	4.413181875%
15			\$683,333,333	\$27,333,333	\$33,333,333	\$60,666,667	\$75,833,333	\$15,166,667		\$15,166,667	\$15,166,667	\$39,676,211	\$7,935,242	4.413181875%
16			\$650,000,000	\$26,000,000	\$33,333,333	\$59,333,333	\$74,166,667	\$14,833,333		\$14,833,333	\$14,833,333	\$37,164,087	\$7,432,817	4.413181875%
17			\$616,666,667	\$24,666,667	\$33,333,333	\$58,000,000	\$72,500,000	\$14,500,000		\$14,500,000	\$14,500,000	\$34,793,441	\$6,958,688	4.413181875%
18			\$583,333,333	\$23,333,333	\$33,333,333	\$56,666,667	\$70,833,333	\$14,166,667		\$14,166,667	\$14,166,667	\$32,556,801	\$6,511,360	4.413181875%
19			\$550,000,000	\$22,000,000	\$33,333,333	\$55,333,333	\$69,166,667	\$13,833,333		\$13,833,333	\$13,833,333	\$30,447,074	\$6,089,415	4.413181875%
20			\$516,666,667	\$20,666,667	\$33,333,333	\$54,000,000	\$67,500,000	\$13,500,000		\$13,500,000	\$13,500,000	\$28,457,527	\$5,691,505	4.413181875%
21			\$483,333,333	\$19,333,333	\$33,333,333	\$52,666,667	\$65,833,333	\$13,166,667		\$13,166,667	\$13,166,667	\$26,581,770	\$5,316,354	4.413181875%
22			\$450,000,000	\$18,000,000	\$33,333,333	\$51,333,333	\$64,166,667	\$12,833,333		\$12,833,333	\$12,833,333	\$24,813,739	\$4,962,748	4.413181875%
23			\$416,666,667	\$16,666,667	\$33,333,333	\$50,000,000	\$62,500,000	\$12,500,000		\$12,500,000	\$12,500,000	\$23,147,677	\$4,629,535	4.413181875%
24			\$383,333,333	\$15,333,333	\$33,333,333	\$48,666,667	\$60,833,333	\$12,166,667		\$12,166,667	\$12,166,667	\$21,578,124	\$4,315,625	4.413181875%
25			\$350,000,000	\$14,000,000	\$33,333,333	\$47,333,333	\$59,166,667	\$11,833,333		\$11,833,333	\$11,833,333	\$20,099,897	\$4,019,979	4.413181875%
26			\$316,666,667	\$12,666,667	\$33,333,333	\$46,000,000	\$57,500,000	\$11,500,000		\$11,500,000	\$11,500,000	\$18,708,081	\$3,741,616	4.413181875%
27			\$283,333,333	\$11,333,333	\$33,333,333	\$44,666,667	\$55,833,333	\$11,166,667		\$11,166,667	\$11,166,667	\$17,398,012	\$3,479,602	4.413181875%
28			\$250,000,000	\$10,000,000	\$33,333,333	\$43,333,333	\$54,166,667	\$10,833,333		\$10,833,333	\$10,833,333	\$16,165,266	\$3,233,053	4.413181875%
29			\$216,666,667	\$8,666,667	\$33,333,333	\$42,000,000	\$52,500,000	\$10,500,000		\$10,500,000	\$10,500,000	\$15,005,647	\$3,001,129	4.413181875%
30			\$183,333,333	\$7,333,333	\$33,333,333	\$40,666,667	\$50,833,333	\$10,166,667		\$10,166,667	\$10,166,667	\$13,915,175	\$2,783,035	4.413181875%
31			\$150,000,000	\$6,000,000	\$30,000,000	\$36,000,000	\$45,000,000	\$9,000,000		\$9,000,000	\$9,000,000	\$11,797,698	\$2,359,540	4.413181875%
32			\$120,000,000	\$4,800,000	\$26,666,667	\$31,466,667	\$39,333,333	\$7,866,667		\$7,866,667	\$7,866,667	\$9,876,207	\$1,975,241	4.413181875%
33			\$93,333,333	\$3,733,333	\$23,333,333	\$27,066,667	\$33,833,333	\$6,766,667		\$6,766,667	\$6,766,667	\$8,136,149	\$1,627,230	4.413181875%
34			\$70,000,000	\$2,800,000	\$20,000,000	\$22,800,000	\$28,500,000	\$5,700,000		\$5,700,000	\$5,700,000	\$6,563,925	\$1,312,785	4.413181875%
35			\$50,000,000	\$2,000,000	\$16,666,667	\$18,666,667	\$23,333,333	\$4,666,667		\$4,666,667	\$4,666,667	\$5,146,835	\$1,029,367	4.413181875%
36			\$33,333,333	\$1,333,333	\$13,333,333	\$14,666,667	\$18,333,333	\$3,666,667		\$3,666,667	\$3,666,667	\$3,873,018	\$774,604	4.413181875%
37			\$20,000,000	\$800,000	\$10,000,000	\$10,800,000	\$13,500,000	\$2,700,000		\$2,700,000	\$2,700,000	\$2,731,408	\$546,282	4.413181875%
38			\$10,000,000	\$400,000	\$6,666,667	\$7,066,667	\$8,833,333	\$1,766,667		\$1,766,667	\$1,766,667	\$1,711,678	\$342,336	4.413181875%
39			\$3,333,333	\$133,333	\$3,333,333	\$3,466,667	\$4,333,333	\$866,667		\$866,667	\$866,667	\$804,200	\$160,840	4.413181875%
40			\$0	\$0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
Total	\$1,000,000,000			\$598,000,000			\$2,025,000,000	\$405,000,000	\$1,000,000,000	\$405,000,000	\$1,405,000,000	\$993,325,450	\$993,325,450	

PRESENT VALUE OF DEBT FINANCING GREATER THAN PRESENT VALUE OF PAYGO FINANCING														
	DEBT FINANCING CUSTOMER REQUIRED FUNDS								PAYCO FINANCING CUSTOMER REQUIRED FUNDS			PRESENT VALUE OF CUSTOMER PROVIDED FUNDS		
Year	Capital Expenditure	Bond Issuance Amount	Total Bonds Outstanding	Total Interest @ 4.0%	Principal	Debt Service	Debt Service Coverage Requirement 1.25x	Remaining Debt Service Funds To Support Other Needs	Payco Funds	Customer Required Funds To Support Other Needs	Total Customer Required Funds	Present Value Debt Service Coverage Requirement	Present Value of Total PAYGO Customer Required Funds	Discount Rate
1	\$100,000,000	\$100,000,000	\$100,000,000	\$4,000,000	\$3,333,333	\$7,333,333	\$9,166,667	\$1,833,333	\$100,000,000	\$1,833,333	\$101,833,333	\$8,814,103	\$97,916,667	4.000000000%
2	\$100,000,000	\$100,000,000	\$196,666,667	\$7,866,667	\$6,666,667	\$14,533,333	\$18,166,667	\$3,633,333	\$100,000,000	\$3,633,333	\$103,633,333	\$16,796,105	\$95,814,842	4.000000000%
3	\$100,000,000	\$100,000,000	\$290,000,000	\$11,600,000	\$10,000,000	\$21,600,000	\$27,000,000	\$5,400,000	\$100,000,000	\$5,400,000	\$105,400,000	\$24,002,902	\$93,700,216	4.000000000%
4	\$100,000,000	\$100,000,000	\$380,000,000	\$15,200,000	\$13,333,333	\$28,533,333	\$35,666,667	\$7,133,333	\$100,000,000	\$7,133,333	\$107,133,333	\$30,488,016	\$91,578,022	4.000000000%
5	\$100,000,000	\$100,000,000	\$466,666,667	\$18,666,667	\$16,666,667	\$35,333,333	\$44,166,667	\$8,833,333	\$100,000,000	\$8,833,333	\$108,833,333	\$36,301,781	\$89,453,067	4.000000000%
6	\$100,000,000	\$100,000,000	\$550,000,000	\$22,000,000	\$20,000,000	\$42,000,000	\$52,500,000	\$10,500,000	\$100,000,000	\$10,500,000	\$110,500,000	\$41,491,513	\$87,329,755	4.000000000%
7	\$100,000,000	\$100,000,000	\$630,000,000	\$25,200,000	\$23,333,333	\$48,533,333	\$60,666,667	\$12,133,333	\$100,000,000	\$12,133,333	\$112,133,333	\$46,101,681	\$85,212,117	4.000000000%
8	\$100,000,000	\$100,000,000	\$706,666,667	\$28,266,667	\$26,666,667	\$54,933,333	\$68,666,667	\$13,733,333	\$100,000,000	\$13,733,333	\$113,733,333	\$50,174,061	\$83,103,833	4.000000000%
9	\$100,000,000	\$100,000,000	\$780,000,000	\$31,200,000	\$30,000,000	\$61,200,000	\$76,500,000	\$15,300,000	\$100,000,000	\$15,300,000	\$115,300,000	\$53,747,885	\$81,008,251	4.000000000%
10	\$100,000,000	\$100,000,000	\$850,000,000	\$34,000,000	\$33,333,333	\$67,333,333	\$84,166,667	\$16,833,333	\$100,000,000	\$16,833,333	\$116,833,333	\$56,859,984	\$78,928,414	4.000000000%
11			\$816,666,667	\$32,666,667	\$33,333,333	\$66,000,000	\$82,500,000	\$16,500,000		\$16,500,000	\$16,500,000	\$53,590,427	\$10,718,085	4.000000000%
12			\$783,333,333	\$31,333,333	\$33,333,333	\$64,666,667	\$80,833,333	\$16,166,667		\$16,166,667	\$16,166,667	\$50,488,262	\$10,097,652	4.000000000%
13			\$750,000,000	\$30,000,000	\$33,333,333	\$63,333,333	\$79,166,667	\$15,833,333		\$15,833,333	\$15,833,333	\$47,545,448	\$9,509,090	4.000000000%
14			\$716,666,667	\$28,666,667	\$33,333,333	\$62,000,000	\$77,500,000	\$15,500,000		\$15,500,000	\$15,500,000	\$44,751,319	\$8,950,864	4.000000000%
15			\$683,333,333	\$27,333,333	\$33,333,333	\$60,666,667	\$75,833,333	\$15,166,667		\$15,166,667	\$15,166,667	\$42,107,558	\$8,421,512	4.000000000%
16			\$650,000,000	\$26,000,000	\$33,333,333	\$59,333,333	\$74,166,667	\$14,833,333		\$14,833,333	\$14,833,333	\$39,598,190	\$7,919,638	4.000000000%
17			\$616,666,667	\$24,666,667	\$33,333,333	\$58,000,000	\$72,500,000	\$14,500,000		\$14,500,000	\$14,500,000	\$37,219,560	\$7,443,912	4.000000000%
18			\$583,333,333	\$23,333,333	\$33,333,333	\$56,666,667	\$70,833,333	\$14,166,667		\$14,166,667	\$14,166,667	\$34,965,325	\$6,993,065	4.000000000%
19			\$550,000,000	\$22,000,000	\$33,333,333	\$55,333,333	\$69,166,667	\$13,833,333		\$13,833,333	\$13,833,333	\$32,829,434	\$6,565,887	4.000000000%
20			\$516,666,667	\$20,666,667	\$33,333,333	\$54,000,000	\$67,500,000	\$13,500,000		\$13,500,000	\$13,500,000	\$30,806,119	\$6,161,224	4.000000000%
21			\$483,333,333	\$19,333,333	\$33,333,333	\$52,666,667	\$65,833,333	\$13,166,667		\$13,166,667	\$13,166,667	\$28,889,879	\$5,777,976	4.000000000%
22			\$450,000,000	\$18,000,000	\$33,333,333	\$51,333,333	\$64,166,667	\$12,833,333		\$12,833,333	\$12,833,333	\$27,075,471	\$5,415,094	4.000000000%
23			\$416,666,667	\$16,666,667	\$33,333,333	\$50,000,000	\$62,500,000	\$12,500,000		\$12,500,000	\$12,500,000	\$25,357,896	\$5,071,579	4.000000000%
24			\$383,333,333	\$15,333,333	\$33,333,333	\$48,666,667	\$60,833,333	\$12,166,667		\$12,166,667	\$12,166,667	\$23,732,390	\$4,746,478	4.000000000%
25			\$350,000,000	\$14,000,000	\$33,333,333	\$47,333,333	\$59,166,667	\$11,833,333		\$11,833,333	\$11,833,333	\$22,194,411	\$4,438,882	4.000000000%
26			\$316,666,667	\$12,666,667	\$33,333,333	\$46,000,000	\$57,500,000	\$11,500,000		\$11,500,000	\$11,500,000	\$20,739,631	\$4,147,926	4.000000000%
27			\$283,333,333	\$11,333,333	\$33,333,333	\$44,666,667	\$55,833,333	\$11,166,667		\$11,166,667	\$11,166,667	\$19,363,925	\$3,872,785	4.000000000%
28			\$250,000,000	\$10,000,000	\$33,333,333	\$43,333,333	\$54,166,667	\$10,833,333		\$10,833,333	\$10,833,333	\$18,063,363	\$3,612,673	4.000000000%
29			\$216,666,667	\$8,666,667	\$33,333,333	\$42,000,000	\$52,500,000	\$10,500,000		\$10,500,000	\$10,500,000	\$16,834,199	\$3,366,840	4.000000000%
30			\$183,333,333	\$7,333,333	\$33,333,333	\$40,666,667	\$50,833,333	\$10,166,667		\$10,166,667	\$10,166,667	\$15,672,866	\$3,134,573	4.000000000%
31			\$150,000,000	\$6,000,000	\$30,000,000	\$36,000,000	\$45,000,000	\$9,000,000		\$9,000,000	\$9,000,000	\$13,340,712	\$2,668,142	4.000000000%
32			\$120,000,000	\$4,800,000	\$26,666,667	\$31,466,667	\$39,333,333	\$7,866,667		\$7,866,667	\$7,866,667	\$11,212,279	\$2,242,456	4.000000000%
33			\$93,333,333	\$3,733,333	\$23,333,333	\$27,066,667	\$33,833,333	\$6,766,667		\$6,766,667	\$6,766,667	\$9,273,520	\$1,854,704	4.000000000%
34			\$70,000,000	\$2,800,000	\$20,000,000	\$22,800,000	\$28,500,000	\$5,700,000		\$5,700,000	\$5,700,000	\$7,511,235	\$1,502,247	4.000000000%
35			\$50,000,000	\$2,000,000	\$16,666,667	\$18,666,667	\$23,333,333	\$4,666,667		\$4,666,667	\$4,666,667	\$5,913,028	\$1,182,606	4.000000000%
36			\$33,333,333	\$1,333,333	\$13,333,333	\$14,666,667	\$18,333,333	\$3,666,667		\$3,666,667	\$3,666,667	\$4,467,260	\$893,452	4.000000000%
37			\$20,000,000	\$800,000	\$10,000,000	\$10,800,000	\$13,500,000	\$2,700,000		\$2,700,000	\$2,700,000	\$3,163,007	\$632,601	4.000000000%
38			\$10,000,000	\$400,000	\$6,666,667	\$7,066,667	\$8,833,333	\$1,766,667		\$1,766,667	\$1,766,667	\$1,990,021	\$398,004	4.000000000%
39			\$3,333,333	\$133,333	\$3,333,333	\$3,466,667	\$4,333,333	\$866,667		\$866,667	\$866,667	\$938,689	\$187,738	4.000000000%
40			\$0	\$0	\$0									
Total	\$1,000,000,000			\$598,000,000			\$2,025,000,000	\$405,000,000	\$1,000,000,000	\$405,000,000	\$1,405,000,000	\$1,054,416,451	\$1,021,972,868	

PRESENT VALUE OF DEBT FINANCING LESS THAN PRESENT VALUE OF PAYGO FINANCING														
DEBT FINANCING CUSTOMER REQUIRED FUNDS									PAYCO FINANCING CUSTOMER REQUIRED FUNDS			PRESENT VALUE OF CUSTOMER PROVIDED FUNDS		
Year	Capital Expenditure	Bond Issuance Amount	Total Bonds Outstanding	Total Interest @ 4.0%	Principal	Debt Service	Debt Service Coverage Requirement 1.25x	Remaining Debt Service Funds To Support Other Needs	Payco Funds	Customer Required Funds To Support Other Needs	Total Customer Required Funds	Present Value Debt Service Coverage Requirement	Present Value of Total PAYGO Customer Required Funds	Discount Rate
1	\$100,000,000	\$100,000,000	\$100,000,000	\$4,000,000	\$3,333,333	\$7,333,333	\$9,166,667	\$1,833,333	\$100,000,000	\$1,833,333	\$101,833,333	\$8,730,159	\$96,984,127	5.000000000%
2	\$100,000,000	\$100,000,000	\$196,666,667	\$7,866,667	\$6,666,667	\$14,533,333	\$18,166,667	\$3,633,333	\$100,000,000	\$3,633,333	\$103,633,333	\$16,477,702	\$93,998,488	5.000000000%
3	\$100,000,000	\$100,000,000	\$290,000,000	\$11,600,000	\$10,000,000	\$21,600,000	\$27,000,000	\$5,400,000	\$100,000,000	\$5,400,000	\$105,400,000	\$23,323,615	\$91,048,483	5.000000000%
4	\$100,000,000	\$100,000,000	\$380,000,000	\$15,200,000	\$13,333,333	\$28,533,333	\$35,666,667	\$7,133,333	\$100,000,000	\$7,133,333	\$107,133,333	\$29,343,055	\$88,138,858	5.000000000%
5	\$100,000,000	\$100,000,000	\$466,666,667	\$18,666,667	\$16,666,667	\$35,333,333	\$44,166,667	\$8,833,333	\$100,000,000	\$8,833,333	\$108,833,333	\$34,605,739	\$85,273,764	5.000000000%
6	\$100,000,000	\$100,000,000	\$550,000,000	\$22,000,000	\$20,000,000	\$42,000,000	\$52,500,000	\$10,500,000	\$100,000,000	\$10,500,000	\$110,500,000	\$39,176,308	\$82,456,801	5.000000000%
7	\$100,000,000	\$100,000,000	\$630,000,000	\$25,200,000	\$23,333,333	\$48,533,333	\$60,666,667	\$12,133,333	\$100,000,000	\$12,133,333	\$112,133,333	\$43,114,667	\$79,691,066	5.000000000%
8	\$100,000,000	\$100,000,000	\$706,666,667	\$28,266,667	\$26,666,667	\$54,933,333	\$68,666,667	\$13,733,333	\$100,000,000	\$13,733,333	\$113,733,333	\$46,476,303	\$76,979,197	5.000000000%
9	\$100,000,000	\$100,000,000	\$780,000,000	\$31,200,000	\$30,000,000	\$61,200,000	\$76,500,000	\$15,300,000	\$100,000,000	\$15,300,000	\$115,300,000	\$49,312,582	\$74,323,408	5.000000000%
10	\$100,000,000	\$100,000,000	\$850,000,000	\$34,000,000	\$33,333,333	\$67,333,333	\$84,166,667	\$16,833,333	\$100,000,000	\$16,833,333	\$116,833,333	\$51,671,032	\$71,725,532	5.000000000%
11			\$816,666,667	\$32,666,667	\$33,333,333	\$66,000,000	\$82,500,000	\$16,500,000		\$16,500,000	\$16,500,000	\$48,236,041	\$9,647,208	5.000000000%
12			\$783,333,333	\$31,333,333	\$33,333,333	\$64,666,667	\$80,833,333	\$16,166,667		\$16,166,667	\$16,166,667	\$45,011,025	\$9,002,205	5.000000000%
13			\$750,000,000	\$30,000,000	\$33,333,333	\$63,333,333	\$79,166,667	\$15,833,333		\$15,833,333	\$15,833,333	\$41,983,774	\$8,396,755	5.000000000%
14			\$716,666,667	\$28,666,667	\$33,333,333	\$62,000,000	\$77,500,000	\$15,500,000		\$15,500,000	\$15,500,000	\$39,142,766	\$7,828,553	5.000000000%
15			\$683,333,333	\$27,333,333	\$33,333,333	\$60,666,667	\$75,833,333	\$15,166,667		\$15,166,667	\$15,166,667	\$36,477,130	\$7,295,426	5.000000000%
16			\$650,000,000	\$26,000,000	\$33,333,333	\$59,333,333	\$74,166,667	\$14,833,333		\$14,833,333	\$14,833,333	\$33,976,605	\$6,795,321	5.000000000%
17			\$616,666,667	\$24,666,667	\$33,333,333	\$58,000,000	\$72,500,000	\$14,500,000		\$14,500,000	\$14,500,000	\$31,631,510	\$6,326,302	5.000000000%
18			\$583,333,333	\$23,333,333	\$33,333,333	\$56,666,667	\$70,833,333	\$14,166,667		\$14,166,667	\$14,166,667	\$29,432,713	\$5,886,543	5.000000000%
19			\$550,000,000	\$22,000,000	\$33,333,333	\$55,333,333	\$69,166,667	\$13,833,333		\$13,833,333	\$13,833,333	\$27,371,599	\$5,474,320	5.000000000%
20			\$516,666,667	\$20,666,667	\$33,333,333	\$54,000,000	\$67,500,000	\$13,500,000		\$13,500,000	\$13,500,000	\$25,440,040	\$5,088,008	5.000000000%
21			\$483,333,333	\$19,333,333	\$33,333,333	\$52,666,667	\$65,833,333	\$13,166,667		\$13,166,667	\$13,166,667	\$23,630,372	\$4,726,074	5.000000000%
22			\$450,000,000	\$18,000,000	\$33,333,333	\$51,333,333	\$64,166,667	\$12,833,333		\$12,833,333	\$12,833,333	\$21,935,367	\$4,387,073	5.000000000%
23			\$416,666,667	\$16,666,667	\$33,333,333	\$50,000,000	\$62,500,000	\$12,500,000		\$12,500,000	\$12,500,000	\$20,348,207	\$4,069,641	5.000000000%
24			\$383,333,333	\$15,333,333	\$33,333,333	\$48,666,667	\$60,833,333	\$12,166,667		\$12,166,667	\$12,166,667	\$18,862,465	\$3,772,493	5.000000000%
25			\$350,000,000	\$14,000,000	\$33,333,333	\$47,333,333	\$59,166,667	\$11,833,333		\$11,833,333	\$11,833,333	\$17,472,081	\$3,494,416	5.000000000%
26			\$316,666,667	\$12,666,667	\$33,333,333	\$46,000,000	\$57,500,000	\$11,500,000		\$11,500,000	\$11,500,000	\$16,171,342	\$3,234,268	5.000000000%
27			\$283,333,333	\$11,333,333	\$33,333,333	\$44,666,667	\$55,833,333	\$11,166,667		\$11,166,667	\$11,166,667	\$14,954,864	\$2,990,973	5.000000000%
28			\$250,000,000	\$10,000,000	\$33,333,333	\$43,333,333	\$54,166,667	\$10,833,333		\$10,833,333	\$10,833,333	\$13,817,572	\$2,763,514	5.000000000%
29			\$216,666,667	\$8,666,667	\$33,333,333	\$42,000,000	\$52,500,000	\$10,500,000		\$10,500,000	\$10,500,000	\$12,754,682	\$2,550,936	5.000000000%
30			\$183,333,333	\$7,333,333	\$33,333,333	\$40,666,667	\$50,833,333	\$10,166,667		\$10,166,667	\$10,166,667	\$11,761,687	\$2,352,337	5.000000000%
31			\$150,000,000	\$6,000,000	\$30,000,000	\$36,000,000	\$45,000,000	\$9,000,000		\$9,000,000	\$9,000,000	\$9,916,176	\$1,983,235	5.000000000%
32			\$120,000,000	\$4,800,000	\$26,666,667	\$31,466,667	\$39,333,333	\$7,866,667		\$7,866,667	\$7,866,667	\$8,254,736	\$1,650,947	5.000000000%
33			\$93,333,333	\$3,733,333	\$23,333,333	\$27,066,667	\$33,833,333	\$6,766,667		\$6,766,667	\$6,766,667	\$6,762,354	\$1,352,471	5.000000000%
34			\$70,000,000	\$2,800,000	\$20,000,000	\$22,800,000	\$28,500,000	\$5,700,000		\$5,700,000	\$5,700,000	\$5,425,112	\$1,085,022	5.000000000%
35			\$50,000,000	\$2,000,000	\$16,666,667	\$18,666,667	\$23,333,333	\$4,666,667		\$4,666,667	\$4,666,667	\$4,230,107	\$846,021	5.000000000%
36			\$33,333,333	\$1,333,333	\$13,333,333	\$14,666,667	\$18,333,333	\$3,666,667		\$3,666,667	\$3,666,667	\$3,165,386	\$633,077	5.000000000%
37			\$20,000,000	\$800,000	\$10,800,000	\$13,500,000	\$17,000,000	\$2,700,000		\$2,700,000	\$2,700,000	\$2,219,881	\$443,976	5.000000000%
38			\$10,000,000	\$400,000	\$6,666,667	\$7,066,667	\$8,833,333	\$1,766,667		\$1,766,667	\$1,766,667	\$1,383,347	\$276,669	5.000000000%
39			\$3,333,333	\$133,333	\$3,333,333	\$3,466,667	\$4,333,333	\$866,667		\$866,667	\$866,667	\$646,308	\$129,262	5.000000000%
40			\$0	\$0	\$0									
Total	\$1,000,000,000			\$598,000,000			\$2,025,000,000	\$405,000,000	\$1,000,000,000	\$405,000,000	\$1,405,000,000	\$914,646,411	\$955,102,775	

PRESENT VALUE OF DEBT FINANCING EQUALS PRESENT VALUE OF PAYGO FINANCING, 1.18x DEBT SERVICE COVERAGE RATIO															
		DEBT FINANCING CUSTOMER REQUIRED FUNDS							PAYCO FINANCING CUSTOMER REQUIRED FUNDS			PRESENT VALUE OF CUSTOMER PROVIDED FUNDS			
Year	Capital Expenditure	Bond Issuance Amount	Total Bonds Outstanding	Total Interest @ 4.0%	Principal	Debt Service	Debt Service Coverage Requirement 1.18x	Remaining Debt Service Funds To Support Other Needs	Payco Funds	Customer Required Funds To Support Other Needs	Total Customer Required Funds	Present Value Debt Service Coverage Requirement	Present Value of Total PAYGO Customer Required Funds	Discount Rate	
1	\$100,000,000	\$100,000,000	\$100,000,000	\$4,000,000	\$3,333,333	\$7,333,333	\$8,653,333	\$1,320,000	\$100,000,000	\$1,320,000	\$101,320,000	\$8,287,587	\$97,037,556	4.413181875%	
2	\$100,000,000	\$100,000,000	\$196,666,667	\$7,866,667	\$6,666,667	\$14,533,333	\$18,166,667	\$3,633,333	\$100,000,000	\$3,633,333	\$103,633,333	\$16,663,437	\$95,058,029	4.413181875%	
3	\$100,000,000	\$100,000,000	\$290,000,000	\$11,600,000	\$10,000,000	\$21,600,000	\$27,000,000	\$5,400,000	\$100,000,000	\$5,400,000	\$105,400,000	\$23,719,076	\$92,592,246	4.413181875%	
4	\$100,000,000	\$100,000,000	\$380,000,000	\$15,200,000	\$13,333,333	\$28,533,333	\$35,666,667	\$7,133,333	\$100,000,000	\$7,133,333	\$107,133,333	\$30,008,287	\$90,137,041	4.413181875%	
5	\$100,000,000	\$100,000,000	\$466,666,667	\$18,666,667	\$16,666,667	\$35,333,333	\$44,166,667	\$8,833,333	\$100,000,000	\$8,833,333	\$108,833,333	\$35,589,179	\$87,697,109	4.413181875%	
6	\$100,000,000	\$100,000,000	\$550,000,000	\$22,000,000	\$20,000,000	\$42,000,000	\$52,500,000	\$10,500,000	\$100,000,000	\$10,500,000	\$110,500,000	\$40,516,071	\$85,276,682	4.413181875%	
7	\$100,000,000	\$100,000,000	\$630,000,000	\$25,200,000	\$23,333,333	\$48,533,333	\$60,666,667	\$12,133,333	\$100,000,000	\$12,133,333	\$112,133,333	\$44,839,712	\$82,879,556	4.413181875%	
8	\$100,000,000	\$100,000,000	\$706,666,667	\$28,266,667	\$26,666,667	\$54,933,333	\$68,666,667	\$13,733,333	\$100,000,000	\$13,733,333	\$113,733,333	\$48,607,504	\$80,509,128	4.413181875%	
9	\$100,000,000	\$100,000,000	\$780,000,000	\$31,200,000	\$30,000,000	\$61,200,000	\$76,500,000	\$15,300,000	\$100,000,000	\$15,300,000	\$115,300,000	\$51,863,696	\$78,168,420	4.413181875%	
10	\$100,000,000	\$100,000,000	\$850,000,000	\$34,000,000	\$33,333,333	\$67,333,333	\$84,166,667	\$16,833,333	\$100,000,000	\$16,833,333	\$116,833,333	\$54,649,579	\$75,860,109	4.413181875%	
11			\$816,666,667	\$32,666,667	\$33,333,333	\$66,000,000	\$82,500,000	\$16,500,000		\$16,500,000	\$16,500,000	\$51,303,301	\$10,260,660	4.413181875%	
12			\$783,333,333	\$31,333,333	\$33,333,333	\$64,666,667	\$80,833,333	\$16,166,667		\$16,166,667	\$16,166,667	\$48,142,265	\$9,628,453	4.413181875%	
13			\$750,000,000	\$30,000,000	\$33,333,333	\$63,333,333	\$79,166,667	\$15,833,333		\$15,833,333	\$15,833,333	\$45,156,790	\$9,031,358	4.413181875%	
14			\$716,666,667	\$28,666,667	\$33,333,333	\$62,000,000	\$77,500,000	\$15,500,000		\$15,500,000	\$15,500,000	\$42,337,682	\$8,467,536	4.413181875%	
15			\$683,333,333	\$27,333,333	\$33,333,333	\$60,666,667	\$75,833,333	\$15,166,667		\$15,166,667	\$15,166,667	\$39,676,211	\$7,935,242	4.413181875%	
16			\$650,000,000	\$26,000,000	\$33,333,333	\$59,333,333	\$74,166,667	\$14,833,333		\$14,833,333	\$14,833,333	\$37,164,087	\$7,432,817	4.413181875%	
17			\$616,666,667	\$24,666,667	\$33,333,333	\$58,000,000	\$72,500,000	\$14,500,000		\$14,500,000	\$14,500,000	\$34,793,441	\$6,958,688	4.413181875%	
18			\$583,333,333	\$23,333,333	\$33,333,333	\$56,666,667	\$70,833,333	\$14,166,667		\$14,166,667	\$14,166,667	\$32,556,801	\$6,511,360	4.413181875%	
19			\$550,000,000	\$22,000,000	\$33,333,333	\$55,333,333	\$69,166,667	\$13,833,333		\$13,833,333	\$13,833,333	\$30,447,074	\$6,089,415	4.413181875%	
20			\$516,666,667	\$20,666,667	\$33,333,333	\$54,000,000	\$67,500,000	\$13,500,000		\$13,500,000	\$13,500,000	\$28,457,527	\$5,691,505	4.413181875%	
21			\$483,333,333	\$19,333,333	\$33,333,333	\$52,666,667	\$65,833,333	\$13,166,667		\$13,166,667	\$13,166,667	\$26,581,770	\$5,316,354	4.413181875%	
22			\$450,000,000	\$18,000,000	\$33,333,333	\$51,333,333	\$64,166,667	\$12,833,333		\$12,833,333	\$12,833,333	\$24,813,739	\$4,962,748	4.413181875%	
23			\$416,666,667	\$16,666,667	\$33,333,333	\$50,000,000	\$62,500,000	\$12,500,000		\$12,500,000	\$12,500,000	\$23,147,677	\$4,629,535	4.413181875%	
24			\$383,333,333	\$15,333,333	\$33,333,333	\$48,666,667	\$60,833,333	\$12,166,667		\$12,166,667	\$12,166,667	\$21,578,124	\$4,315,625	4.413181875%	
25			\$350,000,000	\$14,000,000	\$33,333,333	\$47,333,333	\$59,166,667	\$11,833,333		\$11,833,333	\$11,833,333	\$20,099,897	\$4,019,979	4.413181875%	
26			\$316,666,667	\$12,666,667	\$33,333,333	\$46,000,000	\$57,500,000	\$11,500,000		\$11,500,000	\$11,500,000	\$18,708,081	\$3,741,616	4.413181875%	
27			\$283,333,333	\$11,333,333	\$33,333,333	\$44,666,667	\$55,833,333	\$11,166,667		\$11,166,667	\$11,166,667	\$17,398,012	\$3,479,602	4.413181875%	
28			\$250,000,000	\$10,000,000	\$33,333,333	\$43,333,333	\$54,166,667	\$10,833,333		\$10,833,333	\$10,833,333	\$16,165,266	\$3,233,053	4.413181875%	
29			\$216,666,667	\$8,666,667	\$33,333,333	\$42,000,000	\$52,500,000	\$10,500,000		\$10,500,000	\$10,500,000	\$15,005,647	\$3,001,129	4.413181875%	
30			\$183,333,333	\$7,333,333	\$33,333,333	\$40,666,667	\$50,833,333	\$10,166,667		\$10,166,667	\$10,166,667	\$13,915,175	\$2,783,035	4.413181875%	
31			\$150,000,000	\$6,000,000	\$30,000,000	\$36,000,000	\$45,000,000	\$9,000,000		\$9,000,000	\$9,000,000	\$11,797,698	\$2,359,540	4.413181875%	
32			\$120,000,000	\$4,800,000	\$26,666,667	\$31,466,667	\$39,333,333	\$7,866,667		\$7,866,667	\$7,866,667	\$9,876,207	\$1,975,241	4.413181875%	
33			\$93,333,333	\$3,733,333	\$23,333,333	\$27,066,667	\$33,833,333	\$6,766,667		\$6,766,667	\$6,766,667	\$8,136,149	\$1,627,230	4.413181875%	
34			\$70,000,000	\$2,800,000	\$20,000,000	\$22,800,000	\$28,500,000	\$5,700,000		\$5,700,000	\$5,700,000	\$6,563,925	\$1,312,785	4.413181875%	
35			\$50,000,000	\$2,000,000	\$16,666,667	\$18,666,667	\$23,333,333	\$4,666,667		\$4,666,667	\$4,666,667	\$5,146,835	\$1,029,367	4.413181875%	
36			\$33,333,333	\$1,333,333	\$13,333,333	\$14,666,667	\$18,333,333	\$3,666,667		\$3,666,667	\$3,666,667	\$3,873,018	\$774,604	4.413181875%	
37			\$20,000,000	\$800,000	\$10,000,000	\$10,800,000	\$13,500,000	\$2,700,000		\$2,700,000	\$2,700,000	\$2,731,408	\$546,282	4.413181875%	
38			\$10,000,000	\$400,000	\$6,666,667	\$7,066,667	\$8,833,333	\$1,766,667		\$1,766,667	\$1,766,667	\$1,711,678	\$342,336	4.413181875%	
39			\$3,333,333	\$133,333	\$3,333,333	\$3,466,667	\$4,333,333	\$866,667		\$866,667	\$866,667	\$804,200	\$160,840	4.413181875%	
40			\$0	\$0	\$0										
Total	\$1,000,000,000			\$598,000,000			\$2,024,486,667	\$404,486,667	\$1,000,000,000	\$404,486,667	\$1,404,486,667	\$992,833,814	\$992,833,813		

PBEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, David S. Habr, hereby state that the facts set forth in my Direct Testimony, OCA Statement 2, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 8, 2021
*312545

Signature: 
David S. Habr

Consultant Address: Habr Economics
213 Cornuta Way
Nipomo, CA 93444-5020

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission	:	Docket Numbers
v.	:	R-2021-3024773
Pittsburgh Water and Sewer Authority	:	R-2021-3024774
	:	R-2021-3024779

Direct Testimony of
Scott J. Rubin

on Behalf of
the Pennsylvania Office of Consumer Advocate

July 8, 2021

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Table 1:	Number of Residential Customers in Each Stormwater Tier Under PWSA Proposed and OCA Recommended Tier Breakpoints
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List of Schedules and Attachments

Appendix A:	Curriculum vitae
Schedule SJR-1:	Recommended Residential Water Rate Design
Schedule SJR-2:	OCA IV-4 (public fire hydrants)
Schedule SJR-3:	Excerpt from Brief of Philadelphia Water Department

- Schedule SJR-4: OCA V-13 (stormwater-only customer collections)
- Schedule SJR-5: Stormwater Fee Data for Other Pennsylvania Communities
- Schedule SJR-6: OCA V-8 (stormwater data limitations)
- Schedule SJR-7: OCA V-3 (dishonored payment fee information)

Introduction

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Q. Please state your name and address.

A. My name is Scott J. Rubin. My address is 4627 Chandlers Forde, Sarasota, Florida 34235.

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

A. Since early 1994, I have been an independent consultant and an attorney with the subject matter limited to matters affecting the public utility industry. Earlier this year, I informed my clients that I would be retiring from active employment and would not be accepting new assignments; but that I would finish work on cases in progress. This case was in progress at that time and I will be completing my work on it before I fully retire.

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

A. I have been asked by the Office of Consumer Advocate (“OCA”) to review and critique the Authority’s cost-of-service studies (“COSS”), evaluate PWSA’s proposed rate design for residential customers, address PWSA’s proposal to transition to separate stormwater rates, and discuss miscellaneous tariff issues.

Q. What are your qualifications to provide this testimony in this case?

A. I have testified on more than 200 occasions as an expert witness before utility commissions or courts in the District of Columbia, the province of Nova Scotia, and the states of Alaska, Arizona, California, Connecticut, Delaware, Illinois, Kentucky, Maine, Maryland, Massachusetts, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, South Carolina, Washington, and West

1 Virginia. I also have testified as an expert witness before two committees of the U.S.
2 House of Representatives and various state and local legislative committees. I also have
3 served as a consultant to the staffs of four utility commissions, several national utility
4 trade associations in the United States, and state and local governments throughout the
5 United States. Prior to establishing my own consulting and law practice, I was employed
6 by the OCA from 1983 through January 1994 in increasingly responsible positions. From
7 1990 until I left the OCA, I was one of two senior attorneys in that office. Among my
8 other responsibilities in that position, I had a major role in setting the office's policy
9 positions on water and electric matters. In addition, I was responsible for supervising the
10 technical staff of the office. I also testified as an expert witness for the OCA on rate
11 design, cost of service issues, and policy matters.

12 Throughout my career, I developed substantial expertise in matters relating to the
13 economic regulation of public utilities. I have published articles, contributed to books,
14 written speeches, and delivered numerous presentations relating to regulatory issues. I
15 have attended numerous continuing education courses involving the utility industry. I
16 also have participated as a faculty member in utility-related educational programs for the
17 Institute for Public Utilities at Michigan State University, the American Water Works
18 Association, and the Pennsylvania Bar Institute. My complete curriculum vitae is
19 provided as Appendix A.

20 **Q. Do you have any experience that is particularly relevant to the issues in this case?**

21 A. Yes, I do. I have testified in previous PWSA proceedings before this Commission on
22 compliance-related issues as well as rate design, COSS, and tariff issues. I have

1 considerable experience in the field of COSS and rate design, particularly for water
2 utilities. I have testified as an expert witness on cost-of-service studies, rate design, and
3 other tariff issues in dozens of water and wastewater utility rate cases, as well as similar
4 issues in numerous energy utility rate cases. I also have worked as a consultant to local
5 government entities on rate design issues – both to assist government-owned utilities in
6 designing rates and to help government agencies obtain reasonable rates from their
7 utility. I also served on the editorial committee for the preparation of the major rate
8 design manual for the water utility industry, AWWA's Manual M1: Principles of Water
9 Rates, Fees, and Charges (“M1 Manual”). My work on the M1 Manual was for the fifth
10 edition, published in 2000. The Manual is now in its seventh edition, published in 2017.

11 **Q. Do you have any experience with the implementation and design of rates for the**
12 **provisions of stormwater service?**

13 A. Yes. I have provided expert testimony on stormwater rates and related issues for two
14 other government-owned utilities: Halifax Regional Water Commission (before the Nova
15 Scotia Utility and Review Board) and Philadelphia Water Department (before the
16 Philadelphia Water Commission).

17 **Q. Do you have any other preliminary matters to address?**

18 A. Yes, there are three matters I would like to discuss about the focus of my testimony and
19 some of the terminology used. First, portions of my testimony may deal with regulatory
20 policy issues. Given the nature of public utility regulation, much of the public policy in
21 this field is contained in decisions by regulatory agencies and courts; or in statutes,
22 ordinances, or regulations. I may be citing or referring to these types of sources. This

1 should not be taken as a legal opinion (though I am qualified to provide expert testimony
2 as a regulatory attorney in Pennsylvania), but rather as sources supporting my expert
3 opinion concerning appropriate public policy and regulatory practice.

4 Second, the Authority has provided a comprehensive Excel spreadsheet
5 containing its revenue requirement, COSS, and rate design calculations and supporting
6 data. The model I am using is dated April 13, 2021, with the file name *PWSA Cost of*
7 *Service Study Model 4.13.21 (00306955x97486).xlsm*. I will refer to this as the COSS
8 Model.

9 Third, I want to make clear at the outset that my testimony and analysis are based
10 on PWSA's proposed revenue requirement for 2022, the fully projected future test year
11 ("FPFTY"). This is a standard practice because it allows different parties' cost of service
12 and rate design recommendations to be compared on an "apples-to-apples" basis. This
13 should not be taken, however, as an endorsement of the Authority's proposed revenue
14 requirement. Indeed, there are other OCA witnesses who discuss the accuracy of that
15 proposed revenue requirement.

16 Summary

17 **Q. Please summarize your conclusions and recommendations.**

18 **A.** I summarize my conclusions and recommendations as follows:

- 19 • Through the discovery process, PWSA identified four small errors in the
20 water cost-of-service study. Those errors should be corrected in the
21 version of the model that is filed with PWSA's rebuttal case.
- 22 • PWSA's proposal to include a 5% adder to Residential water customer
23 charges should be rejected. PWSA has not demonstrated that there is a
24 business reason for it to increase the amount of revenues it collects

1 through fixed charges. If, however, PWSA can make such a
2 demonstration, then perhaps it should increase the fixed charges for non-
3 residential customers. There is no justification for PWSA to further
4 increase its very high collection of Residential revenues through fixed
5 charges.

- 6 • To avoid penalizing Residential water customers with 3/4-inch or 1-inch
7 meters (some of whom appear to have larger meters solely to comply with
8 fire-protection requirements), I recommend that the Residential water
9 customer charge for all customers with meters 1-inch or smaller should be
10 the same, and that it should include a minimum usage allowance of 1,000
11 gallons per month.
- 12 • PWSA's proof of revenues does not show the 134 public fire hydrants
13 located outside of the City of Pittsburgh being billed at the full tariffed
14 rate; rather they are incorrectly shown as paying the phased-in rate agreed
15 to by the City and PWSA. Correcting this error would increase revenues
16 under proposed rates by approximately \$12,500. This amount should be
17 reflected as revenues from proposed rates, thereby reducing the amount of
18 the City Phase-In Subsidy paid by the other customer classes.
- 19 • I have been advised that there may be some dispute over the
20 Commission's ability to approve a stormwater tariff for service in areas
21 that have Municipal Separate Storm Sewer Systems ("MS4") rather than
22 combined (sanitary-stormwater) sewer systems ("CSS"). In my opinion it
23 would be sound public policy to allow PWSA to charge for stormwater
24 service in both CSS and MS4 areas.
- 25 • I recommend that for this case PWSA should assume it will collect at least
26 75% of billed revenues from stormwater-only customers. In future cases,
27 the Authority should document its actual level of collections and explain
28 and justify the measures it takes to maximize the level of collections from
29 stormwater-only customers.
- 30 • In my opinion, it is reasonable to have a short transition period where
31 some stormwater costs continue to be recovered through wastewater rates.
32 I do not agree, however, with the amount of subsidy proposed by PWSA.
- 33 • I recommend that the stormwater fee should be set at \$10.00 per ERU in
34 January 2023, rather than \$7.95 per ERU as proposed by PWSA.
- 35 • I recommend that the breakpoint between tiers 1 and 2 should be set equal
36 to one-half the median (825 square feet of impervious area ("SFIA")) plus
37 a margin of 100 SFIA, or 925 SFIA. Similarly, the breakpoint between
38 tiers 2 and 3 should be set at twice the size of a typical property (3,300

- 1 SFIA), plus a margin of 100 SFIA, or 3,400 SFIA. This would reduce the
2 number of ERUs billed to Residential properties by about 5,400 ERUs.
- 3 • The combined effect of my recommendations would reduce the subsidy
4 paid by wastewater customers to stormwater customers to approximately
5 \$7.92 million, which is approximately \$4.5 million less than the subsidy
6 proposed by the Authority.
 - 7 • I recommend that the fee PWSA charges for a dishonored payment should
8 be reduced to no more than \$14.00 from its current level of \$30.45.
9 Obviously, I also recommend that the Commission reject PWSA's
10 proposal to increase the fee to \$40.00.
 - 11 • I recommend that PWSA be required to provide detailed cost support for
12 its dishonored payment fee in its next rate case. Further, such an analysis
13 should be revisited when PWSA has the capability to use the electronic
14 bank files directly in its customer information system, as that should
15 further reduce the cost of processing a dishonored payment.

16 Overview of this Case

17 **Q. Please provide your general understanding of PWSA's proposed revenue increases**
18 **in this case.**

19 A. PWSA has developed its revenue requirements based on the 2022 FPPTY. Those
20 projections would result in the following changes in base rate revenues: water increase of
21 \$23.3 million (19.7%); wastewater decrease of \$14.8 million (-21.3%); and new rates for
22 stormwater service with a revenue requirement of \$24.3 million.¹

23 The Authority is recommending, however, that these rate changes should be
24 phased in over two years. Thus, PWSA proposes an \$11.7 million increase in water rates
25 in January 2022, followed by an additional \$11.7 million water increase in January 2023.
26 For wastewater, PWSA proposes a decrease of \$7.4 million in 2022 followed by an
27 additional \$7.4 million decrease in 2023. January 2022 stormwater rates, as proposed by

¹ COSS Model, Phase_In tab, verified to Proof_22 tab (Schedules HJS-17W, HJS-16WW, and HJS-8SW).

1 PWSA, would generate \$17.8 million in revenues, followed by an increase of \$5.9
2 million in January 2023.²

3 In addition, as I discuss below, PWSA’s proposed wastewater and stormwater
4 revenue requirements are net of a proposed subsidy from wastewater customers to
5 stormwater customers in the amount of \$12.4 million. That is, the true cost of providing
6 stormwater service (under PWSA’s proposed revenue requirement) is \$36.7 million, and
7 the total decrease in wastewater revenues (from a combination of projected cost increases
8 and removing stormwater-related costs) should be \$27.2 million.

9 **Q. Are there any unusual aspects to the Company’s filing?**

10 A. Yes, to the best of my knowledge, this is the first case in which a Commission-regulated
11 utility has proposed to charge fees to the public for stormwater service. As I mentioned
12 above, I have some experience in other jurisdictions involving the development of
13 stormwater rates and related terms of service. I devote a significant portion of my
14 testimony to stormwater-related issues.

15 **Review of Cost-of-Service Study (“COSS”) Model**

16 **Q. What is a COSS?**

17 A. A COSS is an analysis that breaks down a utility’s costs and investments into numerous
18 categories, known as functions and classifications. The classified costs are then allocated
19 among the utility’s different classes of customers to estimate the cost of serving different
20 types of customers. Those cost relationships are then used as a guide in two additional

² COSS Model, Phase_In tab.

1 steps: (1) determining each class's share of the utility's revenue requirement, and
2 (2) designing rates that reasonably reflect the reasons why costs are incurred to serve a
3 class of customers.

4 **Q. Did PWSA prepare a COSS in this case?**

5 A. Yes. The Authority prepared a single model, which I identified as the COSS Model at
6 the outset of my testimony. The model has components that (1) develop the revenue
7 requirement; (2) functionalize, classify, and allocate those costs to develop the cost of
8 serving each customer class; (3) allocate revenue responsibility among the classes; and
9 (4) design rates for each class to collect the revenue requirement. Each set of calculations
10 is performed separately for water service, wastewater service, and stormwater service.

11 **Q. Did you review all aspects of the COSS Model?**

12 A. No, my focus was on what I will call the traditional cost-of-service study; that is, the
13 functionalization, classification, and allocation of costs both among services and among
14 customer classes; as well as the portions of the model that deal with the design of rates
15 and charges. In particular, I did not review or analyze any issues associated with the
16 reasonableness or accuracy of PWSA's projected revenue requirements. These issues are
17 addressed by OCA witness Dante Mugrace in OCA Statement 1.

18 **Q. How is your testimony organized concerning COSS, rate design, and tariff issues?**

19 A. I will briefly discuss changes I recommend to the COSS. The need for those changes was
20 acknowledged by PWSA during the discovery process and should be incorporated in
21 PWSA's rebuttal COSS model, so I do not discuss them in great detail.

1 The next section of my testimony will discuss the design of water rates. There are
2 two groups of issues in this section: (1) the design of residential rates, and (2) the design
3 of rates for public fire hydrant service, particularly in municipalities other than the City
4 of Pittsburgh (“City”).

5 That section is followed by a discussion of several issues related to the provision
6 of stormwater service, including policy issues as well as the design of residential
7 stormwater fees.

8 Finally, I discuss PWSA’s present and proposed fees for a dishonored payment.

9 **COSS Changes**

10 **Q. Based on your review of PWSA’s COSS Model, do you have any overall impressions**
11 **about the COSS portions of the model?**

12 A. Yes. Generally, I find that PWSA’s model is well-developed and follows industry-
13 recognized procedures for the development of water and wastewater cost-of-service
14 studies. I also find that, with the exception of certain policy issues I discuss in the
15 Stormwater section below, the model properly distributes costs among water, wastewater,
16 and stormwater services.

17 **Q. You qualified the previous answer by saying the COSS Model “generally” is**
18 **appropriate. Are there specific assumptions made in the model with which you**
19 **disagree?**

20 A. Yes. Through the discovery process, I questioned several assumptions made in the
21 model. In most instances, PWSA provided additional information that supported its
22 assumptions. There are four instances, however, where the Authority acknowledged an

1 error in the model that will be corrected when it files a revised model in rebuttal. Those
2 changes are briefly described as follows:

- 3 • Meter test fees should be allocated on number of meters (OCA IV-10(c));
- 4 • Penalties and interest should be allocated in the same manner as bad debt
5 expense (OCA IV-10(e));
- 6 • Correct the model to fully reflect the change in classification of certain
7 customers between the Commercial and Industrial classes (OCA IV-20
8 Supp.); and
- 9 • Correct the model to remove bills for inactive service in the calculation of
10 peaking factors (does not affect cost allocation results) (OCA IV-21).

11 **Design of Water Rates**

12 ***Introduction***

13 **Q. Do you disagree with any aspects of PWSA's proposed design of water rates?**

14 A. Yes, I disagree with three aspects of the Authority's proposed design of water rates. Two
15 of my concerns relate to the design of customer charges for the Residential class. The
16 third relates to the design of rates for Public Fire service.

17 ***Residential Rates***

18 **Q. What is your first concern with PWSA's proposed design of the customer charge for
19 the Residential class?**

20 A. PWSA included an arbitrary 5% increase in the Residential customer charge that is over
21 and above fully allocated customer-related costs in the COSS. The sole purpose of this
22 increase is to enhance the Authority's recovery of revenues through fixed charges (that is,
23 to make its revenues less sensitive to the amount of water consumed by customers).

1 **Q. In your opinion, is it necessary for PWSA to increase the amount of revenues it**
2 **collects from residential customers through fixed charges?**

3 A. No. Under present rates, PWSA collects almost half of its Residential revenues through
4 fixed charges. Specifically, PWSA's calculations for the FPFTY under present rates
5 show that it would bill \$23.2 million for Residential customer charges and \$24.9 million
6 for Residential usage charges.³

7 **Q. In your experience, is it unusual for a water utility to collect almost half of its**
8 **Residential revenues through fixed charges?**

9 A. Yes. In my experience in 100 or more water utility rate cases (for both publicly owned
10 and investor-owned water utilities), it is very unusual to have almost half of residential
11 revenues collected through fixed charges. The percentages I am used to seeing are closer
12 to one-quarter to one-third of Residential revenues from fixed charges. For example, in
13 Pennsylvania American Water Company's recently concluded rate case, the utility
14 proposed reducing the percentage of Residential class revenues collected through fixed
15 charges from 28% to 26%.⁴

³ COSS Model, Proof_22 tab, calculated from Column H for Residential classes, including BDP customers.

⁴ Docket No. R-2020-3019169, Exhibit 12-I (Public), Schedule 7, Zone 1.

1 **Q. Does PWSA collect such a high percentage of revenues from fixed charges for its**
2 **Non-Residential customer classes?**

3 A. No. PWSA's revenues from non-residential customers are primarily based on usage.
4 Specifically, under present rates only 30% of non-residential revenues are collected
5 through fixed charges.⁵

6 **Q. In your opinion, is it necessary for PWSA to increase the amount of revenues it**
7 **collects through fixed charges?**

8 A. No. PWSA has not demonstrated that there is a business reason for it to increase the
9 amount of revenues it collects through fixed charges. If, however, PWSA can make such
10 a demonstration, then perhaps it should increase the fixed charges for non-residential
11 customers. There is no justification for PWSA to further increase its very high collection
12 of Residential revenues through fixed charges.

13 **Q. What is your second concern with the design of PWSA's Residential rates?**

14 A. PWSA charges much higher customer charges (including larger minimum usage
15 allowances) to Residential customers with 3/4-inch and 1-inch meters than it charges
16 customers with 5/8-inch meters. I am advised that the OCA has received complaints
17 from residential customers with 1-inch meters who have such large meters solely because
18 they have City-required fire-suppression (sprinkler) systems. One of those customers
19 testified at a Public Input Hearing in this case. I am advised by counsel that Section 1326
20 of the Public Utility Code (as interpreted by a Commission policy statement at 52 Pa.

⁵ COSS Model, Proof_22 tab, calculated from Column H for Non-Residential classes, including fire protection (\$20.4 million in fixed-charge revenues and \$47.1 million in usage revenues).

1 Code § 69.169) prohibits a water utility from charging a standby fee for residential
2 sprinkler systems.

3 If there are Residential customers with 3/4-inch or 1-inch meters solely because
4 they have sprinkler systems (and it appears that there are), it would not be reasonable to
5 charge them a much higher customer charge, particularly when that charge includes a
6 large minimum usage allowance (since the sprinkler system uses little if any water most
7 of the time).

8 **Q. Is this the first time you have heard this concern raised in Pennsylvania?**

9 A. No, it is not. In Pennsylvania American Water Company's most recent rate case, the
10 utility said that it had heard exactly this same concern from Residential customers with
11 larger-sized meters. As a result, that utility proposed (and I did not oppose) that all
12 Residential customers with meters 1-inch or smaller should pay the same customer
13 charge. That proposal was adopted and is now reflected in that utility's tariffs.

14 **Q. What do you recommend for PWSA?**

15 A. I recommend that the Residential customer charge for all customers with meters 1-inch or
16 smaller should be the same, and that it should include a minimum usage allowance of
17 1,000 gallons per month.

18 **Q. Can you estimate the effect of your recommendations on PWSA's proposed
19 Residential rates?**

20 A. Yes. I have prepared Schedule SJR-1 to provide an estimate of the effect of both
21 eliminating the 5% increase in fixed charges and setting the same customer charge for

1 meters of 1-inch or smaller. I call this an estimate for two reasons: (1) it is prepared
2 under PWSA's proposed revenue requirement without reflecting the modifications in the
3 COSS I discussed above, and (2) I do not have a complete bill frequency analysis for
4 residential customers, so I have estimated the change in billed usage that would result
5 from reducing the minimum usage allowance for Residential customers with 3/4-inch and
6 1-inch meters. With those caveats, my calculations would result in a Residential
7 customer charge for customers with 5/8-inch, 3/4-inch, and 1-inch meters of \$29.35 per
8 month, including a 1,000 gallon allowance. This contrasts with PWSA's proposed
9 charges of \$27.81 (with 1,000 gallons), \$48.76 (with 2,000 gallons), and \$107.16 (with
10 5,000 gallons) for 5/8-inch, 3/4-inch, and 1-inch meters, respectively.

11 **Q. What do you recommend?**

12 A. I recommend that the Residential customer charges should be set consistent with my
13 recommendations above. Specifically, that the charge should collect customer-related
14 costs from the COSS with no adder to further inflate fixed-charge recovery from
15 Residential customers, and that the charge should be the same for all Residential
16 customers with meters 1-inch or smaller. Further, the charges should be reduced from the
17 level I calculate for any reduction in PWSA's proposed revenue requirement.

18 ***Public Fire Hydrant Rates***

19 **Q. You stated that you had an issue with the Authority's proposed design of rates for
20 Public Fire service. Please describe that issue.**

21 A. In designing the rates for Public Fire service, PWSA assumed that all public fire hydrants
22 were located in the City. Thus, the rates for all hydrants were reduced to be consistent

1 with the phase-in schedule contained in the Cooperation Agreement between the City and
2 PWSA.⁶

3 In fact, however, in response to OCA IV-4 (attached hereto as Schedule SJR-2),
4 PWSA stated it has 134 hydrants located outside the City that should be paying the full
5 tariffed rate. The response to OCA IV-4 correctly states that the outside-City hydrants
6 would pay \$19.37 per month under PWSA's proposed rates, but that is not reflected in
7 PWSA's proof of revenues and rate design schedules.

8 **Q. What specific schedules are you referring to that do not reflect the proper rate for**
9 **outside-City fire hydrants?**

10 A. The Water Proof of Revenues is found in PWSA St. 4, Schedule HJS-17W (COSS
11 Model, Proof_22 tab, rows 1-154). The schedule does not show any public fire hydrants
12 being billed at the full tariffed rate of \$19.37 per month;⁷ rather all hydrants are billed at
13 the City's phase-in rate of \$11.62 per month. The difference for the 134 hydrants located
14 outside the City is approximately \$12,500 per year.⁸ This amount should be reflected as
15 revenues from proposed rates, thereby reducing the amount of the City Phase-In Subsidy
16 paid by the other customer classes.⁹

⁶ PWSA Exh. WJP-2.

⁷ The full tariffed rate is set to collect 25% of the cost of public fire service as required by 66 Pa. C.S. § 1328. COSS Model, W>RateDesign tab, rows 52 and 83.

⁸ 134 hydrants x (\$19.37/month - \$11.62/month) x 12 months = \$12,462 per year.

⁹ COSS Model, W>RateDesign tab, row 87.

1 **Issues Related to Stormwater Service**

2 ***Introduction***

3 **Q. Based on your review of PWSA’s proposed stormwater charges and tariff**
4 **provisions, are there any topics where you disagree with, or have concerns about,**
5 **the Authority’s proposals?**

6 **A.** Yes, I am raising four issues with PWSA’s stormwater-related proposals. Briefly, these
7 are summarized as follows:

- 8 • Whether it is legal and consistent with sound public policy for PWSA to
9 have a Commission-approved tariffed rate for stormwater service in a
10 Municipal Separate Storm Sewer System (“MS4”).
- 11 • Whether it is reasonable to assume that 40% of bills to stormwater-only
12 customers will not be paid.
- 13 • Whether it is reasonable to require sanitary sewage customers to pay a
14 \$12.4 million subsidy to stormwater customers and, if not, whether there is
15 a different subsidy amount that is reasonable under the circumstances of
16 this case.
- 17 • Whether PWSA’s proposed method for determining Residential
18 stormwater tiers is reasonable and fair to all customers.

19 ***Charging for Stormwater Service in MS4 Areas***

20 **Q. Are there different types of stormwater service areas?**

21 **A.** Yes. Generally, there are two types of stormwater service areas: (1) Combined Sewer
22 Systems (“CSS”) are areas where flows from sanitary sewers and storm sewers are
23 combined into a single network of pipes; and Municipal Separate Storm Sewer Systems
24 (“MS4”) are areas where storm sewers are connected to a separate network of pipes (that
25 is, there are two pipe networks: one for stormwater flows and one for sanitary sewage).

1 **Q. What types of stormwater service areas are in PWSA’s territory?**

2 A. Approximately 75% of PWSA’s service area has CSS and about 25% has MS4.¹⁰

3 **Q. You stated that there is a legal and/or policy issue concerning PWSA’s ability to**
4 **charge a Commission-approved tariffed rate for stormwater service in MS4.**

5 **Without providing any type of legal opinion, can you explain the issue?**

6 A. Yes. To be clear, in this portion of my testimony, I am discussing the issue -- which I
7 believe is a mixed issue of law and public policy -- to put the parties on notice of a
8 potentially serious legal concern. I am not providing a legal opinion or recommending a
9 specific course of action. I expect that OCA’s attorneys will address this issue in briefs
10 or other appropriate pleadings.

11 With that understanding, and based on the advice of counsel, I will explain that
12 the concern arises based on the Commission’s limited jurisdiction over stormwater rates.
13 Prior to 2016, it was unclear whether the Public Utility Code gave the Commission
14 jurisdiction over stormwater service. That was clarified by Act 154 of 2016 which added
15 a definition of “wastewater” to Section 102 of the Code. The new definition defines
16 wastewater to specifically include not only sanitary sewage, but also “storm water which
17 is or will become mixed with ... [sanitary sewage] within a combined sewer system.”
18 The definition then specifically excludes stormwater collected through an MS4, stating:
19 “The term does not include storm water collected in a municipal separate storm sewer ...
20 that does not flow into a combined sewer system.”

¹⁰ PWSA St. 1 at 13.

1 Thus, it could be argued that the Commission does not have any jurisdiction to set
2 rates (or the other terms and conditions of service) for stormwater service within an MS4.

3 **Q. How does that affect PWSA?**

4 A. As I noted above, about one-quarter of PWSA’s service area is part of an MS4. PWSA’s
5 proposed stormwater tariff, however, purports to apply to PWSA’s entire service area,
6 including both CSS and MS4 areas. Thus, for example, the proposed tariff defines Storm
7 Water Service as follows: “Operation, maintenance, monitoring, regulation, or
8 improvement of overland or underground infrastructure that conveys, supports, or
9 provides relief to associated infrastructure that provides conveyance of storm water,
10 whether that infrastructure also conveys wastewater or not.”¹¹

11 **Q. Has counsel advised you whether there are other portions of the law that might**
12 **affect a determination of whether the Commission has the ability to approve a tariff**
13 **for stormwater service in an MS4?**

14 A. Yes, counsel advises that at least two other provisions of the law might affect this issue.
15 First, when PWSA came under the Commission’s jurisdiction, the Act specifically
16 included municipal authorities in cities of the second class that provided “storm water
17 collection, conveyance, treatment and disposal.” 66 Pa. C.S. § 3201. Chapter 32 was
18 added to the Code by Act 65 of 2017 -- that is, it is a later amendment to the Code than
19 the definition of “wastewater.” I will let counsel discuss how the rules of statutory
20 construction might affect the interpretation of the timing issue. I would note, however,

¹¹ PWSA Exh. TI-4, Original Page 27 (emphasis added).

1 that Act 65 does not define “storm water” and I am not aware of any definition of “storm
2 water” in the Public Utility Code.

3 The other law that counsel identified to me is the Municipality Authorities Act
4 (“MAA”) which also governs the organization and operation of PWSA. The MAA
5 allows municipal authorities to provide stormwater service¹² and to charge “reasonable
6 and uniform rates” for that service, taking into account the characteristics of the
7 properties being served.¹³

8 **Q. Considering all of these factors, as a matter of public policy (and not as a matter of**
9 **law), do you have an opinion about whether PWSA should be allowed to charge for**
10 **stormwater service in both CSS and MS4 areas?**

11 A. Yes, in my opinion it would be sound public policy to allow PWSA to charge for
12 stormwater service in both CSS and MS4 areas. If it is determined that, as a matter of
13 law, the Commission cannot regulate stormwater service in MS4 areas, then (obviously)
14 that service must be removed from PWSA’s tariffs. If that is the case, however, then the
15 Commission should permit PWSA to adopt a separate regulation -- outside of its tariff --
16 that provides the terms, conditions, and charges for stormwater service in MS4 areas.
17 That is, PWSA should be permitted to use its power as a municipal authority to provide
18 and charge for stormwater service in an MS4.

¹² 53 Pa. C.S. § 5607(a)(18).

¹³ 53 Pa. C.S. § 5607(d)(34).

1 In other words, if there is a gap in the Commission’s jurisdiction over PWSA, that
2 gap should not permit one-quarter of the City to avoid paying the costs of managing a
3 complex stormwater system.

4 **Q. In your opinion, would it be reasonable public policy to have MS4 properties receive**
5 **stormwater removal service at no charge?**

6 A. No. Managing, operating, maintaining, and replacing a separate stormwater network is
7 expensive. The cost must be paid by someone. Currently the cost is paid by all
8 wastewater customers. It is fairer to separate stormwater-related costs and to charge them
9 based on a measure of a property’s contributions to stormwater flows (which I discuss
10 below). Failing to charge MS4 properties for stormwater service, however, would result
11 in wastewater customers subsidizing that service which would be grossly unfair. Most of
12 those customers would be paying their own stormwater-related costs (since 75% of
13 customers are in a CSS); they should not be required to also pay a portion of stormwater
14 costs in MS4 areas because of a gap in the law (assuming, for the sake of this discussion,
15 that there is such a gap in the Commission’s jurisdiction).

16 **Q. How will you proceed with the remainder of your discussion about stormwater**
17 **issues?**

18 A. The remainder of my discussion assumes that PWSA will be able to charge all relevant
19 properties for stormwater service, whether the property is served by a CSS or an MS4.
20 Whether the charge is tariffed or contained in a separate regulation governed by the MAA
21 is not relevant to the remainder of my discussion of stormwater-related issues.

1 **Assumed Level of Revenue Collections from Stormwater-Only Customers**

2 **Q. As a result of having separate charges for stormwater service, will PWSA have any**
3 **new customers?**

4 A. Yes. PWSA states it will have approximately 6,000 new customer accounts that will only
5 receive stormwater service from the Authority.¹⁴ These stormwater-only customers may
6 be businesses that do not need water and sanitary sewer service (such as parking lots) or
7 they could be properties where common areas have different owners than the portions of
8 the building that use water and sanitary sewer service (such as condominiums). There
9 also may be portions of the stormwater service area that do not have public water and/or
10 sewer service (or where an entity other than PWSA provides the service).

11 **Q. Are there any issues unique to the provision of service to stormwater-only**
12 **customers?**

13 A. Yes. Unlike other utility services, it is not possible to physically start and stop
14 stormwater service. Thus, if a customer fails to apply for service, stormwater still would
15 flow from the property onto streets or into culverts or other portions of the stormwater
16 collection system. Similarly, if a stormwater-only customer fails to pay its bill, it is not
17 possible to terminate service as a collection mechanism. The result is that some
18 stormwater utilities report relatively low percentages of revenue collections from
19 stormwater-only customers.

¹⁴ PWSA St. 8 at 9.

1 **Q. What has PWSA assumed for the level of collections from stormwater-only**
2 **customers?**

3 A. PWSA assumes it will collect only 60% of revenues billed to stormwater-only customers.

4 **Q. What is the basis for this assumption?**

5 A. PWSA stated that the assumption was based on collections data for the Philadelphia
6 Water Department and Northeast Ohio Regional Sewer District (“NEORS”), the utility
7 that provides stormwater service in the greater Cleveland area.¹⁵

8 **Q. Is PWSA correct?**

9 A. No, it is not correct. I reviewed data for the Philadelphia Water Department on
10 stormwater-only collections. It appears that PWSA relied on the collection factor for one
11 year only, rather than for the total level of collections. I am attaching as Schedule SJR-3
12 an excerpt from a brief filed by the Philadelphia Water Department in which it
13 summarizes its collections experience from stormwater-only customers. The document
14 shows that, consistently for a multi-year period, Philadelphia Water Department collects
15 approximately 72% of billed revenues from stormwater-only customers.

16 Further, in response to OCA V-13 (a copy of which is attached as Schedule
17 SJR-4), PWSA provided data for NEORS for the most recent five-year period. The
18 data show stormwater-only collections closer to 90% during the past two years.

¹⁵ PWSA St. 8, p. 5.

1 **Q. What do you recommend?**

2 A. I recommend that for this case PWSA assume it will collect at least 75% of billed
3 revenues from stormwater-only customers, and I believe the data from NEORSD could
4 justify an even higher percentage. In future cases, the Authority should document its
5 actual level of collections and explain and justify the measures it takes to maximize the
6 level of collections from stormwater-only customers.

7 ***Reasonableness of Wastewater-Stormwater Subsidy***

8 **Q. You stated earlier that PWSA is not proposing to collect the full cost of providing**
9 **stormwater service from stormwater customers. What is your understanding of the**
10 **Authority's proposal?**

11 A. PWSA is proposing that sanitary wastewater customers provide a subsidy of \$12.4
12 million to stormwater customers.¹⁶ PWSA states that the subsidy is necessary in order to
13 transition customers to paying a separate rate for stormwater service, and that the
14 resulting rate be consistent with stormwater rates charged in other communities.¹⁷

15 **Q. Do you agree that there should be some subsidy from wastewater customers to**
16 **stormwater customers in this case?**

17 A. Yes. In my opinion, it is reasonable to have a short transition period where some
18 stormwater costs continue to be recovered through wastewater rates. This will help
19 customers get used to the idea that stormwater is a separate utility service.

¹⁶ COSS Model, ScenarioManager tab, cell G90.

¹⁷ See PWSA St. 8 at 6 and 13-14; PWSA St. 4 at 44-45.

1 **Q. Do you agree with PWSA that a reasonable level of subsidy is \$12.4 million?**

2 A. No, I do not agree with the amount of subsidy proposed by PWSA. In particular, I
3 disagree that the proposed stormwater fee of \$7.95 per Equivalent Residential Unit
4 (“ERU”) is the highest fee that can be reasonably charged at this time. I also disagree
5 that a \$12.4 million subsidy is reasonable in light of the cost of service.

6 **Q. Why do you disagree with \$7.95 per ERU as the highest fee that it is reasonable to**
7 **charge at this time?**

8 A. I reviewed the stormwater fees charged in other communities in Pennsylvania, using data
9 from a 2020 study conducted by Western Kentucky University.¹⁸ Schedule SJR-5
10 reproduces the data from the study’s appendix for each of the 36 stormwater utilities in
11 Pennsylvania. I have added a summary showing that more than one-third of
12 Pennsylvania’s stormwater utilities (13 of the 35 utilities for which fees are listed)
13 charged more than \$7.95 per ERU in 2020. The fees range from a low of \$2.00 per
14 month to a high of \$14.33 per month. In the greater Pittsburgh area, it appears that the
15 highest fee is in Monroeville at \$10.00 per ERU per month.

16 **Q. Why do you conclude that a \$12.4 million subsidy is unreasonable based on the cost**
17 **of service?**

18 A. In this case, PWSA is proposing to increase the combined wastewater/stormwater
19 revenue requirement by approximately \$9.5 million.¹⁹ Thus, the proposed \$12.4 million

¹⁸ Western Kentucky University Stormwater Utility Survey 2020,
https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1002&context=seas_faculty_pubs

¹⁹ Proposed \$24.3 million in new stormwater revenues less a \$14.8 million reduction in wastewater revenues. COSS Model, Phase_In tab.

1 subsidy would have the entire increase paid by wastewater customers, plus an additional
2 \$2.9 million of costs that are currently incurred by PWSA.

3 Another way of viewing the Authority's proposal is that the full cost of providing
4 stormwater service is \$12.41 per ERU.²⁰ The proposed fee of \$7.95 per ERU represents
5 less than two-thirds of the cost of providing service -- again, placing far too much of the
6 cost on wastewater customers. I do not consider PWSA's proposal to be a reasonable
7 allocation of cost responsibility between wastewater and stormwater customers.

8 **Q. Based on these factors, what do you recommend?**

9 A. I recommend that the stormwater fee should be set at \$10.00 per ERU in January 2023.²¹

10 This is the same fee that has been charged in Monroeville (just a few miles from
11 Pittsburgh) for several years. The fee is far from the highest fee charged in Pennsylvania
12 and it should not impose an unreasonable burden on customers -- especially the vast
13 majority of customers whose wastewater bills would decline by a similar amount.

14 **Q. If the stormwater fee is set at \$10.00 per ERU as you recommend, how much
15 subsidy would be required from wastewater customers?**

16 A. Under PWSA's proposed revenue requirement, the resulting subsidy from wastewater
17 customers would be approximately \$7.27 million.²² To further reduce the impact on
18 wastewater customers, I recommend that the stormwater fee should be set at \$10.00 per
19 ERU even if the Commission finds that PWSA has overstated the stormwater revenue

²⁰ COSS Model, SW>RateDesign tab, cell O130.

²¹ I do not oppose PWSA's proposal to charge 75% of that fee in January 2022, as a way of lessening the impact of the rate increase on customers as we move out of the pandemic. See PWSA St. 4 at 44.

²² 251,500 ERUs (COSS Model, SW>RateDesign tab, cell O129) x \$10.00 per month x 12 months = \$30,180,000, compared to the total cost of stormwater service of \$37,449,360 (id., cell O128).

1 requirement, unless the stormwater revenue requirement is determined to be less than
2 \$30.18 million. That is, the first \$7.27 million reduction in the stormwater revenue
3 requirement should be used to reduce the subsidy paid by wastewater customers.

4 **Stormwater Rate Design for Residential Properties**

5 **Q. Please explain your understanding of how PWSA designed Residential stormwater**
6 **fees.**

7 A. PWSA developed three Residential stormwater fees, which it calls tiers 1, 2, and 3. Tier
8 2 represents the typical single-family residential property, while tier 1 is smaller
9 properties (paying one-half the fee of tier 2) and tier 3 is larger properties (paying twice
10 the fee of tier 2). Specifically, PWSA calculates that the median residential property has
11 1,650 square feet of impervious area (“SFIA”). Tier 1 is for properties with between 400
12 SFIA and 1,015 SFIA. Tier 3 is for properties with more than 2,710 SFIA.

13 **Q. Do you have any concerns with the way in which PWSA developed the Residential**
14 **tiers?**

15 A. Yes, I do. First, I should emphasize that I agree with the concept of having a three-tiered
16 rate for Residential properties. Properties have very different characteristics which can
17 affect the amount of stormwater flowing from the property into PWSA’s system. So as a
18 general matter, I agree that not all properties should be treated the same.

19 I am concerned, however, that PWSA’s methodology implies a degree of
20 accuracy that is not consistent with the data and that is not fair to customers. The logic of
21 PWSA’s approach is to have a middle tier representing most customers, with a few
22 customers qualifying for lower or higher rates based on property characteristics. While I

1 agree with that general approach, I do not agree with the specific breakpoints developed
2 by PWSA.

3 **Q. In your opinion, should there be a logical basis behind the tier breakpoints?**

4 A. Yes. In my opinion, it would be logical -- and readily understandable by customers -- to
5 have the middle tier (paying the fee for one ERU) represent the typical or median
6 property size. The data used by PWSA show this to be approximately 1,650 SFIA.
7 Logically, properties paying one-half the ERU fee should be about one-half the size of a
8 typical property, or about 825 SFIA or smaller. Similarly, properties being asked to pay
9 the fee for 2 ERUs should be about twice the size of a typical property, or about 3,300
10 SFIA or larger.

11 **Q. Are there other factors to consider in setting the breakpoints between tiers?**

12 A. Yes. It must be recognized that there is an inherent inaccuracy, or margin of error, in the
13 calculation of SFIA from satellite imagery. One recent study found the degree of
14 accuracy of SFIA calculations to range from roughly 70% to 95% depending on the
15 specific methodology and data source used.²³ Thus, it must be recognized that there is
16 some imprecision in the data, and fees should be developed that are sensitive to the level
17 of imperfection in the data.

²³ Zhang, H.; Gorelick, S.M.; Zimba, P.V. Extracting Impervious Surface from Aerial Imagery Using Semi-Automatic Sampling and Spectral Stability. *Remote Sens.* 2020, 12, 506. <https://doi.org/10.3390/rs12030506>

1 **Q. Does PWSA recognize that there is some inaccuracy in the SFIA calculations?**

2 A. Yes. In fact, that is the primary reason why PWSA proposes that properties with an SFIA
3 calculation less than 400 SFIA should not be charged any fee. Such a small level of
4 impervious area could be the result of slightly inaccurate property lines or other
5 anomalies in the data. See PWSA response to OCA V-8 attached hereto as Schedule
6 SJR-6.

7 **Q. How do you recommend that the inherent margin of error in SFIA calculations**
8 **should be reflected in the Residential rate design?**

9 A. I recommend that the breakpoints between the tiers should be set in a logical manner, but
10 include a margin of error to try to avoid customers who would meet the criterion for the
11 lower fee being excluded because of data inaccuracies. Specifically, I recommend that
12 the breakpoint between tiers 1 and 2 should be set equal to one-half the median (825
13 SFIA) plus a margin of 100 SFIA, or 925 SFIA. Similarly, the breakpoint between tiers 2
14 and 3 should be set at twice the size of a typical property (3,300 SFIA), plus a margin of
15 100 SFIA, or 3,400 SFIA.

16 **Q. What effect does your proposal have on the number of Residential customers in**
17 **each tier and overall stormwater revenue collection?**

18 A. Table 1 compares the number of Residential customers in each tier under the Authority's
19 proposed tier breakpoints and under my proposed breakpoints. It can be seen that my
20 recommendation results in more customers paying the typical (Tier 2) fee than would be

1 the case under PWSA’s proposal. I estimate this would reduce the number of ERUs
 2 billed to Residential properties by about 5,400 ERUs.²⁴

Table 1: Number of Residential Customers in Each Stormwater Tier Under PWSA Proposed and OCA Recommended Tier Breakpoints

	PWSA Proposed			OCA Recommended		
	<i>SFIA Range</i>	<i>No. of Properties</i>	<i>Billed ERUs</i>	<i>SFIA Range</i>	<i>No. of Properties</i>	<i>Billed ERUs</i>
Tier 1 (0.5 ERU)	400 to 1,014	13,976	6,988	400 to 924	10,224	5,112
Tier 2 (1.0 ERU)	1,015 to 2,709	64,821	64,821	925 to 3,399	75,871	75,871
Tier 3 (2.0 ERU)	2,710 or larger	13,914	27,828	3,400 or larger	6,616	13,232
Total		92,711	99,637		92,711	94,215

3

4 **Q. Can you estimate the effect of your proposal on the wastewater subsidy?**

5 A. Yes. As I explained above, my recommendation to set the stormwater fee at \$10.00 per
 6 ERU would reduce the subsidy from wastewater customers to \$7.27 million instead of
 7 PWSA’s proposed \$12.4 million subsidy. At \$10 per ERU, reducing the number of
 8 Residential ERUs by 5,400 would increase the stormwater subsidy provided by
 9 wastewater customers by approximately \$650,000. That would bring the subsidy to
 10 approximately \$7.92 million, which is approximately \$4.5 million less than PWSA’s
 11 proposed \$12.4 million subsidy.

²⁴ The number of properties in each tier and the change in the number of billed ERUs are calculated using the data provided by PWSA in response to OCA V-14.

1 **Other Tariff Issues**

2 **Q. Does PWSA charge a fee when a customer's check or electronic payment is**
3 **dishonored?**

4 A. Yes. PWSA currently charges a fee of \$30.45 for a dishonored payment.

5 **Q. Is PWSA proposing any changes in the fee for a dishonored payment?**

6 A. Yes, PWSA is proposing to increase the fee to \$40.00.

7 **Q. Are either the current or proposed fees based on PWSA's costs of processing a**
8 **dishonored payment?**

9 A. No. PWSA was asked to provide support for the cost of processing a dishonored
10 payment. PWSA provided the response to OCA V-3 (attached as Schedule SJR-7) and
11 also provided a spreadsheet file that is supposed to provide the detailed calculation in
12 support of each miscellaneous fee in the tariff (attachment to OCA V-1). Neither
13 document provides support for such high dishonored payment fees.

14 **Q. First, why do you consider those charges too high?**

15 A. I have reviewed dishonored payment (or bad check) fees in numerous utility rate cases
16 throughout the country. PWSA's present charge of \$30.45 is one of the highest I have
17 seen charged by any utility. In contrast, I am currently participating in a rate case for
18 National Grid's gas utility in Massachusetts which is proposing to decrease its dishonored
19 payment fee from \$9.10 to \$2.40.²⁵ I am routinely seeing cost-based dishonored payment

²⁵ Massachusetts Department of Public Utilities, Docket No. D.P.U. 20-120, proposed Tariff M.D.P.U. No. 4.4, page B-1.

1 charges of \$10 or less in other states, with charges often being reduced as the process
2 becomes more automated (as is the case with National Grid in Massachusetts).

3 **Q. Do the documents provided by PWSA support the current charge of \$30.45 or an**
4 **increase in the charge to \$40.00?**

5 A. No, they do not. The “support” provided by PWSA in the OCA V-1 spreadsheet consists
6 entirely of the following statement: “\$20.00 Fee that the bank charges for a returned
7 check. 10.45 - Fee PWSA charges for holding the returned check.” The summary tab in
8 that spreadsheet then “recommends” that the charge be rounded up to the next \$10.00
9 increment without providing any explanation or support for the change.

10 **Q. Has PWSA provided any support for a cost of \$10.45 for PWSA “holding the**
11 **returned check”?**

12 A. No.

13 **Q. Is PWSA correct that it is charged \$20 by its bank when a customer’s check is**
14 **dishonored?**

15 A. No. PWSA’s response to OCA V-3 (Schedule SJR-7) states that its bank charges PWSA
16 \$3.50 when a check is dishonored or \$0.25 when an electronic payment is dishonored.
17 There is absolutely no support for a \$20 bank fee.

18 **Q. Does PWSA incur any processing costs when a payment is dishonored?**

19 A. I am certain that it does, but PWSA has not documented any such costs. The response to
20 OCA V-3 states that PWSA receives an electronic file of dishonored payments from its
21 bank, but PWSA “does not currently have the capability to read that electronic file into its

1 Customer Information System.” So at the present time, PWSA must incur some cost to
2 manually enter information that it receives electronically. In the future, however, OCA
3 V-3 states PWSA expects to have the capability to use the electronic file directly, which
4 would further reduce its processing costs.

5 **Q. Based on the information provided by PWSA, what do you recommend?**

6 A. First, I recommend that the fee PWSA charges for a dishonored payment should be
7 reduced to no more than \$14.00. Such a fee would compensate PWSA for the \$3.50 fee
8 its bank charges for a dishonored check, and provide an additional \$10.50 to cover
9 PWSA’s processing costs (or, as the Authority puts it, its cost for “holding” a dishonored
10 payment). Further, because some of the dishonored payments will be electronic, which
11 incur only a \$0.25 bank fee, setting the fee at \$14.00 is likely to provide PWSA more
12 than \$10.50, on average, to cover its processing costs.

13 Second, I recommend that PWSA be required to provide detailed cost support for
14 its dishonored payment fee in its next rate case. Further, such an analysis should be
15 revisited when PWSA has the capability to use the electronic bank files directly in its
16 customer information system, as that should further reduce the cost of processing a
17 dishonored payment.

18 Conclusion

19 **Q. Does this conclude your direct testimony?**

20 A. Yes, it does.

Appendix A

Appendix A

Scott J. Rubin

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Current Position

Public Utility Attorney and Consultant. 1994 to present. I provide legal, consulting, and expert witness services to various organizations interested in the regulation of public utilities.

Previous Positions

Lecturer in Computer Science, Susquehanna University, Selinsgrove, PA. 1993 to 2000.

Senior Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1990 to 1994.

I supervised the administrative and technical staff and shared with one other senior attorney the supervision of a legal staff of 14 attorneys.

Assistant Consumer Advocate, Office of Consumer Advocate, Harrisburg, PA. 1983 to 1990.

Associate, Laws and Staruch, Harrisburg, PA. 1981 to 1983.

Law Clerk, U.S. Environmental Protection Agency, Washington, DC. 1980 to 1981.

Research Assistant, Rockville Consulting Group, Washington, DC. 1979.

Current Professional Activities

Member, American Bar Association, Infrastructure and Regulated Industries Section.

Member, American Water Works Association.

Admitted to practice law before the Supreme Court of Pennsylvania, the New York State Court of Appeals, the United States District Court for the Middle District of Pennsylvania, the United States Court of Appeals for the Third Circuit, and the Supreme Court of the United States.

Served as peer reviewer for *Electricity Journal*, *Journal American Water Works Association*, *Journal of Benefit-Cost Analysis*, and *Utilities Policy*.

Previous Professional Activities

Member, American Water Works Association, Rates and Charges Subcommittee, 1998-2001.

Member, Federal Advisory Committee on Disinfectants and Disinfection By-Products in Drinking Water, U.S. Environmental Protection Agency, Washington, DC. 1992 to 1994.

Chair, Water Committee, National Association of State Utility Consumer Advocates, Washington, DC. 1990 to 1994; member of committee from 1988 to 1990.

Member, Board of Directors, Pennsylvania Energy Development Authority, Harrisburg, PA. 1990 to 1994.

Member, Small Water Systems Advisory Committee, Pennsylvania Department of Environmental Resources, Harrisburg, PA. 1990 to 1992.

Member, Ad Hoc Committee on Emissions Control and Acid Rain Compliance, National Association of State Utility Consumer Advocates, 1991.

Member, Nitrogen Oxides Subcommittee of the Acid Rain Advisory Committee, U.S. Environmental Protection Agency, Washington DC. 1991.

Education

J.D. with Honors, George Washington University, Washington, DC. 1981.

B.A. with Distinction in Political Science, Pennsylvania State University, University Park, PA. 1978.

Publications and Presentations (* denotes peer-reviewed publications)

1. "Quality of Service Issues," a speech to the Pennsylvania Public Utility Commission Consumer Conference, State College, PA. 1988.
2. K.L. Pape and S.J. Rubin, "Current Developments in Water Utility Law," in *Pennsylvania Public Utility Law* (Pennsylvania Bar Institute). 1990.
3. Presentation on Water Utility Holding Companies to the Annual Meeting of the National Association of State Utility Consumer Advocates, Orlando, FL. 1990.
4. "How the OCA Approaches Quality of Service Issues," a speech to the Pennsylvania Chapter of the National Association of Water Companies. 1991.
5. Presentation on the Safe Drinking Water Act to the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Seattle, WA. 1991.
6. "A Consumer Advocate's View of Federal Pre-emption in Electric Utility Cases," a speech to the Pennsylvania Public Utility Commission Electricity Conference. 1991.
7. Workshop on Safe Drinking Water Act Compliance Issues at the Mid-Year Meeting of the National Association of State Utility Consumer Advocates, Washington, DC. 1992.
8. Formal Discussant, Regional Acid Rain Workshop, U.S. Environmental Protection Agency and National Regulatory Research Institute, Charlotte, NC. 1992.
9. S.J. Rubin and S.P. O'Neal, "A Quantitative Assessment of the Viability of Small Water Systems in Pennsylvania," *Proceedings of the Eighth NARUC Biennial Regulatory Information Conference*, National Regulatory Research Institute (Columbus, OH 1992), IV:79-97.
10. "The OCA's Concerns About Drinking Water," a speech to the Pennsylvania Public Utility Commission Water Conference. 1992.
11. Member, Technical Horizons Panel, Annual Meeting of the National Association of Water Companies, Hilton Head, SC. 1992.
12. M.D. Klein and S.J. Rubin, "Water and Sewer -- Update on Clean Streams, Safe Drinking Water, Waste Disposal and Pennvest," *Pennsylvania Public Utility Law Conference* (Pennsylvania Bar Institute). 1992.

13. Presentation on Small Water System Viability to the Technical Assistance Center for Small Water Companies, Pa. Department of Environmental Resources, Harrisburg, PA. 1993
14. "The Results Through a Public Service Commission Lens," speaker and participant in panel discussion at Symposium: "Impact of EPA's Allowance Auction," Washington, DC, sponsored by AER*X. 1993.
15. "The Hottest Legislative Issue of Today -- Reauthorization of the Safe Drinking Water Act," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, San Antonio, TX. 1993.
16. "Water Service in the Year 2000," a speech to the Conference: "Utilities and Public Policy III: The Challenges of Change," sponsored by the Pennsylvania Public Utility Commission and the Pennsylvania State University, University Park, PA. 1993.
17. "Government Regulation of the Drinking Water Supply: Is it Properly Focused?," speaker and participant in panel discussion at the National Consumers League's Forum on Drinking Water Safety and Quality, Washington, DC. 1993. Reprinted in *Rural Water*, Vol. 15 No. 1 (Spring 1994), pages 13-16.
18. "Telephone Penetration Rates for Renters in Pennsylvania," a study prepared for the Pennsylvania Office of Consumer Advocate. 1993.
19. "Zealous Advocacy, Ethical Limitations and Considerations," participant in panel discussion at "Continuing Legal Education in Ethics for Pennsylvania Lawyers," sponsored by the Office of General Counsel, Commonwealth of Pennsylvania, State College, PA. 1993.
20. "Serving the Customer," participant in panel discussion at the Annual Conference of the National Association of Water Companies, Williamsburg, VA. 1993.
21. "A Simple, Inexpensive, Quantitative Method to Assess the Viability of Small Water Systems," a speech to the Water Supply Symposium, New York Section of the American Water Works Association, Syracuse, NY. 1993.
22. * S.J. Rubin, "Are Water Rates Becoming Unaffordable?," *Journal American Water Works Association*, Vol. 86, No. 2 (February 1994), pages 79-86.
23. "Why Water Rates Will Double (If We're Lucky): Federal Drinking Water Policy and Its Effect on New England," a briefing for the New England Conference of Public Utilities Commissioners, Andover, MA. 1994.
24. "Are Water Rates Becoming Unaffordable?," a speech to the Legislative and Regulatory Conference, Association of Metropolitan Water Agencies, Washington, DC. 1994.
25. "Relationships: Drinking Water, Health, Risk and Affordability," speaker and participant in panel discussion at the Annual Meeting of the Southeastern Association of Regulatory Commissioners, Charleston, SC. 1994.
26. "Small System Viability: Assessment Methods and Implementation Issues," speaker and participant in panel discussion at the Annual Conference of the American Water Works Association, New York, NY. 1994.

27. S.J. Rubin, "How much should we spend to save a life?," *Seattle Journal of Commerce*, August 18, 1994 (Protecting the Environment Supplement), pages B-4 to B-5.
28. S. Rubin, S. Bernow, M. Fulmer, J. Goldstein, and I. Peters, *An Evaluation of Kentucky-American Water Company's Long-Range Planning*, prepared for the Utility and Rate Intervention Division, Kentucky Office of the Attorney General (Tellus Institute 1994).
29. S.J. Rubin, "Small System Monitoring: What Does It Mean?," *Impacts of Monitoring for Phase II/V Drinking Water Regulations on Rural and Small Communities* (National Rural Water Association 1994), pages 6-12.
30. "Surviving the Safe Drinking Water Act," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, Reno, NV. 1994.
31. "Safe Drinking Water Act Compliance -- Ratemaking Implications," speaker at the National Conference of Regulatory Attorneys, Scottsdale, AZ. 1995. Reprinted in *Water*, Vol. 36, No. 2 (Summer 1995), pages 28-29.
32. S.J. Rubin, "Water: Why Isn't it Free? The Case of Small Utilities in Pennsylvania," *Utilities, Consumers & Public Policy: Issues of Quality, Affordability, and Competition, Proceedings of the Fourth Utilities, Consumers and Public Policy Conference* (Pennsylvania State University 1995), pages 177-183.
33. S.J. Rubin, "Water Rates: An Affordable Housing Issue?," *Home Energy*, Vol. 12 No. 4 (July/August 1995), page 37.
34. Speaker and participant in the Water Policy Forum, sponsored by the National Association of Water Companies, Naples, FL. 1995.
35. Participant in panel discussion on "The Efficient and Effective Maintenance and Delivery of Potable Water at Affordable Rates to the People of New Jersey," at The New Advocacy: Protecting Consumers in the Emerging Era of Utility Competition, a conference sponsored by the New Jersey Division of the Ratepayer Advocate, Newark, NJ. 1995.
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37. S. Rubin, "A Nationwide Practice from a Small Town in Pa.," *Lawyers & the Internet – a Supplement to the Legal Intelligencer and Pa. Law Weekly* (February 12, 1996), page S6.
38. "Changing Customers' Expectations in the Water Industry," speaker at the Mid-America Regulatory Commissioners Conference, Chicago, IL. 1996, reprinted in *Water* Vol. 37 No. 3 (Winter 1997), pages 12-14.
39. "Recent Federal Legislation Affecting Drinking Water Utilities," speaker at Pennsylvania Public Utility Law Conference, Pennsylvania Bar Institute, Hershey, PA. 1996.
40. "Clean Water at Affordable Rates: A Ratepayers Conference," moderator at symposium sponsored by the New Jersey Division of Ratepayer Advocate, Trenton, NJ. 1996.

41. "Water Workshop: How New Laws Will Affect the Economic Regulation of the Water Industry," speaker at the Annual Meeting of the National Association of State Utility Consumer Advocates, San Francisco, CA. 1996.
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43. * J.E. Cromwell III, S.J. Rubin, F.C. Marrocco, and M.E. Leevan, "Business Planning for Small System Capacity Development," *Journal American Water Works Association*, Vol. 89, No. 1 (January 1997), pages 47-57.
44. "Capacity Development – More than Viability Under a New Name," speaker at National Association of Regulatory Utility Commissioners Winter Meetings, Washington, DC. 1997.
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48. "Capacity Development in the Water Industry," speaker at the Annual Meeting of the National Association of Regulatory Utility Commissioners, Boston, MA. 1997.
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50. Scott J. Rubin, "A Nationwide Look at the Affordability of Water Service," *Proceedings of the 1998 Annual Conference of the American Water Works Association*, Water Research, Vol. C, No. 3, pages 113-129 (American Water Works Association, 1998).
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55. Keynote Address, \$1 Energy Fund, Inc., Annual Membership Meeting, Monroeville, PA. 1999.

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65. Scott J. Rubin, Consumer Issues in the Water Industry, NARUC Annual Regulatory Studies Program, East Lansing, MI. 2000.
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6. *West Penn Power Co. v. State Tax Department of West Virginia*, Circuit Court of Kanawha County, West Virginia, Civil Action No. 89-C-3056. 1993. Concerning regulatory policy and the effects of a taxation statute on out-of-state utility ratepayers, on behalf of the Pa. Office of Consumer Advocate
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9. *An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company*, Ky. Public Service Commission, Case No. 93-434. 1994. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Utility and Rate Intervention Division.

10. *The Petition on Behalf of Gordon's Corner Water Company for an Increase in Rates*, New Jersey Board of Public Utilities, Docket No. WR94020037. 1994. Concerning revenue requirements and rate design, on behalf of the New Jersey Division of Ratepayer Advocate.
11. *Re Consumers Maine Water Company Request for Approval of Contracts with Consumers Water Company and with Ohio Water Service Company*, Me. Public Utilities Commission, Docket No. 94-352. 1994. Concerning affiliated interest agreements, on behalf of the Maine Public Advocate.
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13. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of the Dayton Power and Light Company and Related Matters*, Ohio Public Utilities Commission, Case No. 94-105-EL-EFC. 1995. Concerning Clean Air Act implementation (case settled before testimony was filed), on behalf of the Office of the Ohio Consumers' Counsel.
14. *Kennebec Water District Proposed Increase in Rates*, Maine Public Utilities Commission, Docket No. 95-091. 1995. Concerning the reasonableness of planning decisions and the relationship between a publicly owned water district and a very large industrial customer, on behalf of the Maine Public Advocate.
15. *Winter Harbor Water Company, Proposed Schedule Revisions to Introduce a Readiness-to-Serve Charge*, Maine Public Utilities Commission, Docket No. 95-271. 1995 and 1996. Concerning standards for, and the reasonableness of, imposing a readiness to serve charge and/or exit fee on the customers of a small investor-owned water utility, on behalf of the Maine Public Advocate.
16. *In the Matter of the 1995 Long-Term Electric Forecast Report of the Cincinnati Gas & Electric Company*, Public Utilities Commission of Ohio, Case No. 95-203-EL-FOR, and *In the Matter of the Two-Year Review of the Cincinnati Gas & Electric Company's Environmental Compliance Plan Pursuant to Section 4913.05, Revised Cost*, Case No. 95-747-EL-ECP. 1996. Concerning the reasonableness of the utility's long-range supply and demand-management plans, the reasonableness of its plan for complying with the Clean Air Act Amendments of 1990, and discussing methods to ensure the provision of utility service to low-income customers, on behalf of the Office of the Ohio Consumers' Counsel..
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21. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cleveland Electric Illuminating Company and Toledo Edison Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-107-EL-EFC and 96-108-EL-EFC. 1996. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
22. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 96-101-EL-EFC and 96-102-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
23. *An Investigation of the Sources of Supply and Future Demand of Kentucky-American Water Company (Phase II)*, Kentucky Public Service Commission, Docket No. 93-434. 1997. Concerning supply and demand planning, on behalf of the Kentucky Office of Attorney General, Public Service Litigation Branch.
24. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Cincinnati Gas and Electric Co. and Related Matters*, Public Utilities Commission of Ohio, Case No. 96-103-EL-EFC. 1997. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
25. *Bangor Hydro-Electric Company Petition for Temporary Rate Increase*, Maine Public Utilities Commission, Docket No. 97-201. 1997. Concerning the reasonableness of granting an electric utility's request for emergency rate relief, and related issues, on behalf of the Maine Public Advocate.
26. *Testimony concerning H.B. 1068 Relating to Restructuring of the Natural Gas Utility Industry*, Consumer Affairs Committee, Pennsylvania House of Representatives. 1997. Concerning the provisions of proposed legislation to restructure the natural gas utility industry in Pennsylvania, on behalf of the Pennsylvania AFL-CIO Gas Utility Caucus.
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29. *Bangor Gas Company, L.L.C., Petition for Approval to Furnish Gas Service in the State of Maine*, Maine Public Utilities Commission, Docket No. 97-795. 1998. Concerning the standards and public policy

concerns involved in issuing a certificate of public convenience and necessity for a new natural gas utility, and related ratemaking issues, on behalf of the Maine Public Advocate.

30. *In the Matter of the Investigation on Motion of the Commission into the Adequacy of the Public Utility Water Service Provided by Tidewater Utilities, Inc., in Areas in Southern New Castle County, Delaware*, Delaware Public Service Commission, Docket No. 309-97. 1998. Concerning the standards for the provision of efficient, sufficient, and adequate water service, and the application of those standards to a water utility, on behalf of the Delaware Division of the Public Advocate.
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32. *Olde Port Mariner Fleet, Inc. Complaint Regarding Casco Bay Island Transit District's Tour and Charter Service*, Maine Public Utilities Commission, Docket No. 98-161. 1998. Concerning the standards and requirements for allocating costs and separating operations between regulated and unregulated operations of a transportation utility, on behalf of the Maine Public Advocate and Olde Port Mariner Fleet, Inc.
33. *Central Maine Power Company Investigation of Stranded Costs, Transmission and Distribution Utility Revenue Requirements, and Rate Design*, Maine Public Utilities Commission, Docket No. 97-580. 1998. Concerning the treatment of existing rate discounts when designing rates for a transmission and distribution electric utility, on behalf of the Maine Public Advocate.
34. *Pa. Public Utility Commission v. Manufacturers Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00984275. 1998. Concerning rate design on behalf of the Manufacturers Water Industrial Users.
35. *In the Matter of Petition of Pennsgrove Water Supply Company for an Increase in Rates for Water Service*, New Jersey Board of Public Utilities, Docket No. WR98030147. 1998. Concerning the revenue requirements, level of affiliated charges, and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
36. *In the Matter of Petition of Seaview Water Company for an Increase in Rates for Water Service*, New Jersey Board of Public Utilities, Docket No. WR98040193. 1999. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
37. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Ohio Power Company and Columbus Southern Power Company and Related Matters*, Public Utilities Commission of Ohio, Case Nos. 98-101-EL-EFC and 98-102-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.
38. *In the Matter of the Regulation of the Electric Fuel Component Contained within the Rate Schedules of Dayton Power and Light Company and Related Matters*, Public Utilities Commission of Ohio, Case No. 98-105-EL-EFC. 1999. Concerning the costs and procedures associated with the implementation of the Clean Air Act Amendments of 1990, on behalf of the Ohio Consumers' Counsel.

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40. *County of Suffolk, et al. v. Long Island Lighting Company, et al.*, U.S. District Court for the Eastern District of New York, Case No. 87-CV-0646. 2000. Submitted two affidavits concerning the calculation and collection of court-ordered refunds to utility customers, on behalf of counsel for the plaintiffs.
41. *Northern Utilities, Inc., Petition for Waivers from Chapter 820*, Maine Public Utilities Commission, Docket No. 99-254. 2000. Concerning the standards and requirements for defining and separating a natural gas utility's core and non-core business functions, on behalf of the Maine Public Advocate.
42. *Notice of Adjustment of the Rates of Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2000-120. 2000. Concerning the appropriate methods for allocating costs and designing rates, on behalf of the Kentucky Office of Attorney General.
43. *In the Matter of the Petition of Gordon's Corner Water Company for an Increase in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR00050304. 2000. Concerning the revenue requirements and rate design for a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
44. *Testimony concerning Arsenic in Drinking Water: An Update on the Science, Benefits, and Costs*, Committee on Science, United States House of Representatives. 2001. Concerning the effects on low-income households and small communities from a more stringent regulation of arsenic in drinking water.
45. *In the Matter of the Application of The Cincinnati Gas & Electric Company for an Increase in Gas Rates in its Service Territory*, Public Utilities Commission of Ohio, Case No. 01-1228-GA-AIR, et al. 2002. Concerning the need for and structure of a special rider and alternative form of regulation for an accelerated main replacement program, on behalf of the Ohio Consumers' Counsel.
46. *Pennsylvania State Treasurer's Hearing on Enron and Corporate Governance Issues*. 2002. Concerning Enron's role in Pennsylvania's electricity market and related issues, on behalf of the Pennsylvania AFL-CIO.
47. *An Investigation into the Feasibility and Advisability of Kentucky-American Water Company's Proposed Solution to its Water Supply Deficit*, Kentucky Public Service Commission, Case No. 2001-00117. 2002. Concerning water supply planning, regulatory oversight, and related issue, on behalf of the Kentucky Office of Attorney General.
48. *Joint Application of Pennsylvania-American Water Company and Thames Water Aqua Holdings GmbH*, Pennsylvania Public Utility Commission, Docket Nos. A-212285F0096 and A-230073F0004. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.
49. *Application for Approval of the Transfer of Control of Kentucky-American Water Company to RWE AG and Thames Water Aqua Holdings GmbH*, Kentucky Public Service Commission, Case No. 2002-00018. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Kentucky Office of Attorney General.

50. *Joint Petition for the Consent and Approval of the Acquisition of the Outstanding Common Stock of American Water Works Company, Inc., the Parent Company and Controlling Shareholder of West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 01-1691-W-PC. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the Consumer Advocate Division of the West Virginia Public Service Commission.
51. *Joint Petition of New Jersey-American Water Company, Inc. and Thames Water Aqua Holdings GmbH for Approval of Change in Control of New Jersey-American Water Company, Inc.*, New Jersey Board of Public Utilities, Docket No. WM01120833. 2002. Concerning the risks and benefits associated with the proposed acquisition of a water utility, on behalf of the New Jersey Division of Ratepayer Advocate.
52. *Illinois-American Water Company, Proposed General Increase in Water Rates*, Illinois Commerce Commission, Docket No. 02-0690. 2003. Concerning rate design and cost of service issues, on behalf of the Illinois Office of the Attorney General.
53. *Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00038304. 2003. Concerning rate design and cost of service issues, on behalf of the Pennsylvania Office of Consumer Advocate.
54. *West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 03-0353-W-42T. 2003. Concerning affordability, rate design, and cost of service issues, on behalf of the West Virginia Consumer Advocate Division.
55. *Petition of Seabrook Water Corp. for an Increase in Rates and Charges for Water Service*, New Jersey Board of Public Utilities, Docket No. WR3010054. 2003. Concerning revenue requirements, rate design, prudence, and regulatory policy, on behalf of the New Jersey Division of Ratepayer Advocate.
56. *Chesapeake Ranch Water Co. v. Board of Commissioners of Calvert County*, U.S. District Court for Southern District of Maryland, Civil Action No. 8:03-cv-02527-AW. 2004. Submitted expert report concerning the expected level of rates under various options for serving new commercial development, on behalf of the plaintiff.
57. *Testimony concerning Lead in Drinking Water*, Committee on Government Reform, United States House of Representatives. 2004. Concerning the trade-offs faced by low-income households when drinking water costs increase, including an analysis of H.R. 4268.
58. *West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 04-0373-W-42T. 2004. Concerning affordability and rate comparisons, on behalf of the West Virginia Consumer Advocate Division.
59. *West Virginia-American Water Company*, West Virginia Public Service Commission, Case No. 04-0358-W-PC. 2004. Concerning costs, benefits, and risks associated with a wholesale water sales contract, on behalf of the West Virginia Consumer Advocate Division.
60. *Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2004-00103. 2004. Concerning rate design and tariff issues, on behalf of the Kentucky Office of Attorney General.

61. *New Landing Utility, Inc.*, Illinois Commerce Commission, Docket No. 04-0610. 2005. Concerning the adequacy of service provided by, and standards of performance for, a water and wastewater utility, on behalf of the Illinois Office of Attorney General.
62. *People of the State of Illinois v. New Landing Utility, Inc.*, Circuit Court of the 15th Judicial District, Ogle County, Illinois, No. 00-CH-97. 2005. Concerning the standards of performance for a water and wastewater utility, including whether a receiver should be appointed to manage the utility's operations, on behalf of the Illinois Office of Attorney General.
63. *Hope Gas, Inc. d/b/a Dominion Hope*, West Virginia Public Service Commission, Case No. 05-0304-G-42T. 2005. Concerning the utility's relationships with affiliated companies, including an appropriate level of revenues and expenses associated with services provided to and received from affiliates, on behalf of the West Virginia Consumer Advocate Division.
64. *Monongahela Power Co. and The Potomac Edison Co.*, West Virginia Public Service Commission, Case Nos. 05-0402-E-CN and 05-0750-E-PC. 2005. Concerning review of a plan to finance the construction of pollution control facilities and related issues, on behalf of the West Virginia Consumer Advocate Division.
65. *Joint Application of Duke Energy Corp., et al., for Approval of a Transfer and Acquisition of Control*, Case Kentucky Public Service Commission, No. 2005-00228. 2005. Concerning the risks and benefits associated with the proposed acquisition of an energy utility, on behalf of the Kentucky Office of the Attorney General.
66. *Commonwealth Edison Company proposed general revision of rates, restructuring and price unbundling of bundled service rates, and revision of other terms and conditions of service*, Illinois Commerce Commission, Docket No. 05-0597. 2005. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.
67. *Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00051030. 2006. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.
68. *Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, and Illinois Power Company d/b/a AmerenIP, proposed general increases in rates for delivery service*, Illinois Commerce Commission, Docket Nos. 06-0070, et al. 2006. Concerning rate design and cost of service, on behalf of the Illinois Office of Attorney General.
69. *Grens, et al., v. Illinois-American Water Co.*, Illinois Commerce Commission, Docket Nos. 5-0681, et al. 2006. Concerning utility billing, metering, meter reading, and customer service practices, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.
70. *Commonwealth Edison Company Petition for Approval of Tariffs Implementing ComEd's Proposed Residential Rate Stabilization Program*, Illinois Commerce Commission, Docket No. 06-0411. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.
71. *Illinois-American Water Company, Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges Pursuant to 83 Ill. Adm. Code 655*, Illinois Commerce

- Commission, Docket No. 06-0196. 2006. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General and the Village of Homer Glen, Illinois.
72. *Illinois-American Water Company, et al.*, Illinois Commerce Commission, Docket No. 06-0336. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Illinois Office of Attorney General.
73. *Joint Petition of Kentucky-American Water Company, et al.*, Kentucky Public Service Commission, Docket No. 2006-00197. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Kentucky Office of Attorney General.
74. *Aqua Illinois, Inc. Proposed Increase in Water Rates for the Kankakee Division*, Illinois Commerce Commission, Docket No. 06-0285. 2006. Concerning various revenue requirement, rate design, and tariff issues, on behalf of the County of Kankakee.
75. *Housing Authority for the City of Pottsville v. Schuylkill County Municipal Authority*, Court of Common Pleas of Schuylkill County, Pennsylvania, No. S-789-2000. 2006. Concerning the reasonableness and uniformity of rates charged by a municipal water authority, on behalf of the Pottsville Housing Authority.
76. *Application of Pennsylvania-American Water Company for Approval of a Change in Control*, Pennsylvania Public Utility Commission, Docket No. A-212285F0136. 2006. Concerning the risks and benefits associated with the proposed divestiture of a water utility, on behalf of the Pennsylvania Office of Consumer Advocate.
77. *Application of Artesian Water Company, Inc., for an Increase in Water Rates*, Delaware Public Service Commission, Docket No. 06-158. 2006. Concerning rate design and cost of service, on behalf of the Staff of the Delaware Public Service Commission.
78. *Central Illinois Light Company, Central Illinois Public Service Company, and Illinois Power Company: Petition Requesting Approval of Deferral and Securitization of Power Costs*, Illinois Commerce Commission, Docket No. 06-0448. 2006. Concerning a utility's proposed purchased power phase-in proposal, in behalf of the Illinois Office of Attorney General.
79. *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Revising the Distribution System Improvement Charge*, Pennsylvania Public Utility Commission, Docket No. P-00062241. 2007. Concerning the reasonableness of a water utility's proposal to increase the cap on a statutorily authorized distribution system surcharge, on behalf of the Pennsylvania Office of Consumer Advocate.
80. *Adjustment of the Rates of Kentucky-American Water Company*, Kentucky Public Service Commission, Case No. 2007-00143. 2007. Concerning rate design and cost of service, on behalf of the Kentucky Office of Attorney General.
81. *Application of Kentucky-American Water Company for a Certificate of Convenience and Necessity Authorizing the Construction of Kentucky River Station II, Associated Facilities and Transmission Main*, Kentucky Public Service Commission, Case No. 2007-00134. 2007. Concerning the life-cycle costs of a planned water supply source and the imposition of conditions on the construction of that project, on behalf of the Kentucky Office of Attorney General.

82. *Pa. Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-00072229. 2007. Concerning rate design and cost of service, on behalf of the Pennsylvania Office of Consumer Advocate.
83. *Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 07-0195. 2007. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.
84. *In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates for Water Service Provided in the Lake Erie Division*, Public Utilities Commission of Ohio, Case No.07-0564-WW-AIR. 2007. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
85. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-00072711. 2008. Concerning rate design, on behalf of the Masthope Property Owners Council.
86. *Illinois-American Water Company Proposed increase in water and sewer rates*, Illinois Commerce Commission, Docket No. 07-0507. 2008. Concerning rate design and demand studies, on behalf of the Illinois Office of Attorney General.
87. *Central Illinois Light Company, d/b/a AmerenCILCO; Central Illinois Public Service Company, d/b/a AmerenCIPS; Illinois Power Company, d/b/a AmerenIP: Proposed general increase in rates for electric delivery service*, Illinois Commerce Commission Docket Nos. 07-0585, 07-0586, 07-0587. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.
88. *Commonwealth Edison Company: Proposed general increase in electric rates*, Illinois Commerce Commission Docket No. 07-0566. 2008. Concerning rate design and cost of service studies, on behalf of the Illinois Office of Attorney General.
89. *In the Matter of Application of Ohio American Water Co. to Increase Its Rates*, Public Utilities Commission of Ohio, Case No. 07-1112-WS-AIR. 2008. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
90. *In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for Authority to Increase Rates for its Gas Service*, Public Utilities Commission of Ohio, Case Nos. 07-829-GA-AIR, et al. 2008. Concerning the need for, and structure of, an accelerated infrastructure replacement program and rate surcharge, on behalf of the Office of the Ohio Consumers' Counsel.
91. *Pa. Public Utility Commission v. Pennsylvania American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2032689. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.
92. *Pa. Public Utility Commission v. York Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2008-2023067. 2008. Concerning rate design, cost of service study, and other tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.

93. *Northern Illinois Gas Company d/b/a Nicor Gas Company*, Illinois Commerce Commission, Docket No. 08-0363. 2008. Concerning rate design, cost of service, and automatic rate adjustments, on behalf of the Illinois Office of Attorney General.
94. *West Virginia American Water Company*, West Virginia Public Service Commission, Case No. 08-0900-W-42T. 2008. Concerning affiliated interest charges and relationships, on behalf of the Consumer Advocate Division of the Public Service Commission of West Virginia.
95. *Illinois-American Water Company Application for Approval of its Annual Reconciliation of Purchased Water and Purchased Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 08-0218. 2008. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.
96. *In the Matter of Application of Duke Energy Ohio, Inc. for an Increase in Electric Rates*, Public Utilities Commission of Ohio, Case No. 08-0709-EL-AIR. 2009. Concerning rate design and cost of service, on behalf of the Office of the Ohio Consumers' Counsel.
97. *The Peoples Gas Light and Coke Company and North Shore Gas Company Proposed General Increase in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 09-0166 and 09-0167. 2009. Concerning rate design and automatic rate adjustments on behalf of the Illinois Office of Attorney General, Citizens Utility Board, and City of Chicago.
98. *Illinois-American Water Company Proposed Increase in Water and Sewer Rates*, Illinois Commerce Commission, Docket No. 09-0319. 2009. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General and Citizens Utility Board.
99. *Pa. Public Utility Commission v. Aqua Pennsylvania Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2009-2132019. 2010. Concerning rate design, cost of service, and automatic adjustment tariffs, on behalf of the Pennsylvania Office of Consumer Advocate.
100. *Apple Canyon Utility Company and Lake Wildwood Utilities Corporation Proposed General Increases in Water Rates*, Illinois Commerce Commission, Docket Nos. 09-0548 and 09-0549. 2010. Concerning parent-company charges, quality of service, and other matters, on behalf of Apple Canyon Lake Property Owners' Association and Lake Wildwood Association, Inc.
101. *Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules*, Connecticut Department of Public Utility Control, Docket No. 10-02-13. 2010. Concerning rate design, proof of revenues, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.
102. *Illinois-American Water Company Annual Reconciliation of Purchased Water and Sewage Treatment Surcharges*, Illinois Commerce Commission, Docket No. 09-0151. 2010. Concerning the reconciliation of purchased water and sewer charges, on behalf of the Illinois Office of Attorney General.
103. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket Nos. R-2010-2166212, et al. 2010. Concerning rate design and cost of service study for four wastewater utility districts, on behalf of the Pennsylvania Office of Consumer Advocate.
104. *Central Illinois Light Company d/b/a AmerenCILCO, Central Illinois Public Service Company d/b/a AmerenCIPS, Illinois Power Company d/b/a AmerenIP Petition for accounting order*, Illinois Commerce

- Commission, Docket No. 10-0517. 2010. Concerning ratemaking procedures for a multi-district electric and natural gas utility, on behalf of the Illinois Office of Attorney General.
105. *Commonwealth Edison Company Petition for General Increase in Delivery Service Rates*, Illinois Commerce Commission Docket No. 10-0467. 2010. Concerning rate design and cost of service study, on behalf of the Illinois Office of Attorney General.
106. *Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2010-2179103. 2010. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.
107. *Application of Yankee Gas Services Company for Amended Rate Schedules*, Connecticut Department of Public Utility Control, Docket No. 10-12-02. 2011. Concerning rate design and cost of service for a natural gas utility, on behalf of the Connecticut Office of Consumers' Counsel.
108. *California-American Water Company*, California Public Utilities Commission, Application 10-07-007. 2011. Concerning rate design and cost of service for multiple water-utility service areas, on behalf of The Utility Reform Network.
109. *Little Washington Wastewater Company, Inc., Masthope Wastewater Division*, Pennsylvania Public Utility Commission Docket No. R-2010-2207833. 2011. Concerning rate design and various revenue requirements issues, on behalf of the Masthope Property Owners Council.
110. *In the matter of Pittsfield Aqueduct Company, Inc.*, New Hampshire Public Utilities Commission Case No. DW 10-090. 2011. Concerning rate design and cost of service on behalf of the New Hampshire Office of the Consumer Advocate.
111. *In the matters of Pennichuck Water Works, Inc. Permanent Rate Case and Petition for Approval of Special Contract with Anheuser-Busch, Inc.*, New Hampshire Public Utilities Commission Case Nos. DW 10-091 and DW 11-014. 2011. Concerning rate design, cost of service, and contract interpretation on behalf of the New Hampshire Office of the Consumer Advocate.
112. *Artesian Water Co., Inc. v. Chester Water Authority*, U.S. District Court for the Eastern District of Pennsylvania Case No. 10-CV-07453-JP. 2011. Concerning cost of service, ratemaking methods, and contract interpretation on behalf of Chester Water Authority.
113. *North Shore Gas Company and The Peoples Gas Light and Coke Company Proposed General Increases in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 11-0280 and 11-0281. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General, the Citizens Utility Board, and the City of Chicago.
114. *Ameren Illinois Company: Proposed general increase in electric delivery service rates and gas delivery service rates*, Illinois Commerce Commission, Docket Nos. 11-0279 and 11-0282. 2011. Concerning rate design and cost of service for natural gas and electric distribution service, on behalf of the Illinois Office of Attorney General and the Citizens Utility Board.
115. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2232243. 2011. Concerning rate design, cost of service, sales forecast,

and automatic rate adjustments on behalf of the Pennsylvania Office of Consumer Advocate.

116. *Aqua Illinois, Inc. Proposed General Increase in Water and Sewer Rates*, Illinois Commerce Commission, Docket No. 11-0436. 2011. Concerning rate design and cost of service on behalf of the Illinois Office of Attorney General.
117. *City of Nashua Acquisition of Pennichuck Corporation*, New Hampshire Public Utilities Commission, Docket No. DW 11-026. 2011. Concerning the proposed acquisition of an investor-owned utility holding company by a municipality, including appropriate ratemaking methodologies, on behalf of the New Hampshire Office of Consumer Advocate.
118. *An Application by Heritage Gas Limited for the Approval of a Schedule of Rates, Tolls and Charges*, Nova Scotia Utility and Review Board, Case NSUARB-NG-HG-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.
119. *An Application of Halifax Regional Water Commission for Approval of a Cost of Service and Rate Design Methodology*, Nova Scotia Utility and Review Board, Case NSUARB-W-HRWC-R-11. 2011. Concerning rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.
120. *National Grid USA and Liberty Energy Utilities Corp.*, New Hampshire Public Utilities Commission, Docket No. DG 11-040. 2011. Concerning the costs and benefits of a proposed merger and related conditions, on behalf of the New Hampshire Office of Consumer Advocate.
121. *Great Northern Utilities, Inc., et al.*, Illinois Commerce Commission, Docket Nos. 11-0059, et al. 2012. Concerning options for mitigating rate impacts and consolidating small water and wastewater utilities for ratemaking purposes, on behalf of the Illinois Office of Attorney General.
122. *Pa. Public Utility Commission v. Aqua Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2011-2267958. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Pennsylvania Office of Consumer Advocate.
123. *Golden State Water Company*, California Public Utilities Commission, Application 11-07-017. 2012. Concerning rate design and quality of service, on behalf of The Utility Reform Network.
124. *Golden Heart Utilities, Inc. and College Utilities Corporation*, Regulatory Commission of Alaska, Case Nos. U-11-77 and U-11-78. 2012. Concerning rate design and cost of service, on behalf of the Alaska Office of the Attorney General.
125. *Illinois-American Water Company*, Illinois Commerce Commission, Docket No. 11-0767. 2012. Concerning rate design, cost of service, and automatic rate adjustment mechanisms, on behalf of the Illinois Office of Attorney General.
126. *Application of Tidewater Utilities, Inc., for a General Rate Increase in Water Base Rates and Tariff Revisions*, Delaware Public Service Commission, Docket No. 11-397. 2012. Concerning rate design and cost of service study, on behalf of the Staff of the Delaware Public Service Commission.
127. *In the Matter of the Philadelphia Water Department's Proposed Increase in Rates for Water and Wastewater Utility Services*, Philadelphia Water Commissioner, FY 2013-2016. 2012. Concerning rate

design and related issues for storm water service, on behalf of Citizens for Pennsylvania's Future.

128. *Corix Utilities (Illinois) LLC, Hydro Star LLC, and Utilities Inc. Joint Application for Approval of a Proposed Reorganization*, Illinois Commerce Commission, Docket No. 12-0279. 2012. Concerning merger-related synergy savings and appropriate ratemaking treatment of the same, on behalf of the Illinois Office of Attorney General.
129. *North Shore Gas Company and The Peoples Gas Light and Coke Company*, Illinois Commerce Commission, Docket Nos. 12-0511 and 12-0512. 2012. Concerning rate design, cost of service study, and automatic rate adjustment tariff on behalf of the Illinois Office of Attorney General.
130. *Pa. Public Utility Commission v. City of Lancaster Sewer Fund*, Pennsylvania Public Utility Commission, Docket No. R-2012-2310366. 2012. Concerning rate design, cost of service, and cost allocation, on behalf of the Pennsylvania Office of Consumer Advocate.
131. *Aquarion Water Company of New Hampshire*, New Hampshire Public Utilities Commission, Docket No. DW 12-085. 2013. Concerning tariff issues, including an automatic adjustment clause for infrastructure improvement, on behalf of the New Hampshire Office of Consumer Advocate.
132. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates*, Public Utilities Commission of Ohio, Case No. 12-1682-EL-AIR, et al. 2013. Concerning rate design and tariff issues, on behalf of the Office of the Ohio Consumers' Counsel.
133. *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Natural Gas Distribution Rates*, Public Utilities Commission of Ohio, Case No. 12-1685-GA-AIR, et al. 2013. Concerning cost-of-service study, rate design, and tariff issues, on behalf of the Office of the Ohio Consumers' Counsel.
134. *In the Matter of the Application of The Dayton Power and Light Company to Establish a Standard Service Offer in the Form of an Electric Security Plan*, Public Utilities Commission of Ohio, Case No. 12-426-EL-SSO, et al. 2013. Concerning rate design, on behalf of the Office of the Ohio Consumers' Counsel.
135. *Application of the Halifax Regional Water Commission, for Approval of Amendments to its Schedule of Rates and Charges and Schedule of Rules and Regulations for the delivery of water, public and private fire protection, wastewater and stormwater services*, Nova Scotia Utility and Review Board, Matter No. M05463. 2013. Concerning rate design, cost-of-service study, and miscellaneous tariff provisions, on behalf of the Consumer Advocate of Nova Scotia.
136. *California Water Service Co. General Rate Case Application*, California Public Utilities Commission, Docket No. A.12-07-007. 2013. Concerning rate design, phase-in plans, low-income programs, and other tariff issues, on behalf of The Utility Reform Network.
137. *Application of The United Illuminating Company to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority, Docket No. 13-01-19. 2013. Concerning sales forecast, rate design, and other tariff issues, on behalf of the Connecticut Office of Consumer Counsel.
138. *Application of Aquarion Water Company of Connecticut to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority, Docket No. 13-02-20. 2013. Concerning sales forecast and rate design on

behalf of the Connecticut Office of Consumer Counsel.

139. *Ameren Illinois Company, Proposed General Increase in Natural Gas Delivery Service Rates*, Illinois Commerce Commission, Docket No. 13-0192. 2013. Concerning rate design and revenue allocation, on behalf of the Illinois Office of Attorney General and Citizens Utility Board.
140. *Commonwealth Edison Company, Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Docket No. 13-0387. 2013. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.
141. *In the Matter of the Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service*, District of Columbia Public Service Commission, Formal Case No. 1103. 2013. Concerning rate design, revenue allocation, and cost-of-service study issues, on behalf of the District of Columbia Office of Peoples' Counsel.
142. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2013-2355276. 2013. Concerning rate design, revenue allocation, and regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
143. *In the Matter of the Revenue Requirement and Transmission Tariff Designated as TA364-8 filed by Chugach Electric Association, Inc.*, Regulatory Commission of Alaska, U-13-007. 2013. Concerning rate design and cost-of-service study issues, on behalf of the Alaska Office of the Attorney General.
144. *Ameren Illinois Company: Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Docket No. 13-0476. 2013. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.
145. *Pa. Public Utility Commission v. City of Bethlehem Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2013-2390244. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
146. *In the Matter of the Tariff Revision Designated as TA332-121 filed by the Municipality of Anchorage d/b/a Municipal Light and Power Department*, Regulatory Commission of Alaska, U-13-184. 2014. Concerning rate design and cost-of-service study issues, on behalf of the Alaska Office of the Attorney General.
147. *Pa. Public Utility Commission v. Pike County Light and Power Co. - Gas*, Pennsylvania Public Utility Commission, Docket No. R-2013-2397353. 2014. Concerning rate design and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
148. *Pa. Public Utility Commission v. Pike County Light and Power Co. - Electric*, Pennsylvania Public Utility Commission, Docket No. R-2013-2397237. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
149. *The Peoples Gas Light and Coke Company North Shore Gas Company Proposed General Increase in Rates for Gas Service*, Illinois Commerce Commission, Docket Nos. 14-0224 and 14-0225. 2014. Concerning rate design on behalf of the Illinois Office of the Attorney General and the Environmental

Law and Policy Center.

150. *Apple Valley Ranchos Water Company*, California Public Utilities Commission, Docket No. A.14-01-002. 2014. Concerning rate design and automatic rate adjustment mechanisms on behalf of the Town of Apple Valley.
151. *Application by Heritage Gas Limited for Approval to Amend its Franchise Area*, Nova Scotia Utility and Review Board, Matter No. M06271. 2014. Concerning criteria, terms, and conditions for expanding a utility's service area and using transported compressed natural gas to serve small retail customers, on behalf of the Nova Scotia Consumer Advocate.
152. *Notice of Intent of Entergy Mississippi, Inc. to Modernize Rates to Support Economic Development, Power Procurement, and Continued Investment*, Mississippi Public Service Commission Docket No. 2014-UN-132. 2014. Concerning rate design and tariff issues, on behalf of the Mississippi Public Utilities Staff.
153. *Pa. Public Utility Commission v. City of Lancaster Bureau of Water*, Pennsylvania Public Utility Commission, Docket No. R-2014-2418872. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
154. *Pa. Public Utility Commission v. Borough of Hanover Municipal Water Works*, Pennsylvania Public Utility Commission, Docket No. R-2014-2428304. 2014. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
155. *Investigation of Commonwealth Edison Company's Cost of Service for Low-Use Customers in Each Residential Class*, Illinois Commerce Commission, Docket No. 14-0384. 2014. Concerning rate design on behalf of the Illinois Office of Attorney General.
156. *Application of the Halifax Regional Water Commission, for Approval of its Schedule of Rates and Charges and Schedule of Rules and Regulations for the Provision of Water, Public and Private Fire Protection, Wastewater and Stormwater Services*, Nova Scotia Utility and Review Board, Matter No. M06540. 2015. Concerning rate design, cost of service study, and tariff issues on behalf of the Nova Scotia Consumer Advocate.
157. *Testimony concerning organization and regulation of Philadelphia Gas Works*, Philadelphia City Council's Special Committee on Energy Opportunities. 2015.
158. *Testimony concerning proposed telecommunications legislation*, Maine Joint Standing Committee on Energy, Utilities, and Technology. 2015.
159. *Pa. Public Utility Commission v. United Water Pennsylvania, Inc.*, Pennsylvania Public Utility Commission, Docket No. R-2015-2462723. 2015. Concerning rate design, cost of service study, and revenue allocation on behalf of the Pennsylvania Office of Consumer Advocate.
160. *Ameren Illinois Company Proposed General Increase in Gas Delivery Service Rates*, Illinois Commerce Commission, Docket No. 15-0142. 2015. Concerning rate design on behalf of the Illinois Office of Attorney General.

161. *Maine Natural Gas Company Request for Multi-Year Rate Plan*, Maine Public Utilities Commission, Docket No. 2015-00005. 2015. Concerning rate design and automatic rate adjustment tariffs on behalf of the Maine Office of the Public Advocate.
162. *Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Provide for a Standard Service Offer*, Public Utilities Commission of Ohio, Case No. 14-1297-EL-SSO. 2015. Concerning rate design and proposed rate discounts on behalf of the Office of the Ohio Consumers' Counsel.
163. *An Application of the Halifax Regional Water Commission, for approval of revisions to its Cost of Service Manual and Rate Design for Stormwater Service*, Nova Scotia Utility and Review Board, Matter No. M07147. 2016. Concerning stormwater rate design and cost of service, on behalf of the Nova Scotia Consumer Advocate.
164. *In the Matter of An Application by Heritage Gas Limited for Enhancement to Its Existing Residential Retro-Fit Assistance Fund*, Nova Scotia Utility and Review Board, Matter No. M07146. 2016. Concerning costs and benefits associated with utility system expansion, on behalf of the Nova Scotia Consumer Advocate.
165. *In the Matter of the Application of UNS Electric, Inc. for the Establishment of Just and Reasonable Rates and Charges*, Arizona Corporation Commission, Docket No. E-04204A-15-0142. 2016. Concerning rate design and residential demand charges on behalf of Arizona Utility Ratepayer Alliance.
166. *In the Matter of Application of Water Service Corporation of Kentucky for a General Adjustment in Existing Rates*, Kentucky Public Service Commission, Case No. 2015-00382. 2016. Concerning rate design and service area consolidation on behalf of the Kentucky Office of the Attorney General.
167. *Massachusetts Electric Company and Nantucket Electric Company*, Massachusetts Department of Public Utilities, Docket No. DPU 15-155. 2016. Concerning rate design and cost-of-service studies on behalf of the Massachusetts Office of Attorney General.
168. *In the Matter of Abenaki Water Company*, New Hampshire Public Utilities Commission, Docket No. DW 15-199. 2016. Concerning rate design on behalf of the New Hampshire Office of the Consumer Advocate.
169. *In the Matter of an Application by Heritage Gas Limited for Approval of its Customer Retention Program*, Nova Scotia Utility and Review Board Matter No. M07346. 2016. Concerning a regulatory response to competition and potential business failure on behalf of the Nova Scotia Consumer Advocate.
170. *Joint Application of Pennsylvania-American Water Company and the Sewer Authority of the City of Scranton*, Pennsylvania Public Utility Commission Docket No. A-2016-2537209. 2016. Concerning the lawfulness, costs and benefits, and ratemaking treatment of a proposed acquisition of a combined wastewater and storm water utility on behalf of the Pennsylvania Office of Consumer Advocate.
171. *Application of The United Illuminating Company to Amend its Rate Schedules*, Connecticut Public Utility Regulatory Authority Docket No. 16-06-04. 2016. Concerning rate design, cost-of-service study, and other tariff issues on behalf of the Connecticut Office of Consumer Counsel.

172. *Ameren Illinois Company Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Illinois Commerce Commission Docket No. 16-0387. 2016. Concerning rate design and cost-of-service study on behalf of the Illinois Office of the Attorney General.
173. *Unitil Energy Systems, Inc.*, New Hampshire Public Utilities Commission Docket No. 16-384. 2016. Concerning rate design and cost-of-service study on behalf of the New Hampshire Office of Consumer Advocate.
174. *Liberty Utilities (Granite State Electric) Corp.*, New Hampshire Public Utilities Commission Docket No. 16-383. 2016. Concerning rate design and cost-of-service study on behalf of the New Hampshire Office of Consumer Advocate.
175. *Arizona Public Service Co.*, Arizona Corporation Commission Docket No. E-01345A-16-0123. 2017. Concerning rate design and cost-of-service study on behalf of the Arizona Utility Ratepayer Alliance.
176. *Commonwealth Edison Company, Tariff filing to present the Illinois Commerce Commission with an opportunity to consider revenue neutral tariff changes related to rate design*, Illinois Commerce Commission Docket No. 17-0049. 2017. Concerning rate design and cost of service study issues, on behalf of the Illinois Office of Attorney General.
177. *NSTAR Electric Company and Western Massachusetts Electric Company*, Massachusetts Department of Public Utilities Docket No. D.P.U. 17-05. 2017. Concerning rate design and cost of service study issues, on behalf of the Massachusetts Office of Attorney General.
178. *In the Matter of the Tariff Revision Designated as TA857-2 Filed by Alaska Power Company*, Regulatory Commission of Alaska No. U-16-078. 2017. Concerning rate design and cost of service study issues on behalf of the Alaska Office of the Attorney General.
179. *In the Matter of the Application of Minnesota Power for Authority to Increase Rates for Electric Utility Service in Minnesota*, Minnesota Public Utilities Commission Docket No. E015/GR-16-664. 2017. Concerning rate design and cost of service study issues on behalf of AARP.
180. *Pennsylvania Public Utility Commission v. Pennsylvania-American Water Company*, Pennsylvania Public Utility Commission, Docket No. R-2017-2595853. 2017. Concerning rate design, cost of service, and policy issues, on behalf of the Pennsylvania Office of Consumer Advocate.
181. *Aqua Illinois, Inc. Proposed Rate Increases for Water and Sewer Services*, Illinois Commerce Commission, Docket No. 17-0259. 2017. Concerning rate design and single-tariff pricing, on behalf of the Illinois Office of Attorney General.
182. *Petition of Pennsylvania-American Water Company for Approval of Tariff Changes and Accounting and Rate Treatment Related to Replacement of Lead Customer-Owned Service Pipes*, Pennsylvania Public Utility Commission, Docket No. P-2017-2606100. 2017. Concerning public policy and ratemaking issues associated with the replacement of customer-owned lead service lines, on behalf of the Pennsylvania Office of Consumer Advocate.
183. *In the Matter of Application and Notice of Change in Natural Gas Rates of Montana-Dakota Utilities Co.*, North Dakota Public Service Commission, Case No. PU-17-295. 2017. Concerning rate design and cost

of service study issues, on behalf of AARP.

184. *Aqua Illinois, Inc. Petition for the Issuance of a Certificate of Public Convenience and Necessity to Operate a Water and Wastewater System in the Village of Peotone*, Illinois Commerce Commission, Docket No. 17-0314. 2018. Concerning rate consolidation and rate design, on behalf of the Illinois Office of Attorney General.
185. *Application of the Connecticut Light and Power Company d/b/a Eversource Energy to Amend its Rate Schedules*, Connecticut Public Utilities Regulatory Authority, Docket No. 17-10-46. 2018. Concerning rate design issues, on behalf of the Connecticut Office of Consumer Counsel.
186. *Application by Heritage Gas for Approval of a Long-Term Natural Gas Transportation Contract and Cost Recovery Mechanism*, Nova Scotia Utility and Review Board, Matter M08473. 2018. Concerning evaluation of costs, benefits, and risks of a long-term natural gas pipeline contract, on behalf of the Consumer Advocate of Nova Scotia.
187. *Boston Gas Company and Colonial Gas Company*, Massachusetts Department of Public Utilities, D.P.U. 17-170. 2018. Concerning class revenue allocation and rate design, on behalf of the Massachusetts Office of Attorney General.
188. *In the Matter of the Application of Maryland-American Water Company for Authority to Adjust its Existing Schedule of Tariffs and Rates*, Maryland Public Service Commission, Case No. 9487. 2018. Concerning cost-of-service study, on behalf of the Staff of the Maryland Public Service Commission.
189. *Joint Application and Petition of South Carolina Electric & Gas Company and Dominion Energy, Inc. for review and approval of a proposed business combination between SCANA Corporation and Dominion Energy, Inc., as may be required, and for a prudence determination regarding the abandonment of the V.C. Summer Units 2 & 3 Project and associated merger benefits and cost recovery plans*, South Carolina Public Service Commission, Docket No. 2017-370-E. 2018. Concerning regulatory policy, prudence of decision-making, and cost sharing, on behalf of AARP.
190. *Application of Transource Pennsylvania, LLC for approval of the Siting and Construction of the 230 kV Transmission Line Associated with the Independence Energy Connection - East and West Projects in portions of York and Franklin Counties, Pennsylvania*, Pennsylvania Public Utility Commission, Docket Nos. A-2017-2640195, et al. 2018. Concerning regulatory policy and benefit-cost analysis for a proposed high-voltage electric transmission line, on behalf of the Pennsylvania Office of Consumer Advocate.
191. *Pa. Public Utility Commission v. Pittsburgh Water and Sewer Authority*, Pennsylvania Public Utility Commission, Docket Nos. R-2018-3002645, et al. 2018. Concerning cost-of-service study and rate design for a water and wastewater utility, on behalf of the Pennsylvania Office of Consumer Advocate.
192. *West Virginia-American Water Company Rule 42T Tariff Filing to Increase Rates and Charges*, West Virginia Public Service Commission, Case No. 18-0573-W-42T, et al. 2018. Concerning revenue decoupling, on behalf of the Consumer Advocate Division.
193. *Philadelphia Gas Works and Philadelphia Facilities Management Corporation Petition for Approval and Recommendation for Approval of Certain Transactions and Contracts for the Purchase, Storage, Distribution and/or Transmission of Natural and Other Gas, and also Certain Transactions and Contracts Respecting Real Property Owned by the City of Philadelphia and Operated by the Philadelphia*

- Gas Works*, Philadelphia Gas Commission. 2018. Concerning regulatory policy and cost-benefit analysis for a proposed public-private partnership, on behalf of the Philadelphia Public Advocate.
194. *Pa. Public Utility Commission v. Aqua Pennsylvania, Inc., and Aqua Pennsylvania Wastewater, Inc.*, Pennsylvania Public Utility Commission, Docket Nos. R-2018-3003558, et al. 2018. Concerning rate design, class revenue allocation, and automatic rate adjustment mechanism, on behalf of the Pennsylvania Office of Consumer Advocate.
195. *In the Matter of Commission Initiated Investigation into Rates and Revenue Requirements and Customer Service and Communication Issues Pertaining to Central Maine Power Company*, Maine Public Utilities Commission, Docket No. 2018-00194. 2019. Concerning cost-of-service studies and rate design, on behalf of the Maine Office of Public Advocate.
196. *Northern Illinois Gas Company d/b/a Nicor Gas Company: Proposed general increase in gas rates*, Illinois Commerce Commission, Docket No. 18-1775. 2019. Concerning rate design, cost-of-service study, class revenue allocation, and automatic rate adjustment mechanisms, on behalf of the Illinois Office of the Attorney General.
197. *Massachusetts Electric Co. and Nantucket Electric Co., d/b/a/ National Grid*, Massachusetts Department of Public Utilities, D.P.U. 18-150. 2019. Concerning rate design, cost-of-service study, class revenue allocation, and time-of-use rates, on behalf of the Massachusetts Office of Attorney General.
198. *Implementation of Chapter 32 of the Public Utility Code Regarding Pittsburgh Water and Sewer Authority – Stage 1*, Pennsylvania Public Utility Commission, Docket Nos. M-2018-2640802 and M-2018-2640803. 2019. Concerning billing, metering, rate design, and other compliance issues for a municipal water authority, on behalf of the Pennsylvania Office of Consumer Advocate.
199. *Commonwealth Edison Company Petition for approval of a Revision to Integrated Distribution Company Implementation Plan. Creation of Rate Residential Time of Use Pricing Pilot (“Rate RTOUPP”)*. Illinois Commerce Commission, Docket Nos. 18-1725/18-1824 (Cons.). Concerning time-of-use rates, on behalf of the Illinois Office of Attorney General.
200. *Washington Utilities and Transportation Commission v. Northwest Natural Gas Co.*, Washington Utilities and Transportation Commission, Docket UG-181053. 2019. Concerning a proposed revenue decoupling automatic rate adjustment mechanism, on behalf of the Washington Office of Attorney General, Public Counsel Unit.
201. *In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges and to Revise its Terms and Conditions for Gas Service*, Maryland Public Service Commission, Case No. 9605. 2019. Concerning cost-of-service study on behalf of the Staff of the Maryland Public Service Commission.
202. *Public Service Company of New Hampshire, d/b/a Eversource Energy*, New Hampshire Public Utilities Commission, Docket No. DE 19-057. 2019. Concerning class revenue allocation, rate design, revenue decoupling, other automatic rate adjustment mechanisms, and miscellaneous tariff issues on behalf of AARP.
203. *In the Matter of the Application of Southwest Gas Corporation for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the*

- Properties of Southwest Gas Corporation Devoted to its Arizona Operations*, Arizona Corporation Commission, Docket No. G-01551A-19-0055. 2020. Concerning certain relationships with affiliates, premature pipe replacement, revenue decoupling, automatic rate adjustment mechanisms, and rate design on behalf of Arizona Grain, Inc.
204. *Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of an Increase in Base Distribution Rates*, Massachusetts Department of Public Utilities, Docket No. D.P.U. 19-120. 2020. Concerning cost-of-service study, class revenue allocation, surcharges, and miscellaneous tariff provisions, on behalf of the Massachusetts Office of Attorney General.
205. *In the Matter of an Application of the Halifax Regional Water Commission for Approval of a Schedule of Rates and Charges*, Nova Scotia Utility and Review Board, Matter M09589. 2020. Concerning regulatory policy, cost-of-service study, and rate design, on behalf of the Nova Scotia Consumer Advocate.
206. *Pa. Public Utility Commission v. UGI Utilities Inc. - Gas Division*, Pennsylvania Public Utility Commission, Docket No. R-2019-3015162. 2020. Concerning regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
207. *Pa. Public Utility Commission v. Philadelphia Gas Works*, Pennsylvania Public Utility Commission, Docket No. R-2020-3017206. 2020. Concerning regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
208. *Pa. Public Utility Commission v. Pittsburgh Water and Sewer Authority*, Pennsylvania Public Utility Commission, Docket Nos. R-2020-3017951, *et al.* 2020. Concerning regulatory policy, cost-of-service study, and rate design, on behalf of the Pennsylvania Office of Consumer Advocate.
209. *Pa. Public Utility Commission v. Columbia Gas of Pa.*, Pennsylvania Public Utility Commission, Docket No. R-2020-3018835. 2020. Concerning regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
210. *Pa. Public Utility Commission v. Pennsylvania-American Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2020-3019369. 2020. Concerning regulatory policy, cost-of-service studies, rate design, and tariff issues, on behalf of the Pennsylvania Office of Consumer Advocate.
211. *In the Matter of the Application of Arizona Public Service Company*, Arizona Corporation Commission, Docket No. E-01345A-19-0236. 2020. Concerning residential rate design, on behalf of AARP.
212. *Pa. Public Utility Commission v. City of Bethlehem - Water Department*, Pennsylvania Public Utility Commission, Docket No. R-2020-3020256. 2020. Concerning regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
213. *Tyson Fellman, et al. v. Public Utility District No. 1 of Franklin County*, Superior Court of Franklin County (Washington), Case No. 18-2-50589-11. 2020. Expert declaration concerning cost-of-service studies and rate design, on behalf of the plaintiffs.
214. *Application of Dominion Energy South Carolina, Inc. for Adjustment of Rates and Charges*, South Carolina Public Service Commission, Docket No. 2020-125-E. 2020. Concerning residential rate design, on behalf of AARP.

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215. *Pa. Public Utility Commission v. Audubon Water Co.*, Pennsylvania Public Utility Commission, Docket No. R-2020-3020919. 2020. Concerning regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
216. *Pa. Public Utility Commission v. PECO Energy Co. - Gas Division*, Pennsylvania Public Utility Commission, Docket No. R-2020-3018929. 2020. Concerning regulatory policy, on behalf of the Pennsylvania Office of Consumer Advocate.
217. *Montana-Dakota Utilities Co.*, North Dakota Public Service Commission, Case No. PU-20-379. 2021. Concerning regulatory policy, cost-of-service study, class revenue allocation, and rate design, on behalf of AARP.
218. *Hope Gas, Inc. d/b/a Dominion Energy West Virginia*, West Virginia Public Service Commission, Case No. 20-0746-G-42T. 2021. Concerning cost-of-service study, class revenue allocation, and rate design, on behalf of the West Virginia Consumer Advocate Division.

Schedule SJR-1

OCA Proposed Residential Customer Charge for Customers with Meters 1 Inches or Smaller Under PWSA's Proposed Revenue Requirement

Table 1: PWSA Proposed Rates and Revenues, Residential Customers with Meters 1" or Smaller

(a) Meter	(b) Bills	(c) Cust. Chg.	(d) Cust. Chg. Revenue	(e) Billed Usage	(f) Rate	(g) Usage Revenue	(h) Total Revenue
5/8"	695,677	\$ 27.81	\$ 19,346,778	1,655,805	\$ 15.52	\$ 25,698,094	\$ 45,044,872
3/4"	30,635	\$ 48.76	1,493,759	118,317	\$ 15.52	1,836,280	3,330,039
1"	28,586	\$ 107.16	3,063,287	131,352	\$ 15.52	2,038,583	5,101,871
Total	754,898		\$ 23,903,825	1,905,474		\$ 29,572,958	\$ 53,476,782

- (b) COSA, Bills tab, cells AA10:AA12
- (c) COSA, W>RateDesign tab, cells O10:O12
- (d) (b) x (c)
- (e) COSA, Usage tab, cells AB10:AB12
- (f) COSA, W>RateDesign tab, cell K147
- (g) (e) x (f)
- (h) (d) + (g)

Table 2: OCA Recommended Rates and Revenues, Residential Customers with Meters 1" or Smaller

(a) Meter	(b) Bills	(c) Cust. Chg.	(d) Cust. Chg. Revenue	(e) Billed Usage	(f) Rate	(g) Usage Revenue	(h) Total Revenue
5/8"	695,677	\$ 29.35	\$ 20,418,121	1,655,805	\$ 15.52	\$ 25,698,094	\$ 46,116,215
3/4"	30,635	\$ 29.35	899,135	145,632	\$ 15.52	2,260,204	3,159,339
1"	28,586	\$ 29.35	839,002	216,581	\$ 15.52	3,361,331	4,200,333
Total	754,898		\$ 22,156,258	2,018,017		\$ 31,319,629	\$ 53,475,887

- (b), (f) Table 1
- (c) Calculated to result in same total revenue
- (d) (b) x (c)
- (e) Table 1 plus additional usage for 3/4" and 1" due to lower minimum allowance:

	Billed use	Total use	Min. use	Min. allow.	Estimated First 1000	Add use
3/4"	118,317	172,946	54,629	2	27,315	27,315
1"	131,352	237,888	106,536	5	21,307	85,229

(usage from COSS Model, Usage tab, column R)

- (g) (e) x (f)
- (h) (d) + (g)

Schedule SJR-2

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set IV in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

Request: OCA-IV-4 Reference: PWSA St. 4 (Smith), p. 24, lines 20-22. Are all of PWSA’s public fire hydrants located in the City of Pittsburgh? If not, please provide a workpaper showing the number of fire hydrants in each municipality, the current rate PWSA charges for fire hydrants in each such municipality, and the proposed fire hydrant rates in each such municipality.

Response:

Out of the 7,505 PWSA hydrants in the current GIS mapping (not including those identified as Private), there are 134 located outside the city (see below). The monthly per hydrant charge in 2021 is \$14.13 and the proposed monthly per hydrant charge in 2022 is \$19.37.

- 106 Millvale
 - 2021 Charge: \$17,973.36 (14.13*106*12)
 - 2022 Proposed Charge: \$24,638.64 (19.37*106*12)
- 3 Etna
 - 2021 Charge: \$508.68 (14.13*3*12)
 - 2022 Proposed Charge: \$697.32 (19.37*3*12)
- 4 Sharpsburg
 - 2021 Charge: \$678.24 (14.13*4*12)
 - 2022 Proposed Charge: \$929.76 (19.37*4*12)
- 7 Aspinwall
 - 2021 Charge: \$1,186.92 (14.13*7*12)
 - 2022 Proposed Charge: \$1,627.08 (19.37*7*12)
- 1 Fox Chapel
 - 2021 Charge: \$169.56 (14.13*1*12)
 - 2022 Proposed Charge: \$232.44 (19.37*1*12)
- 5 O’Hara
 - 2021 Charge: \$847.80 (14.13*5*12)
 - 2022 Proposed Charge: \$1,162.20 (19.37*5*12)
- 1 Blawnox
 - 2021 Charge: \$169.56 (14.13*1*12)
 - 2022 Proposed Charge: \$232.44 (19.37*1*12)
- 3 Ross
 - 2021 Charge: \$508.68 (14.13*3*12)
 - 2022 Proposed Charge: \$697.32 (19.37*3*12)

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set IV in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

- 1 Reserve
 - 2021 Charge: \$169.56 (14.13*1*12)
 - 2022 Proposed Charge: \$232.44 (19.37*1*12)

- 1 Penn Hills
 - 2021 Charge: \$169.56 (14.13*1*12)
 - 2022 Proposed Charge: \$232.44 (19.37*1*12)

- 2 Wilkinsburg
 - 2021 Charge: \$339.12 (14.13*2*12)
 - 2022 Proposed Charge: \$464.88 (19.37*2*12)

Response Provided by: Julie A. Quigley, Director of Customer Service
The Pittsburgh Water and Sewer Authority

Dated: May 18, 2021

Schedule SJR-3

**BEFORE THE
PHILADELPHIA WATER, SEWER AND STORM WATER RATE BOARD**

Re Application of the Philadelphia Water Department for Increased Water, Wastewater and Stormwater Rates and Related Charges	Fiscal Years 2019-2021
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**BRIEF SUBMITTED ON BEHALF OF
PHILADELPHIA WATER DEPARTMENT**

Hearing Officer Nancy Brockway, Presiding

**ANDRE C. DASENT, ESQUIRE
CARL R. SHULTZ, ESQUIRE**
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3. Contested Revenue and Revenue Requirement Issues.

(a) Collection Factors.

Projected revenues reflect anticipated cumulative receipts for water, sewer and stormwater services for each fully projected future test year. The receipts for each year are estimated based upon projected system billings and the associated projected collection factors. These collection factors reflect the payment patterns of the Department's customers. Simply put, the collection factors are calculated as the percentage of the total amount billed that is collected (i.e., amount collected divided by amount billed). This is directly related to the Department's accounts receivable and reflect the amount that the Department anticipates receiving in a fiscal year. The remaining balance reflects an uncollectible amount, which increases rates for all paying customers.

The Department used a cumulative collection factor of 96.54% for water and wastewater (non-stormwater only) billings.¹⁹⁶ This means that the Department expects to collect 96.54% of its gross non-stormwater only billings, and will not collect 3.46% of its gross non-stormwater only billings. The 3.46% is an uncollectible expense, which is recovered from all customers.

The Department's approach is reasonable and prudent. The Department used a cumulative system collection rate in this rate proceeding (using all of the available data). This approach recognizes that payments for bills in any fiscal year may be collected in the fiscal year they are rendered (the billing year) or in a subsequent fiscal year. The cumulative collection factors utilized in the rate filing represent the multi-year payment pattern for the following periods:

- **Billing Year** – All payments associated with a given fiscal year's billing and received within the 12 months following the beginning of the fiscal year.
- **Billing Year Plus 1** – All payments associated with a given fiscal year's billing and received within 13-24 months following the beginning of the fiscal year.
- **Billing Year Plus 2 and Beyond** – All payments associated with a given fiscal year's billing and received after 24 months following the beginning of the fiscal year.¹⁹⁷

¹⁹⁶ PWD Statement 9A, Schedule BV-E5: WP-1, at 2, 15.

¹⁹⁷ PWD Statement 9A, Schedule BV-E5: WP-1 at 2.

PWD prudently uses a five-year average for the Billing Year. A four year average for the Billing Year Plus 1. Finally, a three-year average is used for the Billing Year Plus 2 and Beyond. This approach effectively uses all of the data that is available on actual payment patterns and also reflects potential payment volatility that could occur due to economic conditions and other factors.¹⁹⁸

The Public Advocate disagrees with the projected collection factor for non-stormwater only billings proposed by the Department and by its own witness (Mr. Morgan). Instead, the Advocate proposes a collection factor of 97.12%,¹⁹⁹ which is 0.58% higher than the Department’s proposal.²⁰⁰ The Public Advocate agrees with the use of a cumulative system collection rate in this rate proceeding, but curiously disagrees with the use of all of the available data. The Advocate’s proposal is only based on a “rolling” average that takes into account the three most recent results in each category, as depicted in the shaded portions of the table below:

Non-Stormwater Only Collection Factors Under PWD and Public Advocate Analyses²⁰¹

Fiscal Year	Non-Stormwater Only Billings		
	Billing Year	Billing Year Plus 1	Billing Year Plus 2 and Beyond
2016	86.84%	N/A	N/A
2015	87.03%	8.24%	N/A
2014	86.17%	8.61%	1.00%
2013	84.80%	9.80%	1.69%
2012	84.67%	9.67%	1.99%
Department’s Method (All Data)			
Average (All Data)	85.90%	9.08%	1.56%
Cumulative Total			96.54%
Public Advocate Witness’ Method (Most Recent 3 years)			
Average	86.68%	8.43%	1.00
Cumulative Total			96.11%
Public Advocate’s Method (Bold Data in Shaded Cells)			
Average	86.68%	8.88%	1.56%
Cumulative Total			97.12%

¹⁹⁸ See, PWD Rebuttal Statement 1 at 8-9; Response to PA-VI-28.

¹⁹⁹ Curiously, the Advocate did not object to the collection factor for stormwater only billings. See discussion, *infra*.

²⁰⁰ PA Hearing Exhibit 7 at 56.

²⁰¹ See, PWD Hearing Exhibit 1 (Illustration of Collection Factor Analysis).

The Advocate's witness, Lafayette Morgan, also errs in using only an average based on three years of data, as depicted above.²⁰² As explained in the Department's rebuttal testimony, this approach has two fundamental flaws: (i) the use of three years of data does not provide sufficient support to reliably determine payment patterns; and (2) the use of the most recent three years of data actually only provides one set of payment pattern for FY 2014 billings.²⁰³ It is appropriate to use a larger data set, as illustrated by viewing the totality of the data shown above, because historical experience indicates that PWD continues to receive payments on bills for more than three years. As a consequence, the Advocate's analyses in both instances are incomplete and misleading (by focusing on only three years of data).

In addition, the Advocate's analyses both ignore stormwater only customers altogether. These customers would also be impacted, if the Advocate's methodology were utilized. PWD uses a cumulative collection factor of 72.08% for stormwater only billings. The data for stormwater only customers is available in the rate filing²⁰⁴ to complete this analysis, but for whatever reason, the Advocate and its witness chose not to utilize same. Obviously, stormwater only data will affect the overall collection levels for the Department. This is confirmed by the table below showing collection factors for stormwater only customers.

²⁰² PA witness, Lafayette Morgan characterizes accumulated data over three years old as "stale." He is mistaken, however, because historically billings are collected over three years or more (i.e., the Billing Year, Billing Year Plus 1, and Billing Year Plus 2 and beyond). The billing periods also reflect "one set" of payment patterns. PWD Rebuttal Statement 1 at 8.

²⁰³ PWD Rebuttal Statement 1 at 9.

²⁰⁴ PA Statement 9A, Schedule BV-E5 (WP-1) at 15.

Comparison of Collection Factors Analysis Extended to Include Stormwater Only Billings²⁰⁵

Fiscal Year	Stormwater Only Billings		
	Billing Year	Billing Year Plus 1	Billing Year Plus 2 and Beyond
2016	63.08%	N/A	N/A
2015	59.51%	8.08%	N/A
2014	59.11%	5.98%	2.98%
2013	60.86%	7.49%	3.95%
2012	59.32%	9.21%	5.09%
Department's Method (Add Data)			
Average	60.38%	7.69%	4.01%
Cumulative Total			72.08%
Public Advocate Witness' Method (Most Recent 3 years)			
Average	60.57%	7.03%	2.98%
Cumulative Total			70.58%
Public Advocate's Method (Bold Data in Shaded Cells)			
Average	60.57%	7.18%	4.01%
Cumulative Total			71.76%

As depicted above, use of either of the Public Advocate's methods lowers the collection factor for stormwater only customers. Perforce this will lower the overall collection factor during the Rate Period. The point of the foregoing is that an incomplete analysis, as presented by the Advocate (using a subset of available data) to project revenues for 2019-2021 FPFTYs, is misleading, irresponsible and lacks sufficient record support.

(b) SMIP/GARP.

The Department proposes to fund SMIP/GARP at \$25 million in each year of the Rate Period. This represents an increase of \$10 million per year when compared to the levels presented in the last rate case (\$15 million per year) for FY 2017-2018. The Department's proposal for SMIP/GARP project grants is reasonable and necessary. That is, SMIP and GARP grants are important components of the *Green City Clean Waters* program and are necessary for the Department to comply with the requirements in the Consent Order and Agreement. The grants also allow businesses, institutions and other non-residential customers to directly implement stormwater management projects and provide a pathway for the Department to take compliance credit for "greened acres" on project sites that would otherwise be inaccessible; and at a cheaper

²⁰⁵ PWD Statement 9A, Schedule BV-E5 (WP-1) at 15.

Schedule SJR-4

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set V in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

Request: OCA-V-13 Reference: PWSA St. 8 (Reading), p. 5, lines 6-9. Please provide the documents and/or data from Northeast Ohio Regional Sewer District and Philadelphia Water Department on which the witness relied to determine the stormwater-only collection rate.

Response:

NEORSD information was pulled from the data warehouse at the NEORSD and provided in a spreadsheet which is shown here:

A	B	C	D
Year	SWO Net Billed	SWO Net Collected	SWO Collection %
2017	\$ 11,370.22	\$ 6,590.62	58%
2018	\$ 2,415,766.87	\$ 1,913,531.09	79%
2019	\$ 4,296,145.75	\$ 3,964,746.30	92%
2020	\$ 4,346,772.96	\$ 3,882,961.84	89%

Philadelphia Water Department data can be found in their rate proceeding documents, at <https://www.phila.gov/media/20210115161930/PWD-Statement-No.-6-Direct-Testimony-and-Schedules-of-Raftelis.pdf> (refer to pages 1 and 2 of RFC Schedule 6, which are pages 214 and 215 of the PDF document).

Because this is the first time billing stormwater only customers, PWSA does not have its own collection data available. In future years, collection rates will be adjusted to reflect PWSA’s own collection data.

Response Provided by: Keith Readling, Executive Vice President, Raftelis Financial Consultants
Consultant to The Pittsburgh Water and Sewer Authority

Dated: May 27, 2021

Schedule SJR-5

Stormwater Fee Data for Other Pennsylvania Municipalities, as of 2020

Seq. No.	Community	State	Fee		Monthly Fee	Year	Population
			Type	ERU (ft2)		Created	
1227	Allentown	PA	E	500	\$ 10.00	2018	120,207
1228	Borough of Carlisle	PA	E	2,410	\$ 7.00	2017	19,259
1229	Borough of Dormont	PA	E		\$ 9.00	2015	8,593
1230	Borough of Greenville	PA	E	3,123		2016	5,860
1231	Chambersburg	PA	V		\$ 4.00	2015	20,508
1232	Chester	PA	E	1,139	\$ 8.25	2017	33,972
1233	Clarion Borough	PA	T		\$ 9.00	2019	5,305
1234	Cranberry Township	PA	F		\$ 3.00	2019	31,560
1235	Derry Township	PA	E	3,800	\$ 6.50	2016	25,074
1236	Easton	PA	E	1,797	\$ 6.75	2018	27,109
1237	Ebensburg	PA	E		\$ 8.00	2014	3,269
1238	Greencastle Borough	PA			\$ 14.33	2019	4,026
1239	Hampden Township	PA	E	3,534	\$ 4.42	2015	28,044
1240	Hanover Borough	PA	E	2,250	\$ 5.54	2019	15,607
1241	Harrisburg	PA	T		\$ 6.15	2019	49,192
1242	Highspire Borough	PA	D		\$ 7.00	2016	2,399
1243	Jonestown	PA	E	3,100	\$ 6.67	2012	1,931
1244	Lancaster	PA	E	1,000	\$ 7.74	2014	59,325
1245	Lower Allen Township	PA	E		\$ 6.33	2019	19,338
1246	Lower Paxton Township	PA	E	3,400	\$ 10.67	2019	49,050
1247	Lower Swatara Township	PA	E	3,750	\$ 7.00	2019	8,268
1248	Meadville	PA	E	2,660	\$ 7.50	2012	13,616
1249	Monroeville	PA	E	2,385	\$ 10.00	2018	28,445
1250	Mount Lebanon	PA	E	2,400	\$ 8.00	2011	33,137
1251	New Castle	PA	E	2,500	\$ 6.00		22,142
1252	North Fayette Township	PA	E		\$ 3.50	2018	13,934
1253	North Lebanon Township	PA	E	3,755	\$ 3.35	2018	11,429
1254	Philadelphia	PA	F		\$ 13.48		1,536,471
1255	Radnor Township	PA	T		\$ 4.83		31,531
1256	Silver Spring Township	PA	E	4,000	\$ 9.00	2019	13,657
1257	Susquehanna Township	PA	T		\$ 11.60	2020	25,107
1258	Upper Allen Township	PA	E	3,800	\$ 5.00	2018	19,857
1259	Waynesborough	PA	E	1,600	\$ 3.42	2015	10,877
1260	West Chester	PA	T		\$ 11.73	2016	18,461
1261	White Township	PA	E	3,700	\$ 2.00	2015	15,821
1262	Wyoming Valley	PA	E	1,000	\$ 5.10	2018	68,900

Source: Western Kentucky University Stormwater Utility Survey 2020
https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=1002&context=seas_faculty_pubs

Schedule SJR-6

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set V in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

Request: OCA-V-8 Reference: PWSA Exh. TI-4 (proposed stormwater tariff). Please confirm that a property (either residential or non-residential) with less than 400 square feet of impervious area will not be charged a fee for stormwater service. If this is confirmed, please explain how the 400 square foot threshold was developed. If this is not confirmed, please correct the statement.

Response:

Confirmed. This threshold was developed upon review of the delineated impervious area data. In many cases, parcel misalignment with the aerial imagery caused small slivers of impervious area on one property to appear to be on another. These slivers tended to be less than 400 square feet. To avoid billing vacant properties for small slivers of neighboring impervious area, the 400 square foot minimum threshold was incorporated into the rate structure.

Response Provided by: Keith Readling, Executive Vice President, Raftelis Financial Consultants
Consultant to The Pittsburgh Water and Sewer Authority

Dated: May 27, 2021

Schedule SJR-7

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set V in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

Request: OCA-V-3 Reference: PWSA Exh. JAQ-4 (redline water tariff), First Revised page 12. Concerning the proposed increase in the Returned Check Charge from \$30.45 to \$40.00:

- a. Please provide a detailed explanation of the process PWSA follows when it receives notice of a dishonored payment, including what type of personnel perform each step of the process and how the process is automated.
- b. What is the current fee charged to PWSA by its banks for a dishonored check?
- c. What is the current fee charged to PWSA by its banks for a dishonored electronic (ACH) payment?
- d. Does PWSA receive an electronic file with dishonored payment information? If so, does PWSA currently have the capability to read that electronic file into its billing system? If not, is that a capability PWSA expects to have in its new billing system?

Response:

- a. PWSA’s Finance department completes the reconciliation of the monthly bank statement, which includes returned payments. A PWSA Account Clerk in the Collections section of the Customer Service department then receives and processes an electronic file from PWSA’s Finance department that is comprised of accounts with associated payments that have been returned, largely due to insufficient funds. The Account Clerk manually voids the payments by looking up each customer’s account and processing each void adjustment. The Account Clerk then manually generates letters and mails them to the affected customers, advising them of the returned payment and associated fee.
- b. PWSA’s lockbox provider assesses a fee of \$3.50 to process returned checks.
- c. PWSA’s electronic bill payment and presentment provider assesses a fee of \$.25 to process returned electronic ACH payments.
- d. Yes; as described in OCA-V-3.a, PWSA receives an electronic file of returned payments. PWSA does not currently have the capability to read that electronic file into its Customer Information System. This is a capability that PWSA expects to have in its new Enterprise Resource Planning system.
- e.

Response Provided by: Julie A. Quigley, Director of Customer Service
The Pittsburgh Water and Sewer Authority

Dated: May 27, 2021

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

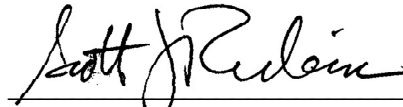
Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Scott J. Rubin, hereby state that the facts set forth in my Direct Testimony, OCA Statement 3, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 8, 2021
*312551

Signature:



Scott J. Rubin

Consultant Address: 4627 Chandlers Forde
Sarasota, FL 34235-7118

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3024773 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	
	:	

Direct Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement No. 4

July 8, 2021

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1 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

3

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

5 A. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General
6 Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to
7 a variety of federal and state agencies, consumer organizations and public utilities on rate
8 and customer service issues involving water/sewer, natural gas and electric utilities.

9

10 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

11 A. I am testifying on behalf of the Office of Consumer Advocate.

12

13 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.**

14 A. I work primarily on low-income utility issues. This involves regulatory work on rate and
15 customer service issues, as well as research into low-income usage, payment patterns,
16 and affordability programs. At present, I am working on various projects in the states of
17 Rhode Island, New York, Maryland, Pennsylvania, Tennessee, Kentucky, Ohio,
18 Michigan, and Missouri. My clients include state agencies (e.g., Pennsylvania Office of
19 Consumer Advocate, Maryland Office of People's Counsel, Illinois Office of Attorney
20 General), federal agencies (e.g., the U.S. Department of Health and Human Services),
21 community-based organizations (e.g., National Housing Trust, Natural Resources
22 Defense Council, Sierra Club), and private utilities (e.g., Toledo Water, Entergy Services,
23 Xcel Energy d/b/a Public Service of Colorado). In addition to state-specific and utility-

1 specific work, I engage in national work throughout the United States. For example, in
2 2020, I represented a coalition of major national consumer organizations to comment on
3 the Environmental Protection Agency's proposed framework by which to judge
4 community financial capability. In 2020, I worked with the Natural Resources Defense
5 Council to develop a tool by which to assess the financial impact of differing types of
6 low-income bill assistance. Last year, I completed a study of water affordability in
7 twelve U.S. cities for the London-based newspaper, The Guardian. Currently, I continue
8 to be of counsel to the National Coalition for Legislation on Affordable Water (NCLA-
9 Water). A brief description of my professional background is provided in Appendix A.

10
11 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

12 A. After receiving my undergraduate degree in 1975 (Iowa State University), I obtained
13 further training in both law and economics. I received my law degree in 1981 (University
14 of Florida). I received my Master's Degree (regulatory economics) from the MacGregor
15 School in 1993.

16
17 **Q. HAVE YOU EVER PUBLISHED ON PUBLIC UTILITY REGULATORY**
18 **ISSUES?**

19 A. Yes. I have published three books and more than 80 articles in scholarly and trade
20 journals, primarily on low-income utility and housing issues. I have published an equal
21 number of technical reports for various clients on energy, water, telecommunications and
22 other associated low-income utility issues. A summary of my publications is included in
23 Appendix A.

1 **Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR OTHER UTILITY**
2 **COMMISSIONS?**

3 A. Yes. I have testified before the Pennsylvania Public Utility Commission (“PUC” or
4 “Commission”) on numerous occasions regarding utility issues affecting low-income
5 customers and customer service. I have also testified in regulatory proceedings in more
6 than 35 states and various Canadian provinces on a wide range of utility issues. A list of
7 the jurisdictions in which I have testified is listed in Appendix A.

8

9 **Q. PLEASE EXPLAIN THE PURPOSE OF YOUR DIRECT TESTIMONY.**

10 A. The purpose of my Direct Testimony is as follows.

- 11 ➤ First, I examine the PWSA programs by which PWSA proposes to address
12 low-income water affordability, including the PWSA Bill Discount Program
13 (BDP) and the PWSA pilot arrearage forgiveness program. As part of this
14 examination, I consider the impact of an increased residential customer charge
15 on low-income customers.
- 16
- 17 ➤ Second, I address the need to respond to the ongoing economic crisis
18 associated with the COVID-19 pandemic.
- 19
- 20 ➤ Finally, I examine the reasonableness of PWSA’s BDP outreach directed
21 toward its low-income customers.

22

23 **Summary of Recommendations**

24 **Q. PLEASE PROVIDE A SUMMARY OF THE RECOMMENDATIONS YOU**
25 **MAKE IN YOUR DIRECT TESTIMONY.**

26 A. Based on the data and analysis presented throughout my Direct Testimony, I recommend
27 as follows:

- 1 ➤ I support the recommendation of OCA witness Scott Rubin that the residential
2 customer charge should collect customer-related costs from the COSS with no adder
3 to further inflate fixed-charge recovery from Residential customers.
4
- 5 ➤ I recommend that the BDP modifications proposed by PWSA in this proceeding be
6 approved as the next step toward developing a full BDP program.
7
- 8 ➤ Given that the Settlement of the last rate case provided that “all parties reserve the
9 right to address the issues of an arrearage forgiveness program in the next base rate
10 case,” I recommend that PWSA be directed to modify its pilot Arrearage Forgiveness
11 Program in the following ways:
- 12
- 13 ○ Low-income customers newly enrolling in PWSA’s Bill Discount Program
14 should be automatically enrolled in the Pilot Arrearage Forgiveness Program.
15
- 16 ○ Existing BDP participants should be contacted by both mail and outbound
17 telephone call from a community-based organization offering enrollment in
18 the Pilot Arrearage Forgiveness Program.
19
- 20 ○ Arrearage Forgiveness Credits should be expanded such that any pre-existing
21 arrears exceeding \$180 at the time of enrollment in the BDP will be
22 reduced to zero by the third year of participation. This should replace
23 PWSA’s current program which provides a \$15 credit for each timely
24 customer payment. (PWSA St. 6, at 24). The first \$180 of arrears remains the
25 responsibility of the enrollee to pay over a three year payment plan.
26
- 27 ○ Arrearage Forgiveness Credits should be granted on a monthly basis for each
28 complete payment that has been successfully made by an Arrearage
29 Forgiveness participant. Consistent with the Commission’s prior decisions
30 regarding energy utility arrearage forgiveness, no requirement of “timeliness”
31 will be required for a complete payment to earn the corresponding Arrearage
32 Forgiveness Credit. PWSA’s current program requirement that “provides for
33 a \$15 reduction of a customer’s arrears for every on-time payment plan
34 payment” (PWSA St. 6, at 24) is inconsistent with Commission precedent.
35
- 36 ○ Arrearage Forgiveness Credits should be portable as between service
37 addresses, so long as a service address change for a program participant is
38 within the PWSA service territory. Customers who are making payments
39 should not be penalized simply because they move. Nor should customers be

1 faced with removal from the program in the event that they do not reapply
2 when they change addresses within the PWSA service territory.

- 3
- 4 ➤ PWSA was to be limited to a “pilot” arrearage forgiveness program in the Settlement
5 of PWSA’s last base rate case. The rationale for limiting arrearage forgiveness to a
6 “pilot” status no longer exists. Accordingly, I recommend that the arrearage
7 forgiveness program, along with enrollment and outreach, be adopted as one part of
8 PWSA’s low-income program without being deemed to be a pilot.
- 9
- 10 ➤ I recommend continuing the provisions of the PWSA Settlement of its last rate case
11 offering assistance to customers with income up to 300% of Poverty Level for one
12 additional year. PWSA agreed in its 2020 Settlement to provide protections for
13 customers at this income range (i.e., up to 300% of Poverty) until January 14, 2022.
14 My recommendation is to extend that agreement through January 1, 2023 (unless
15 PWSA or another party to this proceeding, petitions the Commission for a longer
16 extension).
- 17
- 18 ➤ PWSA should be specifically directed to set quantitative goals for BDP annual
19 enrollment. As part of establishing those goals, PWSA should also be directed to
20 develop measurable metrics by which to measure the success of achieving its BDP
21 enrollment goals and to periodically report to the Bureau of Consumer Service (BCS)
22 on the Company’s performance relative to those metrics. In the event that PWSA
23 does not fulfill its enrollment goals, it should be required to establish, within six
24 months of a finding of a shortfall in performance, a responsive action plan. Finally,
25 the Company should be directed to report to the parties and to BCS the affirmative
26 steps it will take to increase the enrollment of customers with income specifically at
27 or below 50% of Poverty.
- 28
- 29 ○ As part of the immediately preceding recommendation, I recommend PWSA
30 be directed to submit a detailed three-year outreach plan to the parties and to
31 BCS within six months of a final order in this proceeding. This outreach plan
32 should include specific quantitative outcome goals regarding (1) the
33 expansion of the identification of Confirmed Low-Income customers; (2) the
34 expansion of BDP enrollment; and (3) the expansion of BDP enrollment by
35 customers with income at or below 50% of Poverty. The outreach plan should
36 include specifically identified activities directed toward reaching customers
37 with income at or below 50% of Poverty. The outreach plan should include a
38 detailed description of community-based organizations with whom PWSA
39 will work, including but not limited to, grassroots community-based
40 organizations, food banks, schools, Head Start and other preschool programs.

1 **Part 1. Addressing Low-Income Affordability.**

2 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
3 **TESTIMONY.**

4 A. In this section of my testimony, I address the impact of PWSA’s requested rates on low-
5 income bill affordability. After reviewing the PWSA testimony regarding affordability
6 impacts, I further assess: (1) the Bill Discount Program offered by PWSA; and (2)
7 arrearage forgiveness.

8
9 PWSA witness Quigley cites the Authority’s Bill Discount Program (BDP) as evidence
10 that PWSA water rates remain affordable notwithstanding the rate increase proposed in
11 this proceeding. (PWSA St. 6, at 17). While PWSA proposes to increase residential
12 water rates (at a usage of 3,000 gallons per month) by 9.89% in Year 1 of a two-year
13 phase-in, and by 5.64% in Year 2, its proposed increase to BDP participants will be
14 8.54% in Year 1 and 5.64% in Year 2. Overall, for residential customers, rates will
15 increase by 14.76% for residential customers over the two year period ($[\$91.05 - \$79.34]$
16 $= \$11.71 / \$79.34 = 0.1476$), while rates to BDP participants will increase by 14.68%
17 ($[\$47.90 - \$41.77] = \$6.13 / \$41.77 = 0.1468$).

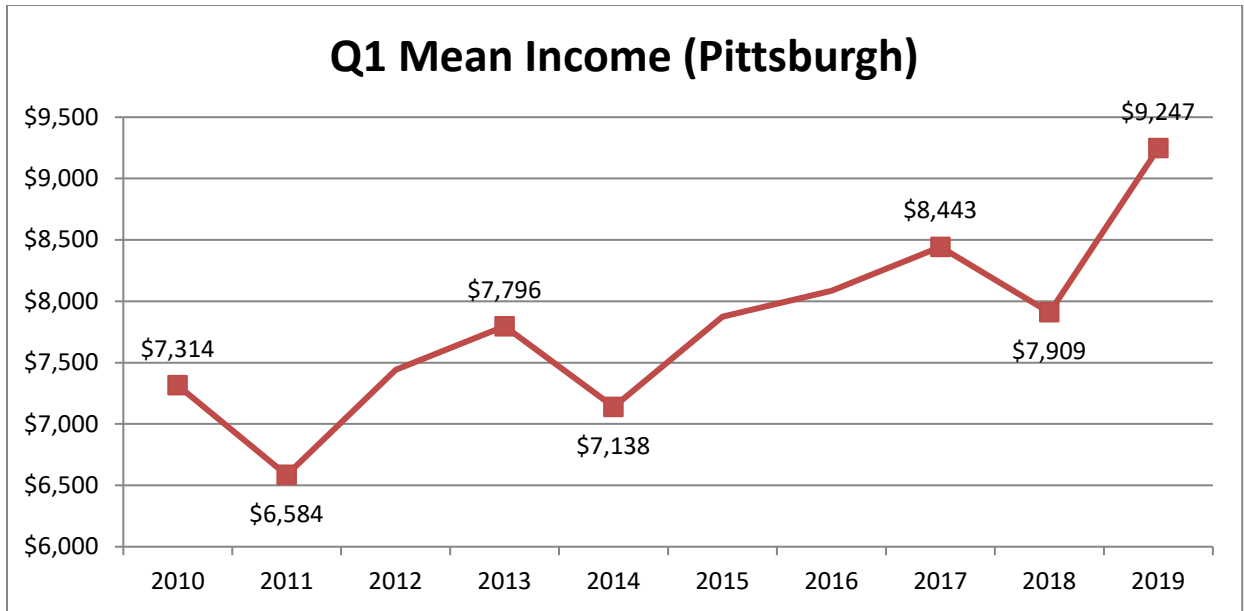
18
19 **Q. DOES THE PWSA BILL DISCOUNT PROGRAM ADEQUATELY PROTECT**
20 **LOW-INCOME CUSTOMERS?**

21 A. No. Depending on whether one uses the BDP participation rate reported in PWSA’s
22 Direct Testimony, or the participation rate reported in PWSA’s discovery responses, the
23 BDP reaches either 4,421 low-income customers (OCA-I-9) or 4,530 low-income

1 customers. (PWSA St. 6, at 23). Either figure indicates that the program serves a small
2 fraction of PWSA's low-income customer base. Using the same methodology that BCS
3 uses for estimating the number of gas and electric customers that are low-income (and
4 thus eligible for the state's universal service programs), except applying the numbers on a
5 zip code (rather than county) basis, PWSA would have an estimated 26,759 estimated
6 low-income customers. Using the higher of PWSA's two reported BDP participation
7 levels (4,530), it is thus evident that PWSA serves less than 17% of its estimated low-
8 income population.

9
10 Moreover, a review of the lowest (First Quintile, Q1) incomes in Pittsburgh¹ shows the
11 extent to which a two-year 15% (14.68%) increase in water bills outstrips changes in
12 income over time. In only one two-year period (2011 - 2013) would the two-year
13 increase in income for the lowest quintile of income have kept pace with a 15% increase
14 in water bills. Even then, the increase reflects the substantial dip in 2011 incomes rather
15 than a substantial increase in First Quintile income in 2013. As the Chart below clearly
16 indicates, it cannot be assumed that the incomes of Pittsburgh's lowest income population
17 will increase each year. In the past ten years, for example, mean Q1 incomes suffered a
18 substantial decline in 2011, 2014 and 2018. This doesn't even take into account the
19 income decline that will likely be documented when 2020 Census data is published.

¹ The Census Bureau each year ranks households by level of household income from lowest to highest. The Census Bureau then divides that rank ordering into five equal parts, each part of which is called one "quintile." The "First Quintile" is that one-fifth of households with the lowest income. The mean income of each quintile is the income deemed to be representative of that portion of the population.



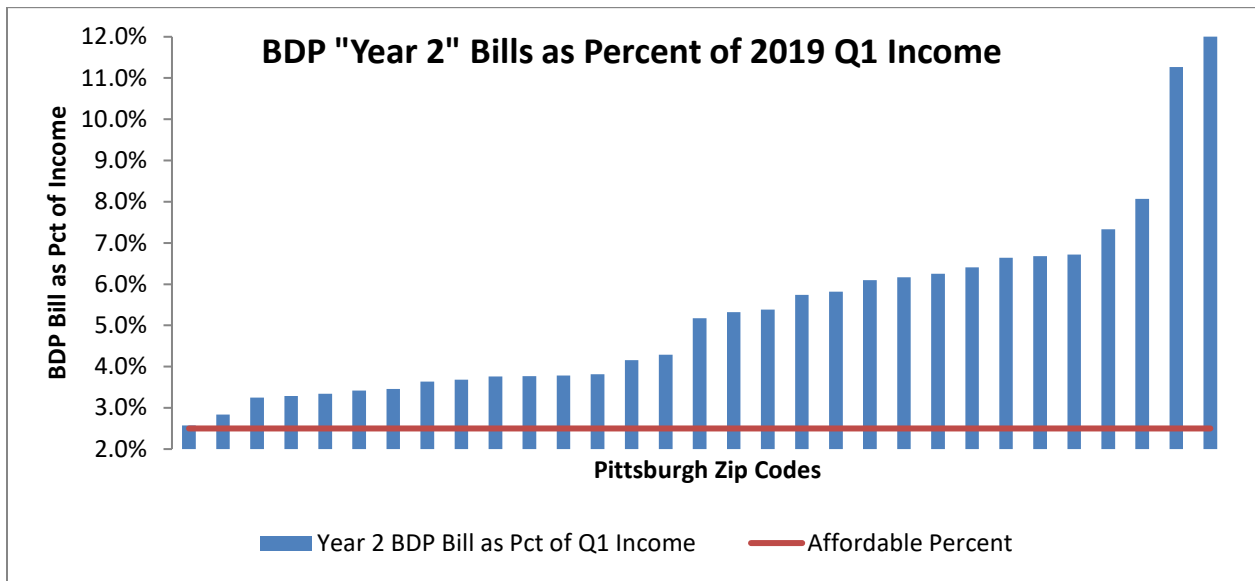
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10

The extent to which PWSA fails to address affordability through its Bill Discount Program can be seen below as well. The Chart below shows the PWSA bill after the two-year rate hike—it is important to remember that these bills do not include ALCOSAN charges—as a percentage of First Quintile (Q1) income.² The Chart below top-codes its PWSA “bill burden” at 12% of income. The highest burden (far right bar on the graph) experienced in a Pittsburgh Zip Code is 24.3%. The second highest burden (second bar from the right) is 11.3%. As can be seen, in all of the 31 Pittsburgh Zip Codes, PWSA water burdens (i.e., excluding sewer bills), even after application of the BDP bill discount, exceed an affordable percentage of income.³ Moreover, as noted above, it is

² Since the bill increases are in the future, the most recent Census income data is used (2019). Actual incomes at the time of the Year 2 rate hike may be somewhat higher or lower than the 2019 incomes.

³ The “affordable” percentage of income is set at 2.5% for purposes of this graph. That percentage, if doubled (to 5.0%) to account for wastewater bills as well, would be consistent with the percentage of income which PWSA has cited as being the burden deemed affordable by the U.S. Environmental Protection Agency (EPA). (OCA-I-5, Attachment, at 17) (citing EPA as deeming a combined burden of 4.5% to be affordable). The 2.5% burden is used for purposes of illustration and not as a recommended definition of an affordable water burden.

1 important to remember that these burdens include only PWSA bills; they do *not* include
2 ALCOSAN bills.⁴



3
4 **A. Structure of Bill Discount Program.**

5 **Q. PLEASE DESCRIBE THE EXISTING BILL DISCOUNTS PROVIDED BY PWSA**
6 **TO LOW-INCOME CUSTOMERS.**

7 A. PWSA agreed to provide certain bill discounts to customers with income at or below
8 150% of Federal Poverty Level in its last rate case. PWSA agreed to provide a discount
9 equal to 100% of the water/wastewater minimum charge. In addition, PWSA agreed to
10 provide a further 20% discount on the volumetric charge for customers with income at or
11 below 50% of the Federal Poverty Level. (PWSA St. 6, at 24). I will discuss arrearage
12 forgiveness in more detail below.

13

⁴ When asked to provide a copy of a typical residential bill, PWSA provided a bill with an asked-to-pay amount of \$142.99 (at “full average consumption”). Of that figure, \$42.77 (30%) is attributable to ALCOSAN charges. (OCA-III-12, Attachment A).

1 **Q. PLEASE DESCRIBE WHAT CHANGES PWSA IS PROPOSING IN ITS BILL**
2 **DISCOUNT IN THIS RATE PROCEEDING.**

3 A. In this rate proceeding, PWSA proposes to expand the volumetric rate discount from 20%
4 to 50% for Bill Discount participants with income at or below 50% of Poverty Level. It
5 further proposes to extend a bill reduction in the stormwater fee by 75% for all customers
6 with income at or below 150% of Poverty Level. (PWSA St. 6, at 26).

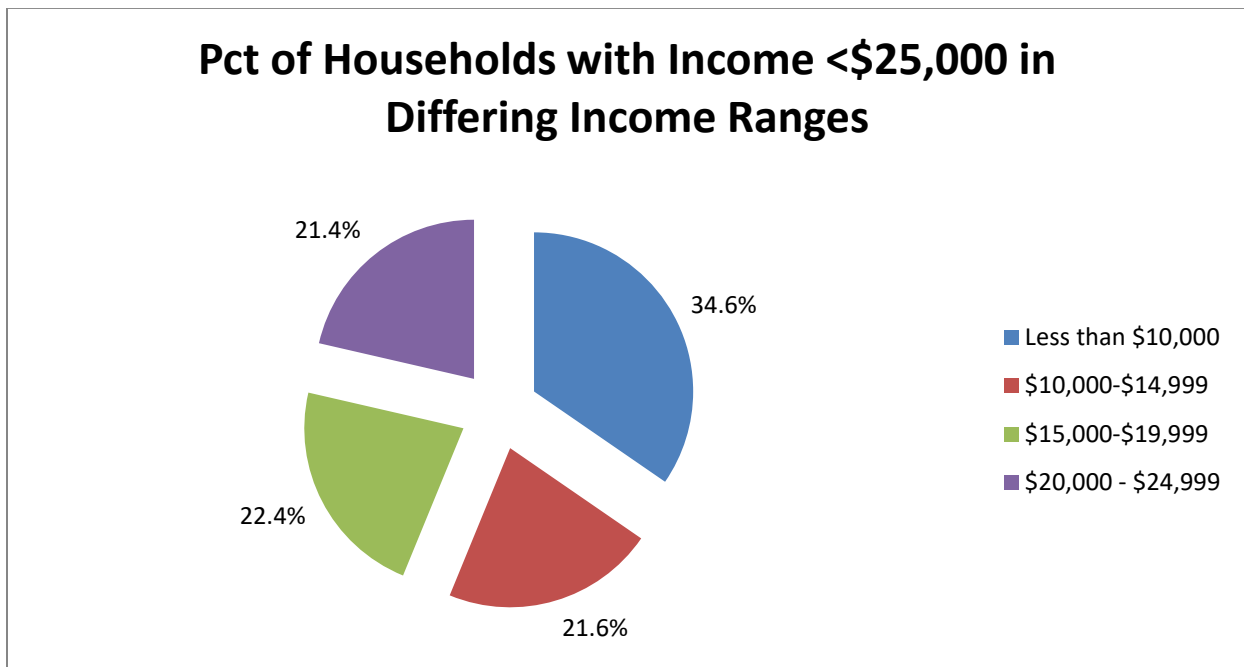
7
8 **Q. WILL PWSA’S BDP, WITH THE CHANGES PROPOSED IN THIS RATE**
9 **PROCEEDING, MAKE BILLS AFFORDABLE?**

10 A. The modifications will improve the program but will not adequately address the
11 affordability needs of PWSA’s low-income customers. Consider PWSA bill burdens as a
12 percentage of income at differing levels of income in the PWSA service territory as set
13 forth in the Table immediately below. Using the discounted BDP bill at the rates as
14 proposed by PWSA in this proceeding as reported by PWSA (PWSA St. 6, at 17), bill
15 burdens can be calculated for various income ranges (using the mid-point of each range
16 as the dollar income level). As can be seen, even given the discounted BDP bill, bills
17 remain unaffordable for households with annual income at or below \$15,000, and are
18 nearly unaffordable at an annual income of \$20,000.

Income	PWSA Bill (\$47.90/mo x 12 months)	PWSA Bill Burden
Less than \$10,000	\$574.80	11.5%
\$10,000 - \$14,999	\$574.80	4.6%
\$15,000 - \$19,999	\$574.80	3.3%
\$20,000 - \$24,999	\$574.80	2.6%

19

1 These burdens are significant because, as the Chart below demonstrates, the PWSA
2 service territory has substantial numbers of households living at the lowest ranges of
3 income within these income ranges. The Chart immediately below shows the percentage
4 of households with income below \$25,000 that, in fact, have income at varying income
5 ranges. As can be seen, by far the largest percentage of households in this population
6 (income <\$25,000) have income below \$10,000. Combined, the population with income
7 at or below \$15,000 represent more than half (56.2%) of the total population with income
8 less than \$25,000. Even given the bill discounts proposed by PWSA, in other words,
9 PWSA bills remain unaffordable to a substantial segment of the Authority's low-income
10 population.



11
12 **Q. DO YOU RECOMMEND MODIFICATIONS TO THE BILL DISCOUNT**
13 **PROPOSED BY PWSA IN THIS PROCEEDING?**

14 A. No. Despite the shortcomings identified above, I recommend that the BDP modifications
15 proposed by PWSA in this proceeding be approved as an interim step. My agreement to

1 the adoption of the changes proposed by PWSA in this proceeding should not be
2 construed as an agreement that PWSA's BDP, as so modified, adequately addresses the
3 affordability needs of its low-income customers. I would reserve the right to address
4 what modifications PWSA would need to make to its BDP to adequately address
5 affordability, including the modification of the BDP to become a Percentage of Income
6 Plan (PIP).⁵

7
8 **B. Arrearage Forgiveness.**

9 **Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR**
10 **TESTIMONY.**

11 A. The Settlement of PWSA's last base rate case provided in relevant part the following:
12 "PWSA will institute a Pilot Arrearage Forgiveness Program whereby any customer
13 currently approved or approved in the future by Dollar Energy Fund to be enrolled in the
14 Bill Discount Program will automatically be eligible to have their water/wastewater
15 arrears forgiven in increments of \$15 per each payment received while the customer is in
16 an active, income based payment plan as documented by PWSA in their Customer
17 Information System." (Settlement, para. (F)(2)(a)). The Settlement provided further that
18 "PWSA reserves the right to propose to alter or eliminate this program in its next base
19 rate case. All parties reserve the right to address the issues of an arrearage forgiveness
20 program in the next base rate case." (Id., at (F)(2)(d)).

21

⁵ My lack of a recommendation for PWSA to pursue a PIP in this proceeding should not be construed as an acknowledgement that a PIP is either, administratively or substantively, inadvisable.

1 **Q. HAS PWSA IMPLEMENTED A PILOT ARREARAGE FORGIVENESS**
 2 **PROGRAM?**

3 A. Yes. And in this proceeding, PWSA stated that it will “continue the pilot arrearage
 4 forgiveness program agreed to in the most recent rate case settlement, which was
 5 approved by the Commission.” (PWSA St. 1, at 7). To date, PWSA has enrolled 143
 6 customers in its pilot arrearage forgiveness program (United-I-19(a)), and removed 24 of
 7 those participants (United-I-19(c)). Of the 143 new enrollees, only eight (8) were
 8 existing BDP participants (United-I-19(b)).

9
 10 **Q. IS PWSA ADEQUATELY SERVING THE EXISTING BDP POPULATION?**

11 A. No. As I discussed in detail above, PWSA witness Quigley reports that PWSA has 4,530
 12 BDP participants. (PWSA St. 6, at 23). PWSA is enrolling virtually no new BDP
 13 participants in the pilot arrearage forgiveness program, even though those new BDP
 14 enrollees have pre-existing arrears. From February 2021 through April 2021, the time
 15 period during which arrearage forgiveness participants have been enrolled, PWSA
 16 enrolled 371 new participants in the BDP, when those new participants had pre-existing
 17 arrears. Of those 371 new enrollees with pre-existing arrears, PWSA enrolled eight (8)
 18 (2.2%) in the pilot arrearage forgiveness program.

Month	New Arrearage Forgiveness Enrollment (United-I-19)	New BDP Enrollees Entering Arrearage Forgiveness (United-I-19)	New BDP Enrollees (OCA-I-14)
February 2021	66	3	116
March 2021	28	1	80
April 2021	49	4	175

19

1 PWSA concedes that rather than enrolling new BDP participants in the arrearage
2 forgiveness program at the time of BDP enrollment, PWSA merely sends them “a letter. .
3 . advising them to take advantage of the Arrearage Forgiveness Program by calling
4 Customer Service. . .” (United-I-21). PWSA states that it lacks the ability to retroactively
5 determine which new BDP enrollees had an arrearage at the time of enrollment. (OCA-I-
6 14). However, according to the “final” PWSA quarterly compliance filing (April 30,
7 2021, Appendix D)):

- 8 ➤ In October 2020, 149 BDP participants newly entered the program with a pre-
9 existing arrearage of \$185,189.14 (average of \$1,242.88);
- 10 ➤ In January 2021, 92 BDP participants newly entered the program with a pre-
11 existing arrearage of \$93,084.85 (average of \$1,011.79); and
- 12 ➤ In April 2021, 120 BDP participants newly entered the program with a pre-
13 existing arrearage of \$138,064.74 (average of \$1,150.54).

14 Clearly, customers are newly entering the BDP with substantial arrears and not being
15 directed to the arrearage forgiveness program.

16
17 **Q. WHAT DO YOU RECOMMEND FOR PWSA’S ARREARAGE FORGIVENESS**
18 **PROGRAM?**

19 A. Given that the Settlement of the last rate case provided that “all parties reserve the right
20 to address the issues of an arrearage forgiveness program in the next base rate case,” I
21 recommend that PWSA be directed to modify its pilot Arrearage Forgiveness Program in
22 the following ways:

- 1) Low-income customers newly enrolling in PWSA’s Bill Discount Program should be automatically enrolled in the Pilot Arrearage Forgiveness Program. Forgiveness should be provided for all arrearages exceeding \$180.
- 2) Existing BDP participants should be contacted by both mail and outbound telephone call from a community-based organization offering enrollment in the Pilot Arrearage Forgiveness Program.
- 3) Arrearage Forgiveness Credits should be expanded such that any pre-existing arrearage exceeding \$180 at the time of enrollment in the BDP will be reduced to zero by the third year of participation through a combination of an arrearage credit plus an affordable payment plan for the first \$180 of arrearage balance that remains the responsibility of the customer. This should replace PWSA’s current program which provides a \$15 credit for each timely customer payment. (PWSA St. 6, at 24). Given the levels of pre-program arrears that new BDP enrollees are bringing into the program, the \$15 credit does not provide a meaningful amount of arrearage credits. As explained above, BDP participants newly entering the BDP program with a pre-existing arrearage had an average arrearage balance of \$1,242.88 in October 2020; an average arrearage balance of \$1,011.79 in January 2021; and an average arrearage balance of \$1,150.54 in April 2021.
- 4) Arrearage Forgiveness Credits should be granted on a monthly basis for each complete payment that has been successfully made by an Arrearage Forgiveness participant. Consistent with the Commission’s prior decisions regarding energy utility arrearage forgiveness, no requirement of “timeliness”

1 will be required for a complete payment to earn the corresponding Arrearage
2 Forgiveness Credit. PWSA's current program requirement that "provides for
3 a \$15 reduction of a customer's arrears for every on-time payment plan
4 payment" (PWSA St. 6, at 24) is inconsistent with Commission precedent.

5 5) Arrearage Forgiveness Credits should be portable as between service
6 addresses, so long as a service address change for a program participant is
7 within the PWSA service territory. Customers who are making payments
8 should not be penalized simply because they move. Nor should customers be
9 faced with removal from the program in the event that they do not reapply
10 when they change addresses within the PWSA service territory.

11
12 **Q. HAVE YOU DEVELOPED A COST ESTIMATE FOR THESE PROPOSED**
13 **CHANGES?**

14 A. Yes. I use the average arrearage balance reported in PWSA's last four quarters of
15 reports (July 2020 through April 2021). I then use the number of new BDP enrollees
16 who entered BDP with a pre-existing arrearage for those same four quarters (as reported
17 by PWSA). I finally use the average arrearage balance which those new BDP enrollees
18 bring into the BDP as reported by PWSA (minus the \$180 arrearage remaining the
19 responsibility of the enrollee divided by three years of the arrearage forgiveness
20 program). I adjust the resulting number (\$142,646) for the amount that PWSA would
21 expect not to collect even in the absence of the arrearage forgiveness program. This
22 results in a cost-of-service adjustment of \$35,655, which I round to \$36,000.

23

1 **Q. DO YOU HAVE ANY OTHER OBSERVATION ABOUT THE PWSA PILOT**
2 **ARREARAGE FORGIVENESS PROGRAM?**

3 A. Yes. During the last case, PWSA testified that its information technology was not
4 capable of supporting an arrearage forgiveness program.⁶ That technology problem has,
5 with the current program, been overcome. Accordingly, I recommend that the arrearage
6 forgiveness program, along with enrollment and outreach, be adopted as one of PWSA’s
7 low-income programs without being deemed to be a continuing pilot.

8

9 **C. Proposed Residential Customer Charge.**

10 **Q. PLEASE DESCRIBE THE PURPOSE OF THIS SECTION OF YOUR**
11 **TESTIMONY.**

12 A. In this section of my testimony, I assess the impact of PWSA’s proposed increase in its
13 residential customer charge on low-income customers. PWSA proposes to increase its
14 residential customer charge by 5% over and above the fully-allocated customer costs in
15 its cost-of-service study. I find that the proposed customer charge increase will generate
16 particular adverse impacts to low-income customers.

17

18 **Q. UPON WHAT DO YOU BASE THAT CONCLUSION?**

19 A. By definition, the residential customer charge is an unavoidable fixed monthly charge.
20 PWSA witness Harold Smith (PWSA St. 4) states as much when he argues against an

⁶ In Docket Nos. R-2020-3017951 (water) / R-2020-3017970 (wastewater), PUC v. Pittsburgh Water and Sewer Authority, PWSA witness Quigley testified that an arrearage forgiveness program would “require significant CIS development. . .” (PWSA St. No. 8-R at 47). Her testimony continued to state that “the status of our existing CIS does not enable us to implement such a program at this time.” (PWSA St. No. 8-R at 49).

1 elimination of the minimum charge. According to Witness Smith, “removing the
2 minimum allowance from the rate structure would result in a significant drop in total
3 fixed revenue for PWSA.” (PWSA St. 4, at 25). Witness Smith argues that having a
4 higher amount of fixed revenue results in a “more stable” cash flow for PWSA. (Id.)

5
6 By creating an unavoidable cost, however, low-income customers are less capable of
7 controlling the bills that impose unaffordable water burdens. “Water burdens” are bills as
8 a percentage of income. With an increased fixed customer charge, low-income customers
9 would need to invest more money in water conservation to generate the same bill
10 reduction. As I discuss in this testimony, however, low-income customers simply do not
11 have the funds to make those investments. Moreover, an increased fixed customer charge
12 makes it more difficult for a low-income customer to cost-justify any particular
13 expenditure on a water conservation measure. Low-income customers, however, have
14 higher implicit discount rates for conservation investments, that return which is required
15 to incent the investment. When funds are limited, in other words, households tend to
16 commit those funds only to investments with quick payback periods. By making it more
17 difficult to achieve those implicit discount rates, PWSA is, in effect, discouraging water
18 conservation investments from being made.

19
20 **Q. WHAT DO YOU CONCLUDE?**

21 A. By increasing the fixed monthly residential customer charge, PWSA makes it more
22 difficult for all residential customers to reduce their bills by reducing their usage. This
23 decreased ability to control one’s bills is a particular problem to those low-income

1 customers who are receiving unaffordable bills with which to begin. The very fact of
2 unaffordability imposes a barrier to making water conservation investments. The
3 increased customer charge introduces yet another barrier to those investments occurring.

4
5 **Q. DOESN'T THE PWSA BILL DISCOUNT PROGRAM PROTECT LOW-INCOME**
6 **CUSTOMERS FROM THE HARMS OF AN INCREASE IN THE FIXED**
7 **CUSTOMER CHARGE?**

8 A. The BDP only helps to protect BDP participants from the harms of an increase in the
9 fixed residential customer charge. As I note above, however, PWSA witness Quigley
10 reports that PWSA has 4,530 BDP participants. (PWSA St. 6, at 23). Using the same
11 methodology that BCS uses for estimating the number of gas and electric customers that
12 are low-income (and thus eligible for the state's universal service programs), except
13 applying the numbers on a zip code (rather than county) basis, it is thus evident that
14 PWSA serves fewer than one-of-five (17%) of its estimated low-income population.

15
16 **Q. WHAT DO YOU RECOMMEND?**

17 A. I support that the recommendation of OCA witness Scott Rubin (OCA St. 3) that the
18 residential customer charge should collect customer-related costs from the COSS with no
19 adder to further inflate fixed-charge recovery from Residential customers. I do not
20 address other recommendations made in Mr. Rubin's testimony.

1 **Part 2. Ongoing COVID-19 Economic Crisis.**

2 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
3 **TESTIMONY.**

4 A. In this section of my testimony, I document the ongoing economic emergency facing
5 residential customers as caused by the past and ongoing impacts of the COVID-19
6 pandemic. I recommend that the COVID-19 responsive actions agreed to by PWSA
7 should be continued on a year-by-year basis. This results in a continuation until January
8 1, 2023 unless extended by the Commission upon application of any party to this
9 proceeding.

10
11 **A. PWSA’s Existing COVID-19 Emergency Response.**

12 **Q. PLEASE EXPLAIN THE COVID-19 RESPONSE THAT PWSA AGREED TO IN**
13 **THE SETTLEMENT OF ITS 2020 RATE PROCEEDING.**

14 A. In the Settlement of its 2020 rate proceeding, PWSA agreed to provide the following
15 COVID-19 emergency relief in addition to any emergency relief ordered by the
16 Commission:

- 17 ➤ PWSA will waive reconnection fees through the end of the next rate case or one
18 year from the date of a final order in this proceeding, whichever is later.
- 19
20 ➤ PWSA will perform targeted outreach to customers with existing debt to negotiate
21 appropriate payment arrangements and/or assist them with enrollment in PWSA’s
22 customer assistance programs, if eligible.
- 23
24 ➤ For one year from the date of the final order in this case, or until January 14,
25 2022, whichever is later, as proposed by PWSA, PWSA will implement the
26 following payment arrangement process due to the COVID-19 pandemic:
27
 - 28 ○ Customers will be offered at least one payment arrangement consistent with the
29 term lengths identified in 66 Pa. C.S. § 1405, except that customers between 250-

1 300% of Federal Poverty Level will be offered a payment arrangement of no less
2 than 24 months; those customers over 300% of the Federal Poverty Level will be
3 offered a payment arrangement of no less than twelve months in length, if
4 warranted based on the customers' facts and circumstances, including their ability
5 to pay regardless of the number of prior arrangements or prior broken payment
6 arrangements on their accounts.

7
8 ○ Victims of domestic violence with a Protection from Abuse Order or other court
9 order which contains clear evidence of domestic violence will be offered a
10 payment arrangement that exceeds the term lengths identified in 66 Pa. C.S. §
11 1405 if warranted based on the customers' facts and circumstances, including
12 their ability to pay.

13
14 ➤ PWSA will continue to expand its outreach efforts with community partners and
15 will continue to solicit the input and suggestions of the LIAAC members as to
16 how to most effectively pursue this outreach.

17
18 ➤ PWSA will waive its Hardship Grant Program's sincere effort of payment
19 requirements for one year from the date of the final order in this case, or until
20 January 14, 2022, whichever is later.

21
22 (Settlement, para. D(3)). Aside from specific programmatic recommendations I present
23 throughout this testimony that are not specifically associated with COVID-19 relief, I
24 recommend that these Settlement provisions be extended on a year-by-year basis beyond that
25 provided in the Settlement. The first extension would thus be through January 1, 2023.

26
27 **B. The Ongoing Need for the Proposed PWSA Debt Relief Program.**

28 **Q. PLEASE EXPLAIN THE DATA UPON WHICH YOU BASE YOUR DISCUSSION**
29 **OF THE NEED TO EXTEND COVID-19 RELIEF FOR PWSA CUSTOMERS.**

30 A. I base my discussion of Pennsylvania below largely on the Census Bureau's Phase 3
31 PULSE Survey. According to the Census Bureau, "[t]he Household Pulse Survey is
32 designed to deploy quickly and efficiently, collecting data to measure household

1 experiences during the coronavirus pandemic.” Data collection for Phase 3 of the
2 Household Pulse Survey ran from October 28, 2020 – March 29, 2021 and is now closed.
3 Data collection for the next Phase of the survey (Phase 3.1) began on April 14, 2021.
4

5 **Q. IS THE DATA FROM THE PULSE SURVEY THAT YOU EXAMINE SPECIFIC**
6 **TO THE PWSA SERVICE TERRITORY?**

7 A. No. While the Census releases data on various metropolitan areas, including
8 Philadelphia, it does not release data on geographic areas that could be aggregated into
9 the PWSA service territory. Accordingly, I examine state-specific data for Pennsylvania
10 as a whole. The data I examine is primarily from Week 30 (May 12 through May 24,
11 2021) (the most recent week of Phase 3.1).⁷
12

13 **Q. WHAT DO YOU CONCLUDE ABOUT PENNSYLVANIA EMPLOYMENT**
14 **INCOME AS IT IS RELATED TO COVID-19?**

15 A. The Census PULSE Survey documents that a large number of Pennsylvania residents
16 report having lost employment income even in the “past four weeks” (i.e., at the time of
17 the survey). Table 3 shows that as recently as Week 30 of the PULSE Survey (May 12
18 through May 24, 2021), more than 1.6 million Pennsylvania residents (16.5%) reported
19 losing employment income in the past four weeks. The Table shows further that,
20 substantially more than 1.2 million Pennsylvania residents *expect* to lose employment
21 income “in the next 4 weeks.” More than one-in-six Pennsylvania residents, in other

⁷ All PULSE Survey data cited in my testimony can be accessed at:<https://www.census.gov/programs-surveys/household-pulse-survey/data.html#phase3.1> (last accessed July 7, 2021).

1 words, have lost income and an additional one-in-twelve expect to lose income in the
 2 next four weeks.

Table 3. Experienced and Expected Loss of Employment Income (Pennsylvania) (PULSE Survey) (Week 30)				
Experienced Loss of Employment Income in Last Four Weeks				
		Yes	No	% Yes
Total	9,760,505	1,606,120	8,090,145	16.5%
Expected Loss of Employment Income in next 4 weeks				
		Yes	No	% Yes
Total	9,760,505	1,247,222	8,432,238	12.8%

3
 4 On a percentage basis, this loss of employment income was over-represented in the lower
 5 income brackets in Pennsylvania. Table 4 shows the proportionate representation of
 6 Pennsylvania residents who have experienced a loss of income in the last four weeks. By
 7 “proportionate representation,” I mean that I first compare the percentage of total
 8 population in each income range. I then compare the percentage of population in each
 9 income range reporting a loss of employment income. Those income ranges which are
 10 over-represented in the income ranges having lost employment income are highlighted in
 11 yellow. With the exception of residents with income between \$35,000 and \$49,999, the
 12 income range that disproportionately experienced a loss of employment income were
 13 those incomes less than \$75,000. Persons in the income range of \$25,000 to \$34,999
 14 were the most over-represented in that population having experienced a loss of
 15 employment income. This further supports the conclusion that the economic crisis
 16 associated with COVID-19 is not simply a “low-income” issue, but instead reaches
 17 beyond those households with income at or below 150% of Poverty Level. Of

1 Pennsylvania residents who have experienced a loss of employment income in the last
 2 four weeks, nearly 15% fell in that income range even though that income range
 3 represented only 8% of the total population reporting data.

Table 4. Loss of Employment Income by Household Income (in the last four weeks)
 (Income Range as Percent of Total) (PULSE Survey)
 (yellow shade: income ranges disproportionately represented in loss of employment income)

	Week 30	
	Total	Yes
<\$25,000	9.3%	11.9%
\$25,000 - \$34,999	8.3%	14.1%
\$35,000 - \$49,999	6.9%	6.9%
\$50,000 - \$74,999	13.3%	15.3%
\$75,000 - \$99,999	9.3%	7.0%
\$100,000 - \$149,999	11.1%	5.8%
\$150,000 - \$199,999	3.6%	2.2%
\$200,000 and above	4.6%	0.5%
Sum of those reporting	100%	100%

4

5 Based on this data, it is necessary to conclude that while the loss of employment income
 6 certainly disproportionately affected the lowest income households, that loss of
 7 employment income was not *exclusively* a low-income phenomenon. Accordingly, I
 8 recommend continuing the provisions of the PWSA Settlement of its last rate case
 9 offering assistance to customers with income up to 300% of Poverty Level for one
 10 additional year. PWSA agreed in its 2020 Settlement to provide protections for
 11 customers at this income range (i.e., up to 300% of Poverty) until January 14, 2022. My
 12 recommendation is to extend that agreement through January 1, 2023 (unless PWSA or
 13 another party to this proceeding, petitions the Commission for a longer extension).

1 **Q. HOW HAS COVID-19 AFFECTED THE ABILITY OF PENNSYLVANIA**
2 **RESIDENTS TO PAY THEIR USUAL HOUSEHOLD EXPENSES?**

3 A. Pennsylvania residents have continuing difficulties in paying for their basic living
4 expenses under COVID-19. The Census PULSE survey reports on the “difficulty paying
5 for usual household expenses during the coronavirus pandemic.” The Table below
6 presents the data for Pennsylvania. As this Table shows, the economic conditions for
7 Pennsylvania residents are still dire. In Week 30 of the PULSE Survey, 993,000
8 Pennsylvania residents had a “very difficult” time in paying for usual household expenses
9 in the past seven days. Moreover, the combined total of people reporting that they found
10 it either “very difficult” or “somewhat difficult” to pay for usual household expenses in
11 Week 30 was 24.6%, nearly one-in-four of all Pennsylvania residents.

12
13 In contrast, the percentage of Pennsylvania residents reporting that they found it “not at
14 all difficult” to pay for their usual household expenses in the past seven days during the
15 coronavirus pandemic still remained at just over 50% of the total population reporting.
16 Only half of all Pennsylvania residents, in other words, found it “not at all” difficult to
17 pay their usual household expenses, even at the end of May 2021.

Table 5. Difficulty in Paying for Usual Household Expenses in Past 7 Days During the Coronavirus Pandemic (PULSE Survey) (Pennsylvania) (Total = 9,760,505) ⁸			
Week 30 (in millions)			
Not at All	A Little	Somewhat	Very
4.790	2.054	1,248	0.993
52.7%	22.6%	13.7%	10.9%

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As with the data on the loss of employment income, the data on difficulties in paying for usual household expenses during the coronavirus pandemic shows a marked difference based on income levels. The data is set forth in the Table immediately below. Within the population of households with income less than \$25,000, more than one-in-four (28.6%) of households report having a “very difficult” time in paying their bills.

The “very difficult” data, however, does not tell the entire story. Nearly three-fifths of the population with income less than \$25,000 report having a “very difficult” or a “somewhat difficult” time (27.9% + 28.6% = 56.6%) in paying for usual household expenses in the past seven days. Problems in the next two income ranges also remain very prevalent. Nearly half (47.1%) of households with income between \$25,000 and \$34,999 (26.6% + 20.5%) have a “somewhat” or “very” difficult time paying their usual household expenses. 30.7% in the income range of \$35,000 to \$49,999 report having a “somewhat difficult” or “very difficult” time in paying usual household expenses in the past seven days as of Week 30. Even in the income range as high as \$50,000 to \$74,999,

⁸ Percentage is of those reporting.

1 nearly one-in-five (19.7%) Pennsylvania residents report having either a “somewhat
 2 difficult” or a “very difficult” time paying for their usual household expenses.

3

		Week 30			
		Not at All	A Little	Somewhat	Very
<\$25,000	907,637	19.7%	23.8%	27.9%	28.6%
\$25-\$34,999	813,121	26.5%	26.3%	26.6%	20.5%
\$35-\$49,999	678,228	45.2%	24.2%	13.6%	17.1%
\$50-\$74,999	1,294,422	56.6%	23.7%	9.9%	9.8%
\$75-\$99,999	905,899	60.5%	14.0%	18.8%	6.7%
\$100-\$149,999	1,081,575	74.5%	16.5%	3.7%	5.3%
\$150-\$199,999	354,392	83.7%	13.1%	3.2%	0.0%
\$200,000+	449,135	89.1%	9.9%	0.5%	0.5%

4

5 The data above demonstrates the reasonableness of PWSA’s efforts to continue to offer
 6 extended payment plans (United-I-14). It is not merely bills on a going-forward basis
 7 that are in danger of nonpayment due to the economic crisis associated with the COVID-
 8 19 pandemic. It is the fact that households continue to have difficulties in paying usual
 9 household expenses. However, the data further demonstrate that while the economic
 10 crisis associated with COVID-19 reaches into more moderate income levels, the
 11 economic crisis nonetheless is still disproportionately falling on the lowest income
 12 households. Finally, the data above demonstrates that even as the public vaccination

⁹ Percentage is of those reporting.

1 against the coronavirus becomes more widespread, the economic crisis caused by the
2 COVID-19 pandemic continues to hit Pennsylvania residents, including PWSA
3 customers, hard. The economic impacts will result in a long-term economic disruption
4 for customers of PWSA.

5
6 **Q. WHAT IS THE FIRST LONG-TERM ECONOMIC IMPACT OF COVID-19?**

7 A. The resolution of the COVID-19 health crisis will not end the economic crisis facing low-
8 income customers. One analysis by the Center on Poverty and Social Policy at Columbia
9 University projects the longer-term effects of the COVID-19 economic crisis.¹⁰ The
10 Columbia University research center forecasted poverty rates under three alternative
11 unemployment scenarios: 10 percent; 20 percent, and 30 percent. The Center assumed
12 that such high levels of unemployment lasted for two different scenarios: (1) one quarter,
13 and (2) one year. The Center uses the “Supplemental Poverty Measure” (SPM), which
14 differs somewhat from the Federal Poverty Level.¹¹

¹⁰ Parolin and Wimer (April 16, 2020). Forecasting Estimates of Poverty During the COVID-19 Crisis: Poverty Rates in the United States Could Reach Highest Levels in Over 50 Year, available at <https://www.povertycenter.columbia.edu/news-internal/coronavirus-forecasting-poverty-estimates>, (last accessed July 7, 2021).

¹¹ In simplified terms, the Census Bureau explains that the Supplemental Poverty Measure, “takes into account family resources and expenses not included in the official measure as well as geographic variation. First, it adds the value of in-kind benefits that are available to buy basic goods to cash income. In-kind benefits include nutritional assistance, subsidized housing and home energy assistance. Then it subtracts necessary expenses for critical goods and services not included in the thresholds from resources. Necessary expenses that are subtracted include income taxes, Social Security payroll taxes, child care and other work-related expenses, child support payments to another household, and contributions toward the cost of medical care and health insurance premiums.” What is the Supplemental Poverty Measure and How Does it Differ from the Official Measure, available at, https://www.census.gov/newsroom/blogs/random-samplings/2018/09/what_is_the_suppleme.html (last accessed July 7, 2021).

1 The Center began with a projected SPM of 12.4% in February 2020, the lowest recorded
2 poverty rate since 2001. Its projected poverty rates after the onset of the COVID-19
3 pandemic, however:

4 point to higher poverty rates today. If unemployment rates rise to 10 percent,
5 comparable to the unemployment rate during the peak of the Great
6 Recession, we project that poverty rates would rise to 15 percent. This is
7 approximately the same rate of poverty observed in 2010. (note omitted). If
8 unemployment rates rise to 20 percent, we project a poverty rate of 16.9
9 percent—the highest rate of poverty since 1967, the first year for which
10 reliable estimates of poverty are available. Finally, if annual unemployment
11 rates rise to 30 percent, we project a poverty rate of 18.9 percent. This would
12 mark the highest rate of poverty over the past 50 years.¹²

13
14 Two observations are appropriate. On the one hand, unemployment in Pennsylvania did
15 not reach the 20% or 30% levels represented by the two upper ranges in this analysis.
16 Accordingly, the 20% and 30% unemployment scenarios are set aside for this discussion.
17 Even with this lowest (10% unemployment) scenario, the Center stated: “under an
18 optimistic scenario, in which employment rates return to pre-crisis levels during the
19 summer of 2020, annual SPM poverty rates are still projected to reach levels comparable
20 to the Great Recession.”¹³ On the other hand, employment rates, as we now know, did
21 *not* return to the pre-crisis levels in the summer of 2020.

22
23 This increase in Poverty is important for purposes of this proceeding because it is not
24 likely to be resolved in the short-term. The long-term danger arises because when people
25 lose their jobs, the long-lasting effects are not just on their income. Unemployment has a

¹² Id., at 4 - 5.

¹³ Forecasting Estimates of Poverty, supra note 10, at 9.

1 negative effect on workers' skills and education, even on their health—people who are
2 unemployed become sicker. Human capital, the skills of the overall workforce, decays
3 over time because of the loss of jobs. Moreover, with the COVID-19 pandemic, it is
4 generally recognized that many of the jobs that have been lost will never come back.
5 One recent research paper from the Becker Freidman Institute for Economics at the
6 University of Chicago estimates that between 32% and 42% of COVID-19 induced
7 layoffs will be permanent.¹⁴

8
9 **Q. IS THERE A SECOND ECONOMIC IMPACT THAT SHOULD BE**
10 **CONSIDERED IN THIS PROCEEDING?**

11 A. Yes. Nearly 40% of U.S. households, including nearly all low-wage workers, fall into a
12 category referred to as “liquid asset poor.” “Liquid asset poor” is a term-of-art that refers
13 to households who lack sufficient liquid assets to replace income in order to subsist at the
14 Poverty Level for three months in the absence of income. According to a Pew Research
15 Center report, “only about one-in-four (23%) [lower income adults] say they have rainy
16 day funds set aside that would cover their expenses for three months in case of an
17 emergency such as job loss, sickness or an economic downturn, compared with 48% of
18 middle-income and 75% of upper-income adults.”¹⁵

19

¹⁴ Davis et al. (June 2020). COVID-19 is also a Reallocation Shock, available at: https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf (last accessed July 7, 2021).

¹⁵ Parker, Horowitz and Brown (April, 2020). About Half of Lower-Income Americans Report Household Job or Wage Loss Due to COVID-19, Pew Research Center: Washington D.C. Available at <https://www.pewsocialtrends.org/2020/04/21/about-half-of-lower-income-americans-report-household-job-or-wage-loss-due-to-covid-19/> (last accessed July 7, 2021).

1 As the COVID-19 economic crisis moves into a more prolonged period, the impact of the
2 lack of savings will become increasingly pronounced, with low-income customers, in
3 particular, unable to draw on resources to pay day-to-day bills. A Pew Research Center
4 study published in late September reported that half of all adults who said they had lost a
5 job due to the coronavirus were still unemployed “roughly six months since the
6 coronavirus outbreak sent shockwaves through the U.S. economy.”¹⁶ Moreover,
7 according to Pew, even those who did not lose their job, but who nonetheless lost income,
8 were still in bad economic shape. Pew reported:

9 Of those who say they personally lost a job, half say they are still
10 unemployed, a third have returned to their old job and 15% are in a different
11 job than before. Lower-income adults who were laid off due to the
12 coronavirus are less likely to be working now than middle- and upper-income
13 adults who lost their jobs (43% vs. 58%). Adults ages 18 to 29 are less likely
14 than those 30 to 64 to have returned to their previous job.

15
16 Even if they didn’t lose a job, many workers have had to reduce their hours
17 or take a pay cut due to the economic fallout from the pandemic. About a
18 third of all adults (32%) say this has happened to them or someone in their
19 household, with 21% saying this happened to them personally. Most workers
20 who’ve experienced this (60%) are earning less now than they were before
21 the coronavirus outbreak, while 34% say they are earning the same now as
22 they were before the outbreak and only 6% say they are earning more.¹⁷

23
24 Pew continues, however, to note that “lower-income adults who lost their jobs because of
25 the coronavirus outbreak are more likely than those with middle or upper incomes to
26 remain unemployed. Some 56% of workers with lower incomes who lost their job

¹⁶ Kim Parker, Rachel Minkin and Jesse Bennett (September 24, 2020). Economic Fallout from COVID-19 Continues to Hit Lower-Income Americans the Hardest, at 1, Pew Research Center (Washington D.C.) (hereafter COVID-19 Economic Fallout), <https://www.pewsocialtrends.org/2020/09/24/economic-fallout-from-covid-19-continues-to-hit-lower-income-americans-the-hardest/> (last accessed July 7, 2021).

¹⁷ Id., at 5, 7, 8.

1 because of the coronavirus outbreak say they are currently unemployed, compared with
2 42% of middle- and upper-income adults.”¹⁸

3
4 This long-term job loss is significant because one of the long-term economic implications
5 of the job loss and other loss of income is just now becoming more evident. Economic
6 difficulties, particularly for lower-income households, will prevail for an extended period
7 of time not only because these households have been forced to use their emergency
8 savings, but also because they have been forced to incur substantial debt during the
9 COVID-19 pandemic to date. According to Pew:

10 Those affected by coronavirus related job loss or pay cuts are much more
11 likely than those who have not experienced these setbacks to have drawn on
12 additional resources. Fully 46% of adults who say they or someone in their
13 household have either been laid off or taken a pay cut as a result of the
14 coronavirus outbreak say they have used money from a savings or retirement
15 account to pay their bills, compared with 17% of those who have not
16 experienced these setbacks.¹⁹

17
18 As the COVID-19 economic crisis continues, these households are now running out of
19 savings to draw down. A Bankrate survey found that “of households with income below
20 \$50,000, about 44% say their savings has dropped, compared with 27% of those earning
21 above that amount. . .” Bankrate reported that 27% of Americans say that they now have
22 emergency savings that would last less than three months; 20% say their emergency

¹⁸ Id., at 7 – 8.

¹⁹ Covid-19 Economic Fallout, supra note 16, at 12.

1 savings would last from three to five months; and 25% say their emergency savings
2 would last six months.²⁰

3
4 **Q. WHAT DO YOU KNOW ABOUT PENNSYLVANIA IN PARTICULAR?**

5 A. The problems posed by consumers being forced to use credit and/or savings to pay
6 household bills during the pandemic can be seen from data specific to Pennsylvania. And
7 they continue through today. According to the Census Bureau’s PULSE Survey:

8 ➤ In Week 18 of the PULSE Survey, households using such resources had
9 substantially greater difficulties in meeting their household needs. While 22.8%
10 of Pennsylvania residents using credit cards or loans, and 32.2% drawing down
11 savings (or selling assets), found it “very difficult” to pay “usual household
12 expenses,” only 5.6% using their usual pre-pandemic income sources did so.
13 While 24.1% (money from savings or selling assets) to 22.4% (credit cards or
14 loans) of Pennsylvania residents found it “somewhat difficult” to pay their “usual
15 household expenses,” only roughly one-half that number (13.9%) using their
16 normal pre-pandemic incomes sources did so. In total, nearly half of
17 Pennsylvania residents who have been forced to use credit cards or loans (22.4%
18 + 22.8% = 45.2%), and more than half forced to draw down savings or sell assets
19 (24.1% + 32.2% = 56.3%), found it either “somewhat” or “very” difficult to pay
20 their usual household expenses during the pandemic (Week 18). In contrast, only
21 24.1% (credit cards or loans) to 14.7% using savings or selling assets found it
22 “not at all difficult” to pay their usual household expenses, compared to 57.0% of
23 those who can use their normal pre-pandemic income sources.

24
25 ➤ By Week 27, conditions had improved, but remained severe for Pennsylvania
26 residents. The Census PULSE Survey reports that while 15.8% of residents
27 relying on credit cards or loans, and 11.0% drawing down savings or selling
28 assets had a “very difficult” time paying for usual household expenses, only 4.3%
29 of residents using their regular pre-pandemic income sources did. Similarly,
30 while 41.6% of residents using credit cards or loans (25.8% + 15.8%), and 44.1%

²⁰ Survey: Nearly 3 times as many Americans say they have less emergency savings versus more since pandemic, available at <https://www.bankrate.com/banking/savings/emergency-savings-survey-2020/> (last accessed July 7, 2021).

1 (33.1% + 11.0%) reported having either a “somewhat difficult” or ‘very difficult’
2 time paying their usual household expenses, “only” 19.5% of persons using their
3 usual pre-pandemic source of income did. In the most recent week of the Census
4 PULSE Survey, in other words, nearly one-in-five Pennsylvania residents relying
5 on their regular pre-pandemic source of income were having difficulties paying
6 their bills.
7

8 Not all of the data showed improvement in the economic crisis facing Pennsylvania
9 residents. The percentage of Pennsylvania residents having either a “somewhat difficult”
10 or “very” difficult time in paying their usual household expenses ticked upwards in Week
11 27 (relative to Week 22) for both persons relying on their regular pre-pandemic source of
12 income (17.5% in Week 22; 18.5% in Week 27) and persons forced to rely on credit
13 cards or loans (37.7% in Week 22; 41.6% in Week 27).
14

15 Moreover, even though the *number* of persons being forced to rely on credit cards or
16 loans to pay usual household expenses dropped noticeably in Pennsylvania from Week 18
17 to Week 22 (a drop of 511,921 persons, from 2,503,191 in Week 18 to 1,991,270 in
18 Week 22), that decline did not continue through Week 27. Only 28,796 fewer persons
19 relied on credit cards or loans to pay usual household expenses in Week 27 (relative to
20 Week 22) (1,991,270 in Week 22 vis a vis 1,962,474 in Week 27), even as a higher
21 percentage of these persons reported having a somewhat difficult or very difficult time
22 paying their usual household expenses (37.7% in Week 22 versus 41.6% in Week 27).

Used in last seven days to meet spending needs	Total # Reporting	Not at all difficult	A little difficult	Somewhat difficult	Very difficult
PULSE Survey: Week 18:					
Regular income sources like those used before the pandemic	6,560,156	57.0%	23.5%	13.9%	5.6%
Credit cards or loans	2,503,191	24.1%	30.7%	22.4%	22.8%
Money from savings or selling assets	2,400,637	14.7%	29.0%	24.1%	32.2%
Borrowing from friends or family	987,231	1.4%	5.3%	15.8%	77.5%
Money saved from deferred or forgiven payments (to meet spending needs)	470,061	6.6%	14.1%	17.0%	62.2%
PULSE Survey: Week 22:					
Regular income sources like those used before the pandemic	6,035,061	54.4%	28.1%	12.6%	4.9%
Credit cards or loans	1,991,270	25.4%	36.8%	23.9%	13.8%
Money from savings or selling assets	1,865,258	20.6%	26.6%	26.4%	26.4%
Borrowing from friends or family	614,567	1.7%	6.6%	25.0%	66.7%
Money saved from deferred or forgiven payments (to meet spending needs)	256,368	9.7%	46.7%	28.4%	15.2%
PULSE Survey: Week 27					
Regular income sources like those used before the pandemic	6,444,148	58.9%	22.6%	14.2%	4.3%
Credit cards or loans	1,962,474	29.6%	28.8%	25.8%	15.8%
Money from savings or selling assets	1,557,580	18.7%	37.1%	33.1%	11.0%
Borrowing from friends or family	628,977	0.7%	27.4%	33.7%	38.2%
Money saved from deferred or forgiven payments (to meet spending needs)	276,096	21.3%	39.4%	24.7%	14.6%

1
2 The data above demonstrates the reasonableness of continuing PWSA’s existing COVID-
3 19 relief program that reaches into at least the moderate term. The economic crisis
4 associated with the COVID-19 pandemic is not likely to resolve itself in 2021. The need
5 to continue PWSA’s emergency COVID-19 responses is well-grounded in fact.
6

1 **Q. WHAT DO YOU RECOMMEND?**

2 A. As indicated above, I recommend that PWSA’s emergency COVID-19 relief efforts, as
3 agreed to in the Settlement of its last rate case, should be extended through the January 1,
4 2023 unless further modified upon petition of a party to this proceeding.

5

6 **Part 3. Addressing Low-Income Needs.**

7 **Q. PLEASE EXPLAIN THE PURPOSE OF THIS SECTION OF YOUR**
8 **TESTIMONY.**

9 A. In this section of my testimony, I consider the extent to which PWSA is adequately
10 addressing the affordability needs of the Authority’s low-income customers. In
11 reviewing data on the outreach to low-income customers, it is not merely the activities
12 that PWSA identifies that it is pursuing that should be the subject of review. It is the
13 *results* of those activities. The PUC has previously said (with respect to Columbia Gas)
14 that a utility should be prepared to “address these additional outreach efforts *and*
15 *corresponding results*. . .” (emphasis added).²¹

16

17 **A. Effective BDP Outreach.**

18 **Q. HAVE YOU HAD OCCASION TO REVIEW DATA TO INDICATE THE**
19 **EXTENT TO WHICH PWSA IS PROVIDING ADEQUATE BDP OUTREACH**
20 **TO ITS LOW-INCOME CUSTOMERS?**

²¹ Pennsylvania PUC v. Columbia Gas of Pennsylvania, Docket No. R-2020-3018835, Opinion and Order, at 174 (February 19, 2021).

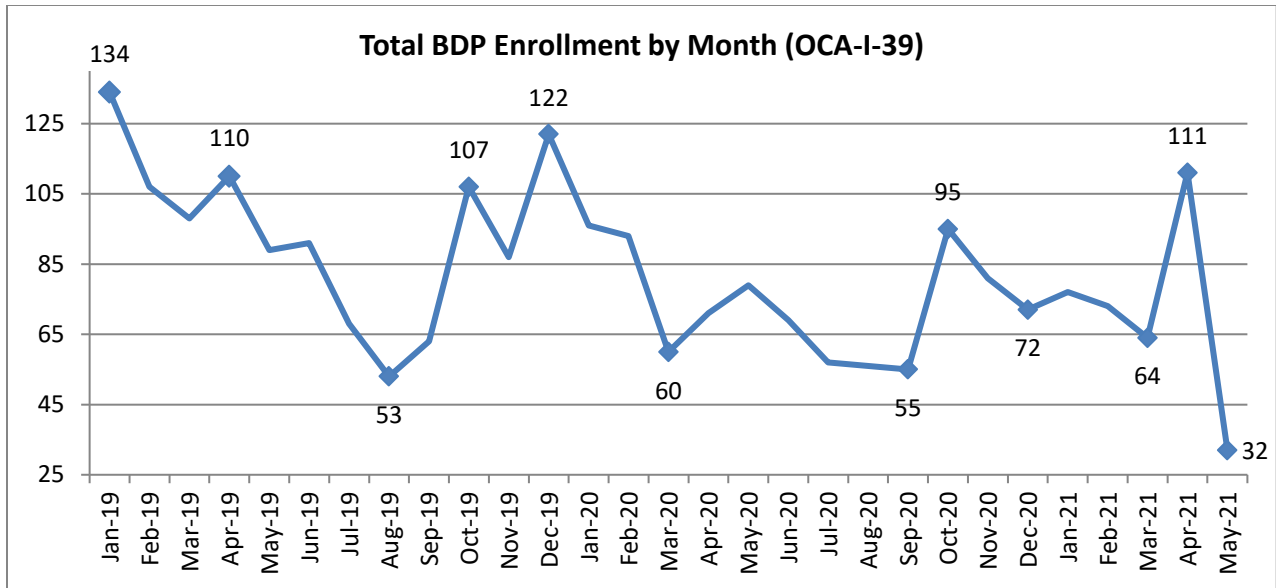
1 A. Yes. PWSA provides two numbers that are considerably different with respect to their
2 reported BDP participation rate. On the one hand, when asked to provide, by month for
3 each month January 2019 to present, “the number of BDP participants disaggregated by
4 Federal Poverty Level (0 – 50%; 50 – 100%; 100-150%),” PWSA provided data which,
5 when aggregated, shows a BDP participation of 2,370. (OCA-I-39). On the other hand,
6 when asked to provide a list of zip codes and, for each zip code, “the number of BDP
7 participants served in that Zip code,” PWSA provided data which, when aggregated,
8 shows a BDP participation of 4,421. (OCA-I-9). In addition, PWSA’s direct testimony
9 reports 4,530 BDP participants (PWSA St. 6, at 23). While no explanation is provided
10 for the differences between the various numbers, I accept the participation levels
11 presented in PWSA’s Direct Testimony (4,530) and response to OCA-I-9 (4,421) as
12 being the more accurate portrayal of total BDP participation.

13
14 Despite my acceptance of these two larger numbers as being a reasonable portrayal of
15 total BDP participation, in my discussion below, I will use the different numbers in two
16 different ways. First, when discussing the distribution of BDP participants by Poverty
17 Level, I use the data PWSA provided in response to OCA-I-9. When discussing the
18 distribution of BDP participants, the absolute numbers are not as important as the relative
19 percentages. If, for example, the data PWSA provided in response to OCA-I-9 represents
20 the monthly BDP *new enrollments* (rather than the total number of BDP participants as
21 requested), the percentage distribution remains important. Second, when I am talking
22 about the *overall* participation in BDP by Zip Code, I use the data PWSA provided in

1 response to OCA-I-9. By using these larger numbers, I do not reach invalid conclusions
2 by using an enrollment figure that is mistakenly low.

3
4 **Q. HAVE YOU HAD OCCASION TO CONSIDER BDP ENROLLMENT BY**
5 **MONTH?**

6 A. Yes. The Chart immediately below provides BDP enrollment by month as reported by
7 PWSA. (OCA-I-39). The Chart presents several important messages about the outcomes
8 of any effort by PWSA to enroll customers in its BDP. First, from January 2019 through
9 March 2020, there was a substantial decline in BDP enrollment. From January 2019
10 through August 2019, enrollment substantially fell, reaching only 53 in August. There
11 was a blip upward in October and December 2019 (to 107 and 122 respectively), before a
12 substantial drop-off. The significance in this decline lies in the fact that the decline is all
13 pre-COVID-19. The drop from 134 in January 2019 to 60 in March 2020 cannot be
14 attributed to the shutdowns occurring due to the pandemic. During the economic
15 shutdown in Pennsylvania from March through September 2020, it is not surprising that
16 the BDP enrollment was both low and constant. While in October, 2020, there was again
17 a one-month upward blip in enrollment, subsequent to that one-month increase, there has
18 been a reasonably steady decrease in BDP enrollment. Throughout the nearly 2½ year
19 period (January 2019 through May 2021 = 29 months), the periods of enrollment decline
20 (January – August 2019, December – September 2020, October 2020 – March 2021)
21 were both longer and steeper than the occasional month with an enrollment increase.
22 There is no constant performance by PWSA, let alone evidence of an increasingly
23 effective enrollment over time.



1

2 **Q. WHAT INFORMATION HAVE YOU REVIEWED ON PWSA’S LOW-INCOME**
 3 **OUTREACH?**

4 A. When asked to provide all criteria it employs to target outreach to low-income customers,
 5 PWSA responded that “having less than (sic) 6,000 confirmed low-income customers at
 6 this time, PWSA is continuing to broadly circulate its low-income outreach materials.”
 7 (OCA-I-23). PWSA has established no performance metrics by which to gauge the
 8 effectiveness of its outreach. When asked for its target enrollment levels, PWSA
 9 responded that “the PGH2O Cares team has not yet established target enrollment levels.”
 10 (United-I-13).

11

12 **Q. DOES PWSA NEED TO WORK MORE WITH THE COMMUNITY IN**
 13 **PROVIDING LOW-INCOME OUTREACH AND EDUCATION?**

14 A. Yes. While PWSA provided a list of “community partners,” (OCA-I-25), it did not use
 15 those community partners to target outreach. (OCA-I-24, OCA-I-26, OCA-I-27, OCA-I-
 16 44). For example, PWSA states broadly that “since its formation in mid-February, the

1 Cares team has also attended over a dozen virtual events and community meetings,”
2 (United-I-13), but when specifically asked to provide a schedule of all community
3 outreach events scheduled in October 2020 and later targeting low-income customers
4 with outreach for BDP, the date of the event, the location of the event, and the name of
5 each community partner co-sponsoring (co-hosting) the event, PWSA listed six such
6 “events,” with two of those being Pittsburgh City Council briefings, one being a Hispanic
7 Chamber of Commerce Speakers Series presentation, and one being a presentation to the
8 Civic Leadership Academy. (OCA-I-44). And while PWSA provided a list of over 150
9 “community partners” (OCA-I-25), when asked *which* community partners it has
10 “coordinated with related to outreach for PWSA’s customer assistance programs,” PWSA
11 stated “the Cares team has exchanged contact information with *two* organizational leaders
12 thus far and has set meeting dates to coordinate engagement of low-income customers in
13 their communities.” (United-I-13, emphasis added) (identifying the Hispanic Chamber of
14 Commerce and the Our Water Campaign).

15
16 **Q. WHAT DO YOU RECOMMEND?**

17 A. PWSA should be specifically directed to set quantitative goals for BDP annual
18 enrollment. As part of establishing those goals, PWSA should also be directed to develop
19 measurable metrics by which to measure the success of achieving its BDP enrollment
20 goals and to periodically report to the parties and to BCS on the Company’s performance
21 relative to those metrics. In the event that PWSA does not fulfill its enrollment goals, it
22 should be required to establish, within six months of a finding of a shortfall in
23 performance, a responsive action plan. Finally, the Company should be directed to report

1 to the parties and to BCS the affirmative steps it will take to increase the enrollment of
2 customers with income specifically at or below 50% of Poverty. I further elaborate on
3 this recommendation in my testimony below. These recommendations should be
4 construed as complementary, and not as competing, recommendations.

5
6 **B. Reaching the Population Below 50% of Poverty.**

7 **Q. HAVE YOU HAD OCCASION TO EXAMINE WHETHER PWSA**
8 **APPROPRIATELY TARGETS ITS LOWEST INCOME CUSTOMERS FOR BDP**
9 **OUTREACH?**

10 A. Yes. PWSA data shows that PWSA has a substantial under-representation of customers
11 in the lowest (at or below 50% of Poverty) and highest (100% to 150% of Poverty)
12 brackets of Federal Poverty Level, while having a substantial over-representation of
13 customers in the middle income bracket. According to PWSA, the Authority has
14 enrolled:

- 15 ➤ 560 customers with income at or below 50% of Poverty;²²
- 16 ➤ 925 customers with income between 50% and 100% of Poverty; and
- 17 ➤ 885 customers with income between 100% and 150% of Poverty.

18 (OCA-I-39). The Table below shows the data. According to PWSA (OCA-I-39), 23.6%
19 of its BDP participants had income less than 50% of Poverty, while 39.0% had income at
20 50 – 100% of Poverty. An additional 37.3% had income of 100 to 150% of Poverty.

²² PWSA Quigley indicates that of the 4,530 BDP participants she has identified, 506 receive the supplemental 20% discount (PWSA St. 6, at 23) (indicating that they have been identified as having income at or below 50% of Poverty). The difference between these two numbers is assumed to be a timing difference (i.e., data reported for two different time periods).

	0 – 50%	51 – 100%	101 – 150%
BDP participants	23.6%	39.0%	37.3%

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In contrast to the representation of the population under 50% of Poverty in PWSA’s BDP population, according to the 2019 Census, for the zip codes which PWSA identified as comprising its service territory, the disaggregation of population by Poverty Level within the PWSA service territory was:

- 32.0% of the population with income less than 150% of Poverty had income less than 50% of Poverty;
- 33.9 of the population with income less than 150% of Poverty had income between 50% and 100% of Poverty; and
- 34.1% of the population with income less than 150% of Poverty had income between 100% and 150% of Poverty.

The under-representation of the lowest income range (i.e., below 50% of Poverty) is of particular concern. Because of their low-income, these customers are most likely to have water bills that represent a high percentage of income (i.e., what is known as a “bill burden” or bill as a percentage of income). They are, accordingly, more likely to have the payment troubles that I have identified above. These high burdens are the problem addressed by enrollment in BDP. The customers in this lowest income range, however, are not enrolling in PWSA’s program in a percentage which reflects their percentage in the total population.

1 **Q. HAS THE COMMISSION PREVIOUSLY IDENTIFIED THIS UNDER-**
2 **ENROLLMENT OF HOUSEHOLDS WITH INCOME AT OR BELOW 50% OF**
3 **POVERTY AS A PROBLEM THAT UTILITIES SHOULD ADDRESS?**

4 A. Yes. In its Final Order adopting the Revised CAP Policy Statement in 2019 (for energy
5 utilities), the PUC stated quite explicitly that:

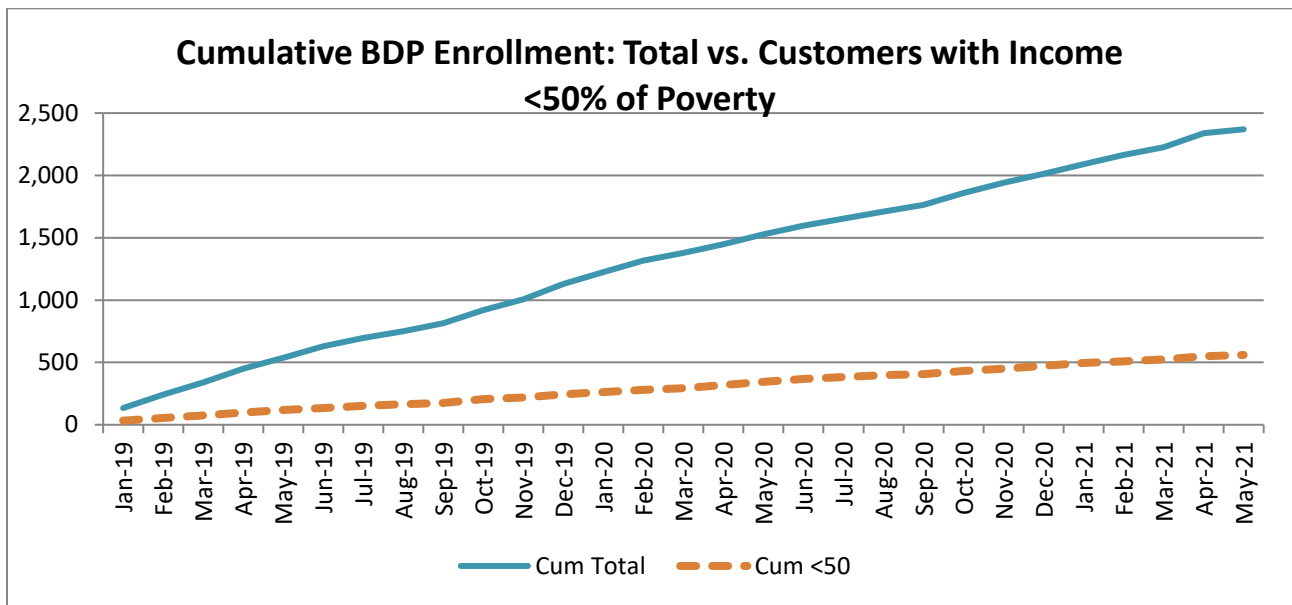
6 While utilities have flexibility as to the contents of their plans, the plans
7 should reflect focused consumer education and outreach efforts, tailored to
8 the demographics of their individual service territories, spanning the duration
9 of the universal service plan period. In particular, these plans should identify
10 efforts to educate and enroll eligible and interested customers at or below
11 50% of the FPIG.
12

13 Final Order, at 79, Docket No. M-2019-3012599 (emphasis added). While the CAP
14 addresses electric and natural gas utilities, there is no reason to believe the Commission
15 would have less concern for these Extreme Poverty customers in the water and
16 wastewater industries. One population that was identified as being of particular concern
17 in PWSA’s last rate case involved customers with income at or below 50% of the Poverty
18 Level. These customers in Extreme Poverty –“Extreme Poverty” is a term-of-art,
19 referring to households with income at or below 50% of Poverty – have particular
20 affordability problems due to their low-incomes and the mismatch between incomes and
21 utility bills yielding high utility burdens (i.e., bills as a percentage of income).

22
23 **Q. HAVE YOU EXAMINED BDP ENROLLMENT DATA FOR THE BELOW 50%**
24 **OF POVERTY CUSTOMER BASE?**

25 A. Yes. Despite having acknowledged the need to pay particular attention to the
26 affordability needs of customers with annual income at or below 50% of Poverty,

1 including proposing to further increase the level of BDP discount to this population of
 2 customers in this proceeding, PWSA is not making progress with enrolling those Extreme
 3 Poverty customers in the Bill Discount Program. The Chart below shows the cumulative
 4 total BDP enrollment as compared to the total BDP enrollment of customers with income
 5 below 50% of Poverty as reported by PWSA. (OCA-I-39). The upward slope of the
 6 increase in total enrollment is clearly sharper than the upward slope of the increase in
 7 enrollment of those with income below 50% of Poverty. The gap between cumulative
 8 enrollment for BDP participation as a whole and for BDP participation for the population
 9 with income below 50% of Poverty is widening over time.



10
 11 If PWSA were to enroll BDP participants with income at or below 50% of Poverty at the
 12 same percentage as the population in that income range in each Zip Code the Authority
 13 serves, it would enroll 8,817 customers with these incomes. Even assuming PWSA
 14 would not enroll 100% of customers in this income range, it would enroll far more of
 15 these Extreme Poverty customers than it has enrolled to date. If PWSA enrolled 30% of
 16 its Extreme Poverty customers, for example, it would enroll more than 2,600 Extreme

Poverty customers ($8,817 \times 0.30 = 2,645$), nearly 2,100 more than it has enrolled to date ($2,645 - 560 = 2,085$).

Q. HAVE YOU REVIEWED OTHER DATA IN ASSESSING THE LOW ENROLLMENT OF THE POPULATION WITH INCOME LESS THAN 50% OF POVERTY?

A. Yes. First, after matching PWSA BDP participation rates for zip codes with Census data, I compared the number of households receiving either Food Stamps (SNAP) or Cash Public Assistance in PWSA's service territory to the number of customers enrolled in BDP. If PWSA enrolled its customers in BDP at the same rate as households are currently enrolled in Food Stamps/Cash Public Assistance into BDP, the Authority would have an additional 13,000 BDP participants. When I examine the 10 Zip Codes with the highest number of Food Stamp/Public Assistance participation, I find that if PWSA enrolled its customers in BDP at the same rate, it would enroll an additional 10,000 BDP participants.

It is not merely the total that indicates the problem, however. A problem with targeted outreach is seen when one reviews individual zip codes. A sample of such zip codes is presented in Table 9 below; these Zip Codes are those ten with the highest percentage of population having income at or below 50% of Poverty. In those ten Zip Codes standing alone, if PWSA were to enroll its customer base in the BDP at the same rate as household enroll in Food Stamps/Public Assistance,²³ PWSA would enroll an additional 7,227 BDP

²³ Both such programs have maximum income eligibility lower than the maximum income eligibility for BDP.

1 participants. This enrollment figure does not represent the enrollment of all Food
 2 Stamp/Public Assistance recipients in the BDP. It simply indicates what the BDP
 3 enrollment would be if PWSA customers were enrolled at a rate which reflects the
 4 percentage of the population enrolling in Food Stamps/Public Assistance in PWSA’s
 5 service territory.

Table 9. Number of PWSA Additional BDP Participants if Enrolled at Percent of Food Stamp and/or Cash Public Assistance Participants (by 10 selected Zip Codes with largest percent <50% FPL)

Zip Code	<i>Additional</i> BDP Participants if Enrollment at Food Stamp/PA Recipients Pct	Existing BDP Participants
15203	431	88
15204	689	214
15207	818	269
15208	846	196
15212	1,498	602
15213	248	95
15214	728	279
15217	404	137
15219	1,517	276
15232	48	11
Total	7,227	2,167

6

7 **Q. HOW DOES PWSA TARGET CUSTOMERS WITH INCOME AT OR BELOW**
 8 **50% OF POVERTY LEVEL WITH OUTREACH?**

9 A. PWSA makes no specific efforts to identify efforts to educate and enroll eligible and
 10 interested customers at or below 50% of Poverty. In discovery, OCA asked PWSA to
 11 “provide a detailed explanation of how PWSA has identified customers having income at
 12 or below 50% of Federal Poverty Level for purposes of receiving outreach targeted to

1 customers with income at or below 50% of Poverty Level. If groups of customers rather
2 than specific individual customers have been targeted for outreach directed to customers
3 with income at or below 50% of Poverty, please provide an explanation of how and why
4 such groups of customers were targeted.” PWSA explained that rather than seeking to
5 identify efforts to educate and enroll eligible and interested customers at or below 50% of
6 Poverty, it waits until someone has enrolled in BDP and then, if their income is below
7 50% of Poverty, PWSA provides them the bigger discount to which they are entitled.
8 (OCA-I-41). When asked to provide examples of outreach targeted to customers with
9 income at or below 50% of Poverty, PWSA indicated that the outreach to this population
10 is identical to the outreach to the population as a whole. (OCA-I-40, citing OCA-I-22).

11
12 **Q. HOW MIGHT PWSA TARGET OUTREACH TO ITS LOWEST INCOME**
13 **CUSTOMERS?**

14 A. There are a number of options. PWSA could reasonably target outreach to the
15 geographic areas which have the largest percentage of population with income at or
16 below 50% of Poverty. For example, if PWSA targeted outreach to the 10 with the
17 highest number of population with income less than 50% of Poverty, it would reach more
18 than half (53%) of the total population with income that low. If it targeted only the five
19 (5) zip codes with the largest population with income below 50% of Poverty, it would
20 reach more than one-third (32.9%) of the population with the lowest income.

21
22 PWSA could, alternatively, reasonably target outreach to the geographic areas which
23 have the largest populations of customers with income sources associated with the lowest

1 levels of income by targeting Zip Codes with high numbers of Supplemental Security
2 Income (SSI) recipients. In 2020, the maximum SSI benefit was \$783, or 74% of the
3 Federal Poverty Level. The average SSI benefit, however, was only \$446. If one
4 compares the 10 PWSA Zip Codes with the highest numbers of SSI recipients to the 10
5 Zip Codes with the highest percentage of population with income less than 50% of
6 Poverty, there is an overlap of six (i.e., six of the Zip Codes with the highest percentage
7 of SSI recipients also have the highest percentage of customers with income below 50%
8 of Poverty).

9
10 PWSA could also reasonably target outreach to geographic areas which have the largest
11 populations receiving Food Stamps or Public Assistance. If one compares the 10 Zip
12 Codes with the largest Food Stamp/Public Assistance populations, there again is an
13 overlap of six with the Zip Codes with the highest percentage of population with income
14 less than 50% of Poverty.

15
16 **Q. WHAT DO YOU RECOMMEND?**

17 A. I previously explained the need for PWSA to set measurable enrollment goals and for
18 PWSA to periodically report its progress toward achieving those goals. As part of that
19 recommendation, given that PWSA has generally low overall BDP enrollment of low-
20 income customers in its service territory and, in particular, has not developed targeted
21 outreach to potential BDP participants with income less than 50% of Poverty, I
22 recommend PWSA be directed to submit a detailed three-year outreach plan to the
23 Bureau of Consumer Services within six months of a final order in this proceeding. This

1 outreach plan should include specific quantitative outcome goals regarding (1) the
2 expansion of the identification of Confirmed Low-Income customers; (2) the expansion
3 of BDP enrollment; and (3) the expansion of BDP enrollment by customers with income
4 at or below 50% of Poverty. The outreach plan should include specifically identified
5 activities directed toward reaching customers with income at or below 50% of Poverty.
6 The outreach plan should include a detailed description of community-based
7 organizations with whom PWSA will work, including but not limited to, grassroots
8 community-based organizations, food banks, schools, Head Start and other preschool
9 programs. PWSA should be directed to provide regular reports to the Bureau of
10 Consumer Services on its performance with respect to the measureable goals established
11 in the Plan.

12
13 **Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?**

14 **A.** Yes, it does.

Appendix A:
Abbreviated Colton Vitae

Roger Colton
Fisher, Sheehan & Colton
Public Finance and General Economics
Belmont, MA

* * * * *

EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Regulatory Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

PROFESSIONAL AFFILIATIONS:

- Past Chair: Belmont Zoning By-law Review Working Committee (climate change)
- Member: Board of Directors, Massachusetts Rivers Alliance
- Columnist: Belmont Citizen-Herald
- Producer: Belmont Media Center: BMC Podcast Network
- Host: Belmont Media Center: Belmont Journal
- Member: Belmont Town Meeting
- Vice-chair: Belmont Light General Manager Screening Committee
- Past Chair: Belmont Goes Solar
- Coordinator: BelmontBudget.org (Belmont’s Community Budget Forum)
- Coordinator: Belmont Affordable Shelter Fund (BASF)
- Past Chair: Belmont Solar Initiative Oversight Committee
- Past Member: City of Detroit Blue Ribbon Panel on Water Affordability
- Past Chair: Belmont Energy Committee
- Member: Massachusetts Municipal Energy Group (Mass Municipal Association)

Past Chair: Housing Work Group, Belmont (MA) Comprehensive Planning Process
 Past Member: Board of Directors, Belmont Housing Trust, Inc.
 Past Chair: Waverley Square Fire Station Re-use Study Committee (Belmont MA)
 Past Member: Belmont (MA) Energy and Facilities Work Group
 Past Member: Belmont (MA) Uplands Advisory Committee
 Past Member: Advisory Board: Fair Housing Center of Greater Boston.
 Past Chair: Fair Housing Committee, Town of Belmont (MA)
 Past Member: Aggregation Advisory Committee, New York State Energy Research and Development Authority.
 Past Member: Board of Directors, Vermont Energy Investment Corporation.
 Past Member: Board of Directors, National Fuel Funds Network
 Past Member: Board of Directors, Affordable Comfort, Inc. (ACI)
 Past Member: National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
 Past Member: Editorial Advisory Board, International Library, *Public Utility Law Anthology*.
 Past Member: ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
 Past Member: National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
 Past Member: National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

PROFESSIONAL ASSOCIATIONS:

National Association of Housing and Redevelopment Officials (NAHRO)
 National Society of Newspaper Columnists (NSNC)
 Association for Enterprise Opportunity (AEO)
 Iowa State Bar Association
 Energy Bar Association
 Association for Institutional Thought (AFIT)
 Association for Evolutionary Economics (AEE)
 Society for the Study of Social Problems (SSSO)
 Association for Social Economics

BOOKS

Colton, *et al.*, *Access to Utility Service*, National Consumer Law Center: Boston (4th edition 2008).

Colton, *et al.*, *Tenants' Rights to Utility Service*, National Consumer Law Center: Boston (1994).

Colton, *The Regulation of Rural Electric Cooperatives*, National Consumer Law Center: Boston (1992).

BOOK CHAPTERS

Colton (2018). The equities of efficiency: distributing energy usage reduction dollars, Chapter in Energy Justice: US and International Perspectives (Edited by Raya Salter, Carmen Gonzalez and Elizabeth Ann Kronk Warner), Edward Elgar Publishing (London, England).

JOURNAL PUBLICATIONS

65 publications in industry and academic journals, primarily involving utility regulation and affordable housing. (list available upon request)

TECHNICAL REPORTS

200 technical reports for public-sector and private-sector clients (list available upon request)

JURISDICTIONS IN WHICH EXPERT WITNESS PROVIDED

- | | | |
|-----------------------------|---------------------------|---------------------------|
| 1. Maine | 17. Mississippi | 33. Colorado |
| 2. New Hampshire | 18. Tennessee | 34. New Mexico |
| 3. Vermont | 19. Kentucky | 35. Arizona |
| 4. Massachusetts | 20. Ohio | 36. Utah |
| 5. Massachusetts | 21. Indiana | 37. Idaho |
| 6. Rhode Island | 22. Michigan | 38. Nevada |
| 7. Connecticut | 23. Wisconsin | 39. Washington |
| 8. New Jersey | 24. Illinois | 40. Oregon |
| 9. Maryland | 25. Minnesota | 41. California |
| 10. Pennsylvania | 26. Iowa | 42. Hawaii |
| 11. Washington D.C. | 27. Missouri | |
| 12. Virginia | 28. Arkansas | Canadian Provinces |
| 13. North Carolina | 29. Texas (Federal Court) | 1. Nova Scotia |
| 14. South Carolina | 30. South Dakota | 2. Ontario |
| 15. Florida (Federal Court) | 31. North Dakota | 3. Manitoba |
| 16. Alabama | 32. Montana | 4. British Columbia |

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Direct Testimony, OCA Statement 4, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 8, 2021
*312548

Signature:



Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission, et al.:	:	
	:	
v.	:	Docket Nos.
	:	
	:	R-2021-3024773 (Water)
Pittsburgh Water and Sewer Authority	:	R-2021-3024774 (Wastewater)
	:	R-2021-3024779 (Stormwater)

REVISED DIRECT TESTIMONY

OF

BARBARA R. ALEXANDER

Barbara Alexander Consulting LLC

ON BEHALF OF THE

OFFICE OF CONSUMER ADVOCATE

July 8, 2021

Revised July 23, 2021

1 **I. INTRODUCTION AND SUMMARY OF ISSUES**

2
3 Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

4 A. My name is Barbara R. Alexander. I am the sole member of Barbara Alexander Consulting
5 LLC. My address is 83 Wedgewood Dr., Winthrop, ME 04364. I appear in this case as a
6 witness on behalf of the Office of Consumer Advocate (OCA).

7 Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS.

8 A. I have a 30-year experience as an expert in consumer protection, service quality, and low
9 income programs for public utilities and the regulation of retail alternative energy suppliers
10 in markets that have adopted restructuring for electric and/or natural gas supply service. I
11 was the Director of the Consumer Assistance Division for the Maine Public Utilities
12 Commission from 1986-1996 and have operated my own consulting practice for public
13 advocates and consumers since that time. I have testified in over 30 U.S. and Canadian
14 jurisdictions, including testimony before the Pennsylvania Public Utility Commission in
15 many proceedings. My C.V. attached to this testimony as Exhibit BA-1 lists all my
16 publications and testimony associated with my consulting practice.

17 Q. HAVE YOU PREVIOUSLY FILED TESTIMONY REGARDING THE PITTSBURGH
18 WATER AND SEWER AUTHORITY?

19 Q. Yes. I filed Direct and Surrebuttal Testimony on behalf of the OCA in the Pittsburgh Water
20 and Sewer Authority (PWSA or Authority) base rate cases in 2018 and 2020. In addition,
21 I filed Direct, Surrebuttal, and Supplemental Surrebuttal Testimony on behalf of the OCA
22 in response to the Compliance Plan filed by Pittsburgh Water and Sewer Authority (PWSA
23 or Authority) in Docket Nos. M-2018-2640802 and M-2018-2640803. My testimony in

1 those proceedings was directed to the PWSA's compliance with the Commission's
2 consumer protection regulations and policies applicable to residential customers and the
3 service quality and customer service performance provided by PWSA to its customers.

4 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

5 A. I am filing Testimony on behalf of the OCA to address issues relating to the adequacy and
6 reasonableness of certain aspects of PWSA's quality of service, its customer service
7 performance and compliance with the Commission's consumer protection requirements,
8 its customer education programs, and review PWSA's tariff language for both water,
9 sewer, and stormwater submitted as part of the rate case filing on these issues. These issues
10 are important themselves, but particularly so in this case given the magnitude of PWSA's
11 proposed rate increases.

12 Q. PLEASE SUMMARIZE PWSA'S RATE INCREASE PROPOSALS.

13 A. On April 13, 2021, PWSA filed Supplement No. 7 to Tariff Water – Pa. P.U.C. No. 1,
14 Supplement No. 6 to Tariff Wastewater – Pa. P.U.C. No. 1, and Tariff Stormwater– Pa.
15 P.U.C. No. 1 to become effective June 12, 2021. The Authority is proposing a rate increase,
16 phased in over two years, that will: raise PWSA's total operating revenues for water service
17 by approximately \$12.6 million, or 10% in 2022 and by approximately \$12.9 million, or
18 9.3% in 2023; reduce PWSA's total annual operating revenues for wastewater service by
19 approximately \$7.8 million, or 10.6% in 2022 and by approximately \$7.5 million, or 11.4%
20 in 2023; and establish initial total annual operating revenues for stormwater service of
21 approximately \$17.8 million, or 3,118.3% in 2022 and increase those by approximately
22 \$5.9 million, or 32.3% in 2023. Under the Authority's proposal, a typical residential water,
23 wastewater conveyance, and stormwater service customer using 3,000 gallons per month

1 and charged the base rate for stormwater services would see their total monthly bill increase
2 from \$79.34 to \$87.19 per month or by 9.89% in 2022 and increase from \$87.19 to \$91.05
3 or by 4.43% in 2023. For the water portion, a residential customer would see their monthly
4 bill increase from \$54.36 to \$58.09 in 2022 and from \$58.09 to \$61.79 in 2023. For the
5 wastewater portion, a residential customer would see their monthly bill decrease from
6 \$24.98 to \$23.14 in 2022 and from \$23.14 to \$21.30 in 2023. PWSA proposes to phase-in
7 their proposed stormwater rates. As proposed, residential customers will be charged the
8 following stormwater fees on their monthly bills in 2022 and 2023: customers with 0.5
9 ERU (Tier 1) of impervious surface on their property will be charged a stormwater fee of
10 \$2.99 per month in 2022 and \$3.98 in 2023, customers with 1 ERU (Tier 2) of impervious
11 surface on their property will be charged a stormwater fee of \$5.96 in 2022 and \$7.95 in
12 2023, and customers with 2 ERUs (Tier 3) of impervious surface on their property will be
13 charged a stormwater fee of \$11.93 in 2022 and \$15.90 in 2023. This stormwater fee would
14 only apply to PWSA customers with property located within the City of Pittsburgh.

15 Q. DID PWSA’S ESTIMATED BILL IMPACTS FOR ITS RATE CASE INCLUDE THE
16 IMPACT OF ALLEGHENY COUNTY SANITARY AUTHORITY CHARGES
17 (ALCOSAN) THAT ARE BILLED AND COLLECTED BY PWSA?

18 Q. A. PWSA’s public notices for this rate case to their customers identified PWSA
19 regulated charges and did not include those billed by PWSA on behalf of ALCOSAN.¹
20 This customer notice about PWSA’s rates is, therefore, different from PWSA’s sample bill
21 presented on its website that does include ALCOSAN charges. I realize that PWSA does
22 not have authority over the establishment of ALCOSAN’s charges but it should have made

¹ PWSA Vol. I, Filing Requirements, Tab 2 (Notice of Proposed Rate Changes) and PWSA Response to OCA-III-1.

1 clear that the bill impacts associated with its rate increase proposal do not include the
2 ALCOSAN charges, which change once annually, and provide information on
3 ALCOSAN's current charges. Going forward, I recommend that PWSA make that change
4 to its base rate case notices. The most recent rate increase as of January 1, 2021, was 7%.²
5 The combination of the ALCOSAN and PWSA rates is an important consideration when
6 evaluating the overall rate increase and impact on affordability of service. My
7 recommendation also ensures that customers are informed of the overall impact of both
8 PWSA and ALCOSAN charges.

9 Q. DO YOU HAVE EXHIBITS ATTACHED TO YOUR TESTIMONY?

10 A. Yes. I attach the following exhibits to my testimony:

- 11 ■ Exhibit BA-1: Professional Qualifications and Experience of Barbara R. Alexander
- 12 ■ Exhibit BA-2: PWSA Response to OCA-III-12, Attachment H (Customer Bill with
13 personal identifying information deleted)
- 14 ■ Exhibit BA-3: PWSA Response to OCA-X-7 ("Avoid Water Shut Off by Contacting
15 Us Now")

16 Q. PLEASE EXPLAIN THE RELATIONSHIP OF YOUR TESTIMONY TO THE STAGE
17 1 AND STAGE 2 COMPLIANCE PROCEEDINGS.

18 A. PWSA came under the Commission's jurisdiction in 2018 and was faced with a significant
19 number of complex tasks to change operations, policies, and procedures to comply with
20 the statutes and regulations applicable to public utilities. PWSA's Compliance Plan and
21 the Supplement to the Compliance Plan addressed the Commission's Directed Questions

² PWSA Response to OCA-II-38.

1 and certain provisions of the settlement of the base rate case³ relating to PWSA's
2 residential billing, collection, and service termination policies and practices, as well as
3 issues relating to PWSA's customer service performance. Certain issues were identified
4 as requiring to be resolved in Stage 1 and others delayed until Stage 2. Pursuant to the
5 Expedited Joint Motion for Extension of Commission-Created Deadlines submitted by the
6 parties on May 13, 2019, and the Secretarial Letter issued on May 15, 2019 granting the
7 Expedited Motion, certain customer service issues have now been moved from Stage 1 to
8 Stage 2 of PWSA's Compliance Plan proceeding, namely issues relating to collection of
9 overdue bills and termination of service. The Stage 1 issues were resolved in a settlement
10 (approved in relevant part by the Commission) that included commitments by PWSA to
11 demonstrate its compliance with various provisions of the Commission's regulations and,
12 with respect to termination of service, an interim process that remains in effect until the
13 Stage 2 proceeding is completed. PWSA also committed to file Quarterly Reports to
14 provide information on its ongoing implementation of its commitments in the settlement
15 of Stage 1 issues.

16 Q. HOW DO THE STAGE 1 AND 2 PROCEEDINGS RELATE TO YOUR TESTIMONY
17 IN THIS PROCEEDING?

18 A. The following issues have been moved to Stage 2 for consideration of PWSA's compliance
19 with Chapter 14 of the Public Utility Code and Chapter 56 of the Commission's
20 regulations:

- 21 ■ The language, format, and method of providing suspension and termination notice

³ See Pa. P.U.C. v. Pittsburgh Water and Sewer Authority, Docket Nos. R-2018-3002645 (water) and R-2018-3002647 (wastewater) ("Settlement").

1 pursuant to Chapter 14 and Chapter 56.

- 2 ▪ PWSA’s compliance with the Discontinuance of Services to Leased Premises Act
3 (DSLPA).⁴
- 4 ▪ PWSA’s plan for collections; to include strategies to reduce overall delinquencies and
5 to ensure collections practices for residential customers are consistent with legal
6 requirements.
- 7 ▪ Personal contact: Per further discussion with the parties, PWSA will: (1) evaluate
8 adding additional information in the quarterly report in line with the examples set forth
9 in Section III.MM.2.a.iii.b of the Stage 1 Compliance Plan Settlement Agreement; (2)
10 assess whether hiring a third party contractor to knock on the door might be a viable
11 option; and, (c) will attempt to specifically reach out to other Pittsburgh utilities to see
12 if they can provide information about how they address safety concerns related to
13 knocking on the door for termination process.

14 Stage 2 was only recently initiated. Several workshops have been scheduled and issues
15 that remain in dispute will be sent to an Administrative Law Judge for a litigated
16 proceeding and final resolution. I will refrain from opining on PWSA’s implementation of
17 these issues in detail in my testimony, but I wish to make it clear that I disagree with
18 PWSA’s current termination policies and procedures in several areas. Because compliance
19 with termination related issues is crucial to the examination of any utility’s consumer
20 protection policies and programs in the context of this proposed base rate case, I raise some
21 of these issues in this testimony primarily to document that connection and I am hopeful
22 that these Stage 2 issues can be resolved promptly.

⁴ 66 Pa. C.S. §§ 1521-1533.

1 Q. PLEASE COMMENT ON PWSA’S QUARTERLY REPORT, APPENDIX B, “TITLE 52
2 SECTIONS WHERE PWSA BELIEVES IT IS CURRENTLY IN COMPLIANCE.”

3 A. As part of its Compliance Plan Quarterly Report PWSA provides updated information on
4 its commitments reflected in the Compliance Plan Settlement. Appendix B is entitled,
5 “Title 52 Sections where PWSA believes it is currently in compliance.” This list includes
6 Chapters 56 and 65 requirements that reflect essential consumer protections that public
7 utilities and water and sewer utilities must provide to their customers. PWSA has listed
8 termination-related compliance issues in this Appendix that are not yet resolved and that
9 are the subject of the future Stage 2 proceeding. The same concerns relate to PWSA’s
10 landlord/tenant collection policies considering the Authority’s policy not to allow any
11 individual other than the owner of the property to become a “customer.”⁵ I bring this to
12 the attention of the Commission to ensure that statements of compliance with Chapters 56
13 and 65 should not be assumed to include the disputed issues relating to PWSA’s
14 termination of service procedures and policies. Specifically, the interim procedure that
15 PWSA agreed to implement concerning termination of service does not substitute for
16 compliance with the requirement to attempt personal contact with the customer
17 immediately prior to termination of service.

18 Q. HOW DOES THE COVID-19 PANDEMIC IMPACT YOUR TESTIMONY IN THIS
19 PROCEEDING?

20 A. PWSA, like other Pennsylvania utilities, halted its reliance on termination of service as
21 their primary means of collecting overdue bills with the onset of the Pandemic in early

⁵ This policy reflects PWSA’s stated authority to collect any overdue amount via a lien that is linked to the owner of the property.

1 2020 in response to Emergency orders issued by the Governor and the Commission.
2 PWSA's testimony in this rate case describes how it has responded to this restriction on
3 termination of service by instituting alternative or "softer" communications with their
4 customers and offering more generous payment plans for those affected by the Pandemic.
5 PWSA has also adopted several initiatives to identify and enroll eligible customers in their
6 Residential Discount Program. However, this halt in termination and the use of alternative
7 means of communications with customers about overdue bills impacts the analysis of the
8 Authority's compliance with Chapter 56 and its service quality performance that would
9 normally not be impacted by such a drastic change in its operations. In short, the 2020
10 year does not reflect normal customer service operations. And, due to the dramatic
11 reduction in termination activities and resulting volume of customer calls, 2020 activities
12 do not reflect historical performance of the customer call center, and termination practices.
13 Finally, this unique situation has not allowed an evaluation of the efficacy of PWSA's
14 agreement to implement its alternative policies in lieu of full compliance with Chapter 56's
15 termination requirements.

16 Q. HAS PWSA RESUMED TERMINATION UNDER THE COMMISSION'S
17 DIRECTIVES ISSUED IN MARCH 2021 THAT ALLOW SUCH RESUMPTION WITH
18 ADDITIONAL PAYMENT OPTIONS?

19 A. At the time of the filing of the rate case, PWSA Witness Julie Quigley stated that
20 terminations had not yet resumed for residential customers and did not provide any
21 timetable for such resumption.⁶ During the initial phase of discovery, PWSA was unable

⁶ PWSA St. No. 6, at 6. Ms. Quigley states that normal collection activities have been initiated for non-residential customers and that PWSA is pursuing softer collection strategies for residential customers.

1 to make any commitment as to when the Authority would resume termination of service or
2 under what PWSA-specific criteria.⁷ However, PWSA resumed issuing formal notices of
3 termination to certain categories of residential customers in June and is likely to initiate
4 actual termination of service pursuant to those notices soon.⁸ As a result, it is difficult to
5 evaluate PWSA's compliance with and customer service performance associated with
6 many essential Chapter 56 policies and requirements that are linked to termination of
7 service.

8 Q. PLEASE DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.

9 A. My testimony will examine certain aspects of PWSA's quality of service and customer
10 service performance as part of the Authority's proposed rate increase. My testimony does
11 not address issues relating to PWSA's quality of service related to the design and operation
12 of the water distribution and sewer collection system and Commission regulations under
13 Chapter 65. OCA witness Terry Fought addresses these issues in OCA Statement 6. I will
14 then make recommendations for improvement and reforms in several areas that should be
15 ordered as part of this base rate case. I recommend that the Commission require PWSA to
16 meet specific performance standards, many of which it has adopted as internal objectives
17 as part of its implementation of Commission jurisdiction and its more customer-oriented
18 focus. I also provide my review of compliance with Chapter 56 and consumer protection
19 issues in PWSA's proposed water, sewer, and stormwater tariffs.

⁷ PWSA Response to OCA-III-8 and III-9.

⁸ PWSA Response to OCA-X-8.

1 **II. PWSA'S SERVICE QUALITY AND CUSTOMER SERVICE PERFORMANCE**

2
3 Q. WHAT ISSUES WILL YOU EXAMINE WITH RESPECT TO PWSA'S QUALITY OF
4 SERVICE AND CUSTOMER SERVICE PERFORMANCE?

5 A. I will present information on PWSA's performance in the following areas:

- 6 ▪ Call Center Performance
- 7 ▪ Response Time to Leaks and Outage Restoration
- 8 ▪ Customer Complaint Response and Resolution
- 9 ▪ Customer Billing Accuracy and Timeliness
- 10 ▪ PWSA Bill Formats
- 11 ▪ PWSA's Collection of Previously Unpaid Bills (Liens and Jordan Tax Service)
- 12 ▪ Field Operations and Keeping Customer Appointments
- 13 ▪ Termination of Service

14 Q. WHAT IS THE SOURCE OF YOUR DATA ON THE ABOVE INDICATORS FOR
15 CUSTOMER SERVICE PERFORMANCE?

16 A. My information concerning PWSA's quality of service and customer service performance
17 is based on PWSA's monthly internal reports that measure call center performance,
18 complaint activity, billing, and metering performance, PWSA's response to data requests
19 in this proceeding, and PWSA's Compliance Plan Quarterly Reports. PWSA maintains a
20 publicly available set of historical performance data for customer service and field
21 operations (as well as other indicia related to its infrastructure investments) on its web
22 portal. The 2020 data is summarized in an annual report.⁹ The monthly performance data

⁹ <https://www.pgh2o.com/sites/default/files/2021-05/2020%20YIRv6-Final.pdf>

1 is available from January 2018 through the current month.¹⁰

2 Q. PLEASE DISCUSS THE PERFORMANCE OF PWSA'S CUSTOMER CALL CENTER.

3 A. PWSA relies on a customer call center as the main method by which customers can
4 communicate individually with PWSA. While PWSA has one office in downtown
5 Pittsburgh, that office is not intended to provide a widely available means of allowing its
6 approximately 110,000 customers to report an outage, talk about their bill, file a complaint,
7 ask for a payment plan, or respond to a termination notice. And even that office is currently
8 closed because of the COVID-19 pandemic emergency.¹¹ Therefore, the operation of its
9 call center is crucial to the Authority's ability to deliver a reasonable level of customer
10 service. While the call center has experienced periods of extremely poor performance in
11 terms of its ability to answer calls in a timely manner and avoid a significant abandonment
12 rate (the percentage of calls in the queue to be answered by a customer service
13 representative that are abandoned due to a long wait time), the current level of performance
14 has significantly improved since January 2019. The following is a summary of the key
15 indicators¹²:

Year	Percent Calls Answered in 60 Seconds	Abandonment Rate	Average Speed of Answer (Contact Center)
2018	N/A	14.9%	3:69
2019	79.71%	2.65%	1:11
2020	94.71%	1.04%	0:28

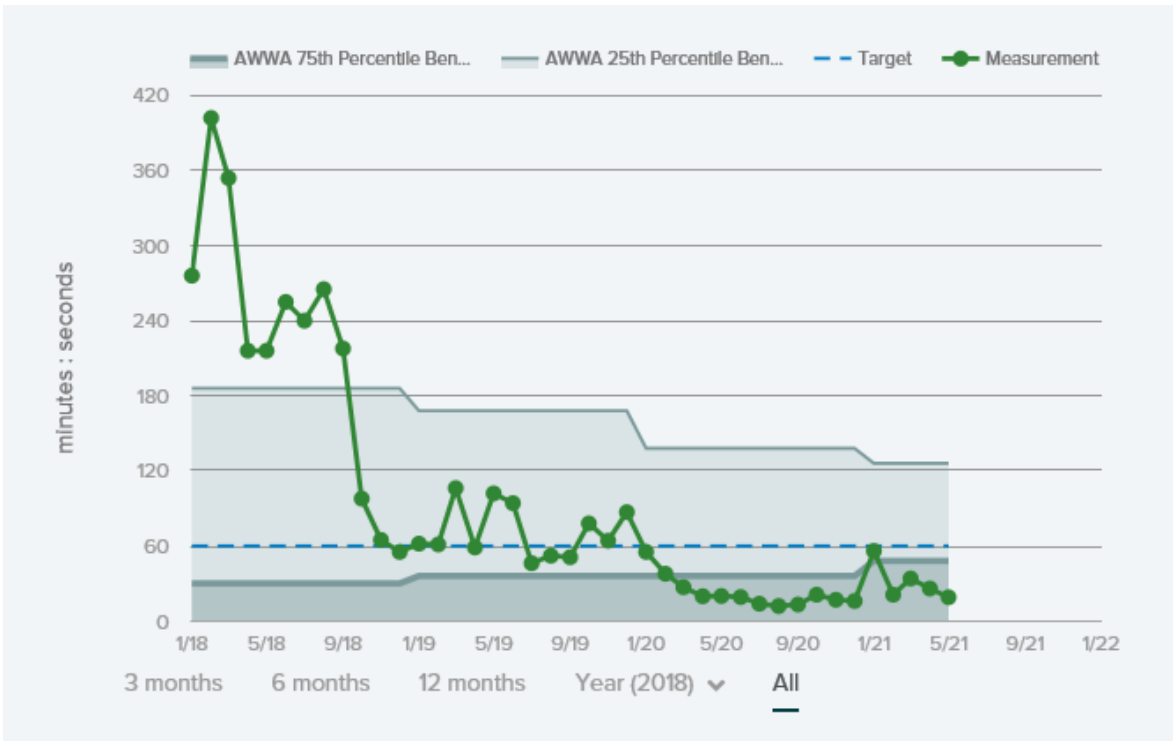
16
17 The 2018 results are not reasonable and significantly below what is tolerated at
18 other Pennsylvania utilities. The 2019 results show improvement but still reflect that the

¹⁰ <https://headwaters.pgh2o.com/>

¹¹ As stated on PWSA's website.

¹² Data for 2019 and 2020 is taken from PWSA Exh. JAQ-10. The 2020 results are updated through August 2020.

1 one minute target was not met for six of the 12 months. The 2020 results are skewed by
 2 the onset of the COVID-19 pandemic in March, the halt to PWSA’s termination
 3 activities, and the reduced volume of calls handled by PWSA. Nonetheless, this
 4 performance shows continuing improvement in PWSA’s call center performance. The
 5 following graph¹³ shows the significant improvement in answering calls in a timely
 6 manner, but also documents that this significant improvement has occurred during a
 7 period in which call volume is lower due to the halt in termination activities.



8
 9 Since the 2020 and 2021 annual call volume has dropped by 4,000-5,000 calls since
 10 2019¹⁴, my concern is that the recent relatively superior level of performance may not
 11 continue once PWSA reverts to a more traditional collection program that relies on sending

¹³ From the PWSA web portal, <https://headwaters.pgh2o.com/Metrics/AverageSpeedAnswerContactCenter>. A note accompanying the graph (dated January 1, 2020) states: “AWWA Benchmark percentiles updated with percentiles from the 2019 AWWA Benchmark Survey for combined utilities.”

¹⁴ PWSA Response to OCA-VIII-8, Attachment.

1 termination notices and termination of service and dealing with the high volume of
2 customers who have incurred arrears during the pandemic. It is likely that call volume will
3 surge with the resumption of more traditional termination policies. This concern also
4 reflects that PWSA has established its benchmarks based on surveys conducted by the
5 American Water Works Association.

6 Q. HAS PWSA MADE ANY COMMITMENT TO CONTINUE ITS 2020 ACTUAL
7 PERFORMANCE IN THE FUTURE?

8 A. Not in a manner that is enforceable as a specific performance standard. However, PWSA
9 has stated that it has a goal of an average speed of answer of 1 minute and abandonment
10 rate of 3% and that these metrics are “achievable once full collection activities resume.”¹⁵
11 These proposed goals are reasonable and should be required as a condition of the rate
12 increase and the future resumption of pre-COVID-19 termination practices.

13 Q. PLEASE DISCUSS PWSA’S PERFORMANCE IN RESPONDING TO LEAKS AND
14 OUTAGES.

15 A. PWSA tracks the frequency and length of time to repair service outages. PWSA has an
16 internal objective to minimize service disruption setting a target for average length of
17 service disruptions and measuring the number of outages greater than 6 hours that impact
18 more than 2,000 accounts. This measure evaluates the average length of service disruption
19 for water customers due to main breaks, system repairs, low pressure, boil water advisories,
20 and other operational needs.

21 The target for an average of no longer than 6 hours for a service disruption was
22 routinely met at 3-4 hours for each month of 2018 and early 2019. However, starting in

¹⁵ PWSA Response to OCA-III-14.

1 November 2019, the length of service outages increased to 4-5 hours and was above its
2 internal performance target in most of 2020. In 2021 the average for such outages is more
3 than 6 hours. The following graph is from the PWSA web portal:¹⁶



4
5 It is not clear why the time to repair has gradually increased since October 2019. In
6 addition, PWSA’s performance in this area does not meet AWWA’s best practices and
7 performance. I recommend that the Commission require PWSA to meet the target it has
8 identified above as a condition for any rate increase.

9 Q. PLEASE DISCUSS PWSA’S PERFORMANCE WITH REGARD TO RESPONDING
10 TO CUSTOMER COMPLAINTS.

11 A. Every Pennsylvania public utility is required to educate customers about how to register
12 informal and formal complaints, the former resolved by the Commission’s Bureau of

¹⁶ <https://headwaters.pgh2o.com/Metrics/AverageLengthServiceDisruption>. A note accompanying the graph (dated January 1, 2020) states: “AWWA Benchmark percentiles updated with percentiles from the 2019 AWWA Benchmark Survey for combined utilities.”

1 Consumer Services because of a customer’s dissatisfaction with the utility’s response and
2 the latter handled as a formal matter by the Commission because of a formal filing by the
3 customer or group of customers. Utilities also receive “disputes” directly from customers
4 and are obligated to investigate and respond to those issues or indications of dissatisfaction.
5 Customer complaints typically form a hierarchy or pyramid from a large volume of
6 disputes to a smaller group of informal complaints to the BCS and a relatively small
7 number of formal complaints filed with the Commission. Tracking and evaluating disputes
8 and informal or formal complaints are key to ensuring ongoing improvements in customer
9 service because that evaluation is likely to spot the “red flag” that indicates a systemic issue
10 or concern that requires management’s attention and, in some cases, a change in policy or
11 procedure. In addition, of course, this type of evaluation may also identify violations of
12 the Commission’s regulations.

13 PWSA tracks the number and type of disputes, informal complaints, and formal
14 complaints that are related to the call center and generic “chapter 56” issues. PWSA also
15 has a much more extensive log of “quality of service” or “field” complaints¹⁷ PWSA’s
16 method of identifying “disputes” is to ask at the end of the transaction whether the customer
17 is satisfied with the information provided by the representative.¹⁸ This is the only method
18 used to identify a “dispute.” Representatives are not trained to recognize a dispute by other
19 criteria or to affirmatively engage the customer in determining whether the result of the
20 decision by the representative is satisfactory to the customer.¹⁹ If the customer states his

¹⁷ PWSA Response to OCA VII-26.

¹⁸ PWSA Response to OCA-III-16 states that this is the sole method and that survey responses from customers to explore more detailed customer satisfaction are not relied upon to identify “disputes.”

¹⁹ PWSA does include a reference to how to file a complaint with the Commission with its bills and termination notices.

1 or her dissatisfaction in answer to this standard question, a dispute is recorded, and further
 2 collection action stayed by putting a “lock” on the account to prevent termination actions.

3 PWSA does not have an internal goal to limit the rate or volume of customer
 4 complaints, either “disputes” or complaints filed with BCS or the Commission. However,
 5 PWSA tracks complaint volume in its monthly performance reports. Each Customer
 6 Service Monthly Report includes a section on “PUC Compliance,” that records “inquiries,”
 7 “disputes,” “informal complaints” and “formal complaints.”²⁰ PWSA also prepares
 8 monthly reports that track dispute resolution with links to the performance of individual
 9 customer service representatives.²¹

10 A review of the same monthly data for January through April in 2020 and 2021
 11 shows an increase in all complaint categories in 2021.²²

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>Total</u>
DISPUTES					
2020	108	72	72	53	305
2021	95	91	115	83	384
INFORMAL COMPLAINTS					
2020	35	33	14	4	86
2021	29	20	26	23	98
FORMAL COMPLAINTS					
2020	4	5	5	2	16
2021	6	4	20	16	46
JUSTIFIED CONSUMER COMPLAINTS					
2020	9	7	10	7	33
2021	10	12	15	4	41
VERIFIED INFRACTIONS					
2020	9	8	19	11	47
2021	14	16	24	6	60

12 The term “justified consumer complaints” is defined by the BCS as a failure to

²⁰ See, e.g., PWSA’s Quarterly Compliance Plan Progress Report for the 1st Quarter 2021 filed on April 30, 2021.

²¹ PWSA Response to OCA-VIII-5. Several Confidential attachments confirm this information.

²² PWSA Response to OCA-III-17 and its attachment.

1 apply the proper policies at the time of the complaint to the PWSA.²³ The term “verified
2 infractions” refers to complaints in which the BCS found that specific billing and customer
3 service policies were not properly applied.²⁴ The Commission’s Bureau of Consumer
4 Services publishes a quarterly Consumer Activities and Report Evaluation for
5 Pennsylvania electric, gas, telephone, and water utilities.²⁵ These reports typically include
6 historical information to allow for a trend analysis. The 2020 calendar year data for PWSA
7 (in which the data is presented separately for water and sewer service and then totaled)
8 shows lower residential informal consumer complaints, requests for payment
9 arrangements, and inquiries compared to 2019. However, the 1st Quarter 2021 BCS Report
10 confirms a 44% increase in customer complaints from PWSA customers that need further
11 investigation compared to 2020. While the 2020 and 2021 BCS Reports did not include
12 any data on “justified complaints” or “infractions” for PWSA (as it did for other larger
13 Pennsylvania water utilities), the data provided by PWSA in response to OCA-III-17
14 includes this information. The volume of complaints that raise compliance concerns is
15 occurring during a period when termination of service is not the root cause since
16 terminations did not occur during this period.

17 When asked for any analysis of the documented increase in formal complaints,
18 justified complaints, and infractions in 2021 compared to the 2020 data, the Authority
19 stated that increases in 2020 were due to an increase in Jordan Tax Service back bills and

²³ Defined by BCS as: A consumer complaint case where, prior to BCS intervention, the company did not comply with Commission Orders, policies, regulations, reports, Secretarial Letters, tariffs, or guidelines when the consumer brought the complaint to the company’s attention. The justified consumer complaint rate equals the number of justified consumer complaints for each 1,000 residential customers.

²⁴ Defined by BCS as: A misapplication or infringement of a Commission regulation, particularly the standards and billing practices for residential utility service.

²⁵ <https://www.puc.pa.gov/filing-resources/reports/consumer-activities-report-evaluation/>

1 lien activities and that, “There were no other trends or compliance related issues identified
2 during this internal review.” PWSA also provided a bulleted list of “feedback” obtained
3 from BCS since January 2021. However, no actual internal analysis was provided.²⁶

4 The summary of the formal customer complaints that were filed in the 1st Quarter
5 Compliance Report for January-March 2021 reveals a frequent theme of “previously
6 unbilled service due to nonregistering meter,” “catch up consumption,” and “high
7 consumption” as the basis for the complaint. The fact that customers had to file a formal
8 complaint about their high bills suggests that PWSA may not be properly handling the
9 customer’s dispute or offering sufficient means of redress in the form of payment plans.²⁷

10 I recommend that the Commission require PWSA to undertake a root cause analysis
11 of these complaints and identify and adopt reforms to reduce its formal complaints, verified
12 complaints, and justified complaints. Given the pattern of formal complaints noted above,
13 this analysis should evaluate PWSA’s collection policies about seeking payment of back
14 bills for meters that were not working properly or regularly read for an actual meter reading.

15 Q. PLEASE DISCUSS PWSA’S BILLING ACCURACY AND TIMELINESS.

16 A. PWSA measures whether bills are based on actual or estimated readings and the total billed
17 amounts each month.²⁸ However, PWSA’s published performance metrics no longer report
18 or track performance based on a performance objective. In the most recent rate case,
19 PWSA had an established internal objective to issue 98% of bills based on actual meter
20 readings, a goal that it had not met based on my review of its performance at that time. As

²⁶ PWSA Response to OCA-VIII-7.

²⁷ PWSA Response to OCA-VIII-7c (Confidential).

²⁸ The Customer Service Monthly Reports are included in Appendix E of the Quarterly Compliance Plan Progress Reports.

1 reflected in the actual performance data below, even this performance standard would
2 allow approximately 2,000 bills to be estimated in each billing cycle. The Customer
3 Service Monthly Report contains raw data on billed actual vs. estimated readings and the
4 dollar amount of the billed amounts. Each Report does note that PWSA's "Non-Access
5 Campaign" continues to address aged actual meter readings and estimated meter readings
6 and identifies how many meters were upgraded each month:

Month 2021	Aged actual meter readings	Estimated Meter readings	Upgraded meters
January	1,666	2,636	83
February	1,966	2,606	478
March	1,470	2,583	472

7
8 I recommend that the Commission require PWSA to meet the previous 98%
9 standard as a condition of any rate increase and submit a plan as part of any compliance
10 phase of this rate case to ensure a higher level of performance over time to reduce the
11 volume of estimated bills.

12 Q. DO YOU HAVE ANY CONCERNS ABOUT PWSA'S REVISED BILL FORMATS?

13 A. Yes. Overall, the revised bill formats are well designed and present the key information to
14 consumers. However, there are two issues that are worth potential further revision.

15 Q. PLEASE DISCUSS PWSA'S BILL FORMAT FOR A CUSTOMER ON THE
16 RESIDENTIAL DISCOUNT PROGRAM.

17 A. The second page of PWSA's bill informs the customer that he/she is on the Residential
18 Discount Program. However, the customer who is receiving the Discount Program bill
19 assistance will find it difficult to understand what the discount is or how it is calculated.

20 PWSA provided an actual customer bill with a front-page notice of a prior balance of

1 \$3,135.92, a previous payment of \$161.16, and a past due amount of \$2,974.76.²⁹ I attach
2 this customer’s bill with identifying customer information removed as Exhibit BA-2. The
3 front page of this bill states in a separate box that the “current charges” are \$92.89, the
4 “installment plan charge” is \$51.62, and the amount “due on 5/11/2021” is \$144.51, which
5 is the total of the first two charges. However, the next page entitled “my billing details,”
6 provides billing detail that shows that the current charges of \$92.89 and “adjustments” in
7 the form of a “miscellaneous water credit,” “DISC credit water,” DISC Credit Sewer
8 Conveyance,” and “Forgiveness Program.” These credit adjustments amount to \$40.84.
9 The credits are presented as an adjustment on the “total due on or before 5/11/2021”
10 identified as \$3,067.65. It is not clear if the customer’s actual monthly PWSA bill of
11 \$92.89 has been discounted prior to its presentment or if the discounts and credits are being
12 applied only to the remaining past due balance. I recommend that PWSA revise this bill
13 format to make it clear how the discounts and credits impact the customer’s current
14 charges.

15 Q. PLEASE DISCUSS YOUR CONCERNS WITH HOW PWSA HANDLES ALCOSAN
16 CHARGES ON ITS BILLS.

17 A. PWSA bills and collects for the treatment of wastewater by the Allegheny County Sanitary
18 Authority (ALCOSAN). The ALCOSAN charges are set by the Sanitary Authority, but
19 they are itemized on PWSA’s bills and collected by PWSA under its Chapter 56 authority
20 to terminate service for nonpayment. PWSA purchases the ALCOSAN receivables and
21 collects them without recourse.³⁰ However, PWSA’s bill includes a specific notice box

²⁹ PWSA Response to OCA-III-12, Attachment H.

³⁰ PWSA Response to OCA-III-2.

1 that directs the customer who has questions about these charges to call ALCOSAN.³¹
2 Furthermore, PWSA's claim that it has no legal authority to adjust a customer bill for
3 ALCOSAN (and other water provider charges)³² does not reflect the fact that it has
4 purchased these receivables. If PWSA seeks to purchase and collect these receivables and
5 threaten termination of service for nonpayment, it is reasonable to require PWSA to answer
6 questions, resolve disputes, and enter payment plans in response to customer
7 communications about any aspect of their PWSA bill. I note as well that PWSA is "in the
8 process of evaluating its contract with ALCOSAN," and one of those issues is PWSA's
9 obligation to incur ALCOSAN's bad debt for uncollectible amounts.³³ This is an important
10 aspect of PWSA's billing and collection programs and should be monitored closely by the
11 Commission.

12 Q. WHAT DO YOU RECOMMEND WITH RESPECT TO THESE ALCOSAN CHARGES
13 ON CUSTOMER BILLS?

14 A. If PWSA seeks to bill and collect for ALCOSAN charges on its PWSA bills and apply
15 Chapter 56 collection rights to terminate service for those unpaid charges, I recommend
16 that PWSA be required to assume responsibility for responding to any questions or
17 concerns or disputes concerning those charges. Customers should not be sent to
18 ALCOSAN about charges on their PWSA bill that must be paid to avoid collection actions.

19 Q. PWSA HAS ELIMINATED ALMOST ALL CUSTOMER FEES AND CHARGES TO
20 MAKE BILL PAYMENTS ELECTRONICALLY. PLEASE COMMENT.

³¹ See Exhibit BA-2 (customer bill).

³² PWSA Response to OCA-X-1 correctly states that PWSA does not have authority to alter the ALCOSAN or water provider charges or answer questions about how these rates were calculated. However, that distinction is not reflected on the notice on the customer's bill.

³³ PWSA Response to OCA-III-4.

1 A. This is a significant and valuable reform that I proposed on behalf of the OCA in the last
2 rate case. I applaud this development.

3 Q. DO YOU AGREE WITH PWSA’S PROPOSAL TO PROVIDE A ONE TIME CREDIT
4 OF \$5.00 TO CUSTOMERS WHO ENROLL IN E-BILLING?

5 A. Yes. This appears to be an efficient and effective way to promote E-billing since there is
6 no additional charge to the customer to pay in this manner and the resulting enrollment
7 would also reduce postage charges and mailing expenses.³⁴

8 **III. PWSA’S CUSTOMER SERVICE POLICIES REMAIN DEFICIENT IN**
9 **SEVERAL AREAS THAT SHOULD BE ADDRESSED IN THIS RATE CASE**

10
11 Q. ARE THERE SPECIFIC CONSUMER PROTECTION POLICIES THAT YOU WISH
12 TO HIGHLIGHT IN YOUR REVIEW OF PWSA’S CUSTOMER SERVICE
13 PERFORMANCE?

14 A. Yes. As a preliminary matter, PWSA has made many extensive changes in their policies
15 and programs to comply with the minimum consumer protection provisions required by
16 Chapter 56 of the Commission’s regulations and associated statutory mandates set forth in
17 Chapter 14 of the Public Utility Code. I commend PWSA’s good faith efforts in this effort.
18 However, there are some aspects of PWSA’s current policies that are questionable and that
19 deserve reform in the context of this base rate case.

20 Q. PLEASE DISCUSS YOUR CONCERN WITH NOTICES SENT TO DELINQUENT
21 CUSTOMERS IN APRIL 2021.

³⁴ PWSA Response to OCA-III-23. PWSA estimates that if all 66,000 currently unenrolled customers were to enroll in e-billing, the cost of the one-time credit would be \$330,000 with savings of \$444,000 annually in postage and mailing costs.

1 A. PWSA sent a notice entitled, “Avoid Water Shut Off By Contacting Us Now” final notice
2 to the first three cycles of delinquent customers in the week of April 12, 2021.³⁵ I attach
3 this Notice as Exhibit BA-3. This Notice informed the customer that the Commission’s
4 moratorium on water shut-offs expired on March 31, 2021. The Notice stated that “PWSA
5 views shut offs as a last resort and we have multiple programs available to you to keep
6 your water service active. We do not want to shut off your water, but you must contact us
7 at 412-255-2423 to take advantage of new assistance programs.”³⁶ Further information
8 about these assistance programs were included in this one-page letter.

9 I am concerned that this Notice appears to threaten a “shut off” during a period that
10 PWSA had an internal policy not to pursue termination or “shut offs” at this time and still
11 has no explicit plan to resume terminations of service. Section 56.99³⁷ of Commission
12 regulations explicitly prohibits a public utility from threatening termination of service
13 when there is no intent to terminate service. I appreciate that PWSA is trying to use a
14 variety of methods to stimulate customer contact to address outstanding arrears balances.
15 However, this particular communication is not appropriate and should be investigated
16 further as a potential violation.

17

³⁵ PWSA Response to OCA-III-7.

³⁶ PWSA Response to OCA-X-7.

³⁷ **52 Pa. Code § 56.99. Use of termination notice solely as collection device prohibited.**

A public utility may not threaten to terminate service when it has no present intent to terminate service or when actual termination is prohibited under this chapter. Notice of the intent to terminate shall be used only as a warning that service will in fact be terminated in accordance with the procedures under this chapter, unless the customer or occupant remedies the situation which gave rise to the enforcement efforts of the public utility.

1 Q. PWSA HAS AUTHORITY TO COLLECT OVERDUE BILLS VIA THE ISSUANCE OF
2 A LIEN ON THE OWNER’S PROPERTY. PLEASE DISCUSS WHY PWSA’S LACK
3 OF CUSTOMER DISCLOSURES ABOUT THIS RIGHT SHOULD BE REVIEWED IN
4 THIS RATE CASE.

5 A. PWSA’s use of a lien to collect overdue utility payments is unique to municipal entities
6 regulated by the Commission. I do not opine on the legality of PWSA’s use of a lien to
7 collect bad debt³⁸, but I point out that such a collection method gives PWSA rights that
8 conflict with Chapter 56 and the implementation of this right should be carefully exercised
9 and with proper customer education. PWSA affirms that this right to use a lien allows the
10 Authority to collect debts that are older than four years (beyond that allowed by Chapter
11 56). As a result, this practice conflicts with customer information about their rights under
12 Chapter 56. Furthermore, PWSA is pursuing lien notices and lien filings even though it
13 has publicized its halt of termination activities due to COVID-19. From March 2020 until
14 May 5, 2021, PWSA issued 5,570 Notices of Intent to Lien to both residential and
15 commercial accounts and filed 873 liens with the county or other registrar of deeds during
16 the January through April 2021 period.³⁹

17 Q. HOW ARE PWSA’S CUSTOMERS INFORMED ABOUT THE LIEN PROCESS OR
18 ITS USE?

19 A. I find no information about this process presented on PWSA’s website or in customer
20 education communications. According to PWSA, customers are informed about the lien

³⁸ I recognize that the Commission has stated that it has little or no jurisdiction over this lien process. I am not addressing that conclusion.

³⁹ PWSA Response to OCA-III-5.

1 process through the Supplemental Service Conditions published on its website.⁴⁰
2 However, this document is not labeled in any manner that would inform customers as to
3 its content and it is located with its formal Tariffs, a portion of the website that is not
4 typically viewed or accessed by most customers. There is no generic information presented
5 to customers about this process in bills, termination notices, or website content.⁴¹ The
6 customer communications (Unpaid Final Bill Letter and Notice of Intent to Lien) are issued
7 without prior information about the lien process to those who had previously been sent the
8 traditional Chapter 56 notices. I recommend that PWSA should be required to
9 communicate how and when this lien authority will be exercised to its customers and
10 explain that while this lien authority is separate from the Commission's jurisdiction,
11 customers can still dispute the arrears balance (the amount or why it was incurred) through
12 the Commission's complaint process.⁴² I understand that this issue may also be under
13 consideration in the Stage 2 Compliance proceeding. However, I thought it important to
14 raise here as a matter of customer service and review of PWSA's communications with its
15 customers that is a traditional area of inquiry in a base rate case.

16 Q. PLEASE SUMMARIZE THE OUTSTANDING ISSUES RELATING TO PWSA'S
17 TERMINATION POLICIES AND YOUR EVALUATION OF PWSA'S INTERIM
18 POLICIES AS AGREED TO IN THE COMPLIANCE PLAN SETTLEMENT.

19 A. PWSA has taken steps to reform its policies with revisions to the termination notices and

⁴⁰ PWSA Response to OCA-III-4.

⁴¹ I note that PWSA has proposed explicit customer education to its future stormwater customers since the Authority must rely solely on its lien authority to collect unpaid stormwater bills for customers who are not otherwise PWSA customers for water and/or wastewater service.

⁴² PWSA puts a collection lock on an account when a Dispute or complaint is registered by the customer who answers the satisfaction question in the negative and this halts the lien process as well as the traditional termination process. PWSA Response to OCA-III-31.

1 criteria for actual termination of service for nonpayment. Again, the actual determination
2 of compliance has been shifted to Stage 2. However, there is one extremely important area
3 in which PWSA's current policies do not conform to Chapter 56 of the Commission's
4 regulations relating to the obligation to attempt personal contact with the customer
5 "immediately prior" to the actual termination of service.⁴³ As I summarized my
6 investigation of this issue in the last rate case, PWSA does not currently train its field
7 personnel on the Chapter 56 contact procedures and customer rights or how to respond to
8 these rights should they be encountered in the field.⁴⁴ I incorporate that prior testimony
9 here, as support for my recommendation that PWSA should not be permitted to resume
10 termination of service for nonpayment until its policies are brought into compliance with
11 Chapter 56 requirements in the Stage 2 proceeding.

12 Q. PLEASE EXPLAIN THE PROCESS PWSA AGREED TO IMPLEMENT AS AN
13 INTERIM MEASURE AND YOUR ANALYSIS OF THE RESULTS.

14 A. PWSA did agree to an additional attempt to make telephone calls to customers prior to
15 termination of service and report on those results. I reviewed the implementation of this
16 temporary process in the last rate case. However, since PWSA halted termination of
17 service due to the COVID-19 pandemic, the interim measure is not being implemented and
18 cannot be evaluated further.

⁴³ Chapter 56. 52 Pa. Code §§ 56.94, 56.334.

⁴⁴ As stated in my Direct Testimony (OCA St. No. 6) in PWSA's prior rate case in Docket R-2020-3017951 et seq. at 12: "By virtue of a short summary, PWSA rejects the plain language of the regulation that requires field personnel of utilities to attempt contact by knocking on the door or interacting with a responsible adult who is present prior to turning the valve to shut off the water (or electricity or natural gas for those utilities). This interaction, should it occur, is vital to ensuring that the customer's rights are recognized and responded to in the event of (1) allegation of payment;⁴⁴ (2) presence of medical emergency; and (3) assertion of rights pursuant to victims of domestic violence or abuse. My discovery throughout these proceedings has documented that PWSA does not train its field personnel on these rights or how to respond to these rights should they be encountered in the field."

1 Q. PWSA IS EXPLORING THE POTENTIAL FOR HIRING A CONTRACTOR TO
2 CONDUCT FIELD VISITS TO CUSTOMER PREMISES. HAVE YOU REVIEWED
3 THIS PROPOSAL?

4 A. PWSA has provided a draft of a Request for Proposals to implement the use of a third-
5 party contractor to conduct premise visits prior to termination.⁴⁵ It is my understanding that
6 this document is under review as part of the Stage 2 proceedings.

7 Q. WHAT DO YOU RECOMMEND WITH RESPECT TO PWSA’S RESUMPTION OF
8 TERMINATION ACTIVITIES IN LIGHT OF THE PENDING RESOLUTION OF THE
9 STAGE 2 ISSUES THAT DIRECTLY IMPACT COMPLIANCE WITH CHAPTER 56?

10 A. I recommend that PWSA not be allowed to pursue termination of service to residential
11 customers until these vital policies and practices that relate to essential Chapter 56
12 consumer protections are resolved. In particular, the continuation of allowing PWSA to
13 conduct terminations without compliance with the requirement to seek personal contact
14 with the customer “immediately prior” to termination is not reasonable given the length of
15 time since PWSA has come under the Commission’s jurisdiction and the importance of
16 this essential consumer protection in what appears to be PWSA’s intent to resume
17 termination of service for residential customers during the pendency of this rate case.

18 Q. PWSA HAS ALSO INDICATED THE POTENTIAL FOR HIRING A THIRD-PARTY
19 DEBT COLLECTION AGENCY TO COLLECT OVERDUE BILLS OR BAD DEBT.
20 PLEASE COMMENT.

21 Q. PWSA has stated such a potential option may be implemented in the future based on its

⁴⁵ PWSA Response to OCA-III-13 (Confidential Attachment).

1 analysis as to whether the automation of its collection activities is sufficiently effective.⁴⁶
2 It is not clear what “automation” is required or how that is linked to well-designed policies
3 to collect overdue customer bills. While there is no specific proposal or funding for such
4 an approach in this rate case, I recommend that if PWSA moves to implement this proposal
5 that it do so only after notice and opportunity to comment from stakeholders and
6 Commission review of any potential impacts on already approved consumer protection
7 policies and practices.

8 **IV. REVIEW OF PWSA’S PROPOSED TARIFFS TO COMPLY WITH**
9 **CHAPTER 56 AND CHAPTER 14 OF THE PUBLIC UTILITY CODE.**

10
11 Q. HAVE YOU REVIEWED PWSA’S PROPOSED WATER, WASTEWATER, AND
12 STORMWATER TARIFFS FOR COMPLIANCE WITH CHAPTER 56 AND OTHER
13 MANDATED CONSUMER PROTECTIONS?

14 A. Yes. With the exception of the fees noted below, PWSA submitted relatively few changes
15 to its water and wastewater tariffs in this proceeding. However, it is important to recognize
16 the ongoing concerns with the lack of determination of PWSA policies to implement the
17 Stage 2 compliance issues. I note that these tariffs do not reflect the lien authority that
18 PWSA relies upon to collect certain consumer debts and I recommend that these tariffs
19 refer to this collection mechanism that operates in addition to those Chapter 56
20 requirements regulated by the Commission.

21 Q. PLEASE COMMENT ON PWSA’S PROPOSED REVISIONS TO FEES AND
22 CHARGES.

⁴⁶ PWSA Response to OCA-III-11.

1 A. Ms. Quigley on behalf of PWSA submits tariff changes for water and wastewater service.
2 Section H of the proposed tariffs contains revisions and a significant number of new fees
3 and charges for various interactions with PWSA.⁴⁷ The language in Section H also allows
4 the amount of these fees and charges to be increased based on the annual Consumer Price
5 Index. Utility fees should be cost based and not allowed to be linked to an external index
6 that does not reflect the actual costs incurred by the utility. Any amount of increase related
7 to the Consumer Price Index should be rejected. Further, PWSA should be required to
8 provide cost-based support for its proposed fees, particularly since there is a significant
9 number of new proposed charges.⁴⁸ In addition, I question whether it is appropriate to
10 charge customers at all for access to data in the possession of PWSA that would be required
11 to respond to a customer dispute or complaint.

12 Q. PLEASE COMMENT ON PWSA’S PROPOSED STORMWATER TARIFF
13 SUBMITTED IN THIS RATE CASE.

14 A. PWSA submitted a proposed Stormwater Tariff.⁴⁹ I have the following concerns and
15 comments:

- 16 ■ The proposed tariff includes specific fees and charges in Part I, Section H for a variety
17 of services that have not yet been documented as reasonable and without any evidence
18 to support the proposed amounts. These fees appear to require customers to be charged
19 for seeking information in the possession of PWSA to justify their “impervious surface
20 area” and/or respond to inquiries and complaints. This is not reasonable. These fees

⁴⁷ I support the concern raised by OCA Witness Scott Rubin regarding the proposed increase in the fee for a dishonored payment or returned check. OCA Statement 3.

⁴⁸ See OCA Statement 6.

⁴⁹ PWSA Exhibit TI-4.

1 should not be adopted at this time. Furthermore, I raise the same concern as exists in
2 PWSA's current water and wastewater tariffs as described above that would allow
3 changes in these fees based on change in the Consumer Price Index.

4 ■ Section H (3) appears to allow PWSA to order the "discontinuance" of use of the
5 system to prevent waste discharge, an action that calls into question the Chapter 56
6 termination of service policies and requirements without any reference to those
7 requirements.

8 ■ Section (H)(4) also sets forth expensive new charges for PWSA permits and
9 inspections, similar to those proposed in the water/wastewater tariffs. These fees, if
10 they are new and not otherwise reflected in PWSA's tariffs, are likely to prove
11 controversial and there is no justification for these charges at this time.

12 ■ Part III, Section C, entitled "Discontinuance of Service" states that customers will
13 remain liable for any stormwater charges until the Authority accepts a new customer
14 for the property. This is a provision that reflects their reliance on liens to collect
15 overdue bills and is likely to result in significant disputes and conflict with Chapter 56
16 rights and remedies.

17 ■ The tariff proposes to allocate partial payments in Part III, Section E (5), which states:

18 Utility bills rendered by the Authority shall include only the amount due for water service.
19 Where a customer remittance to the Authority includes payment for any non-utility
20 services, proceeds will be applied first to pay all outstanding regulated utility charges. For
21 customers receiving any combination of water, wastewater, and storm water services, any
22 partial remittance will be applied in the following order: water, wastewater and storm water
23 charges.

24 I presume the first sentence is intended to apply to stormwater only customers. I
25 presume that "non-utility" services includes non-PWSA charges, such as ALCOSAN
26 charges, but this is not clear. In addition to the needed clarification of this provision, I
27

1 note that PWSA does not currently have the capability to allocate partial payments
2 according to the percentage of each type of charge compared to the total bill.⁵⁰

- 3 ▪ Part III, Section L contains an extensive list of “prohibited conduct” that has
4 implications for PWSA’s enforcement policies that need further consideration,
5 particularly in light of the proposed penalties in subsection (3) and the proposed use of
6 the lien authority to collect costs of repair and damages.
- 7 ▪ The tariff includes requirements in Part IV relating to a variety of compliance
8 requirements for the sale or transfer of property that arguably belong in the City of
9 Pittsburgh’s ordinances rather than PWSA’s tariffs.
- 10 ▪ Finally, this entire set of regulations and policies will require a significant customer
11 education program prior to their implementation. PWSA’s filing recognizes the need
12 for customer education that this new set of rates and terms and conditions will require,
13 but there are important compliance related matters that are not yet resolved even though
14 PWSA seeks to implement the new rate structure in this rate case.

15 **V. PWSA’S PROPOSED STORMWATER RATE THREATENS CUSTOMER**
16 **SERVICE PERFORMANCE.**

17
18 Q. PWSA IS PROPOSING TO IMPLEMENT A NEW STORMWATER RATE AS PART
19 OF THIS RATE CASE. DO YOU HAVE COMMENTS?

20 A. I do not opine on the rate structure or whether PWSA design of this rate structure for
21 stormwater service is reasonable. However, I am concerned about the potential for
22 customer confusion and resulting inquiries and disputes that may result if this program is

⁵⁰ PWSA Response to OCA-III-28.

1 implemented as proposed, thus threatening PWSA’s customer service performance. For
2 example, the rate structure requires affected customers to be educated about how the
3 “impervious surface area” of their property was calculated and how that feature resulted
4 in the stormwater rate, the relationship between the stormwater rate and the changes to
5 the wastewater rates, the so-called “gradualism” program, and the possible
6 incentives/credits to reduce stormwater bills. This program also must be integrated into
7 the Bill Discount Program and associated assistance programs. While PWSA has
8 recognized the need for customer education and has initiated some educational outreach
9 associated with this rate case proposal⁵¹, the Authority seeks to put off decisions about
10 the details of how this new rate will be implemented and appear on customer bills until a
11 Compliance filing.⁵² In addition, PWSA does not apparently see the need for additional
12 personnel to implement the stormwater credit program.⁵³ Nor has PWSA identified the
13 customer education programs and content associated with this proposed stormwater fee
14 as part of its recommended Stage 2 Compliance issues for this initiative.⁵⁴ At the very
15 least, if this new rate is approved, it is highly likely to result in an increased volume of
16 customer calls that will occur at the same time as the eventual resumption of termination
17 of service, collection of COVID-19 arrears balances, and the rate increase itself. This
18 concern emphasizes the need for the Commission to require a specific performance level
19 for customer call center activities as a condition of this rate case.

⁵¹ The landing page [<https://www.pgh2o.com>] does not reference the rate case or the new stormwater rate proposal. The “Your Water” section contains the option to select “stormwater” and learn more, but there is no specific description of the stormwater rate proposal in this section.

⁵² PWSA Response to OCA-III-18 states that PWSA has not developed a test bill file that includes the new stormwater fees.

⁵³ PWSA Response to OCA-III-19.

⁵⁴ PWSA Statement No. 2-SD.

1 Q. AS A RESULT OF THESE CONCERNS, WHAT DO YOU RECOMMEND WITH
2 RESPECT TO THE IMPLEMENTATION OF PWSA'S STORMWATER RATE
3 PROPOSAL?

4 A. If PWSA obtains approval for the implementation of this new Stormwater charge, there
5 are several key implementation issues that should be resolved in this rate case. I
6 recommend that PWSA address the following matters in its Rebuttal filing in this
7 proceeding to allow review of these key implementation matters prior to any approval of
8 this new program:

- 9 • The new customer bill format for assessing a stormwater charge;
- 10 • The PWSA communications to affected customers;
- 11 • The revised web portal to present the stormwater charge showing customers how
12 to understand the basis for the charge, the credit program, and the future plan to increase
13 the stormwater charge;
- 14 • The internal plan for training the call center for responding to customer inquiries
15 and disputes about the stormwater charge; and
- 16 • The internal plan to collect unpaid stormwater charges.

17 Q. DO YOU HAVE RECOMMENDATIONS FOR ADDITIONAL REPORTING
18 REQUIREMENTS?

19 A. Yes. Because of my concern about the potential impact of the new stormwater charge on
20 customer call center activities and disputes related to stormwater charges and collection
21 actions associated with stormwater charges, I recommend that PWSA be required to add
22 the following information to its Quarterly Compliance Reports (filed in consolidated
23 Docket Numbers: M-2018-2640802, M-2018-2640803, P-2018-3005039):

- 1 • The number of customer calls concerning stormwater charges and bill impacts;
- 2 • The number of customer disputes concerning stormwater charges and the length
- 3 of time to respond to customer inquiries and disputes;
- 4 • The number of customers in arrears with stormwater charges by customer class;
- 5 and
- 6 • Collection actions (by type) undertaken by PWSA for customers with overdue
- 7 stormwater charges.

8 **VI. PWSA'S SERVICE QUALITY AND CUSTOMER SERVICE PERFORMANCE**
9 **IS DIRECTLY RELATED TO THIS RATE CASE**

10 Q. WHAT IS THE CONNECTION BETWEEN YOUR DISCUSSION OF SERVICE
11 QUALITY AND CUSTOMER SERVICE PERFORMANCE AND THE RATE
12 INCREASE PROPOSED BY PWSA?

13 A. Any public utility must justify its rates in part based on its ability to perform its essential
14 quality of service and customer service functions at a reasonable performance level. It is
15 appropriate to compare the performance of the utility seeking a significant rate increase to
16 other Pennsylvania utilities, particularly where, as here, the Authority has only recently
17 come under the Commission's jurisdiction and a lengthy proceeding has been held that sets
18 forth PWSA's obligations to conform to that authority. Finally, PWSA is not a typical
19 public utility regulated by the Commission. Unlike the vast majority of the electric, gas,
20 and water utilities regulated by the Commission, PWSA has no shareholders and there is
21 no "return on equity" as that aspect of rate regulation is applicable to investor-owned
22 utilities who are allowed to earn an opportunity for a reasonable profit on their investments.
23

1 Q. HOW SHOULD THE COMMISSION CONSIDER PWSA’S QUALITY OF SERVICE
2 AND CUSTOMER SERVICE PERFORMANCE IN LIGHT OF THIS DISTINCTION?

3 A. The consideration of quality of service and customer service performance performs a
4 somewhat different function for PWSA compared to most other public utilities owned by
5 private investors and shareholders. First, my analysis and findings should inform the
6 Commission on the reasonableness of PWSA’s significant rate increase proposals. In other
7 words, if PWSA seeks a rate increase but there are deficiencies in its customer service
8 performance, the Commission should order improvements in specific areas as a condition
9 of any rate increase or consider reducing the rate increase until reforms have been adopted.
10 This approach is mandated by the statutory guidelines governing public utility rate cases
11 in which the Commission must evaluate the “efficiency, effectiveness, and adequacy of
12 service.”⁵⁵ I address the implications for customer service performance below.

13 **VII. CONDITIONS THAT SHOULD BE ATTACHED TO ANY RATE INCREASE**

14 Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS FOR PWSA’S CUSTOMER
15 SERVICE PERFORMANCE AS A CONDITION OF ANY RATE INCREASE.

16 A. PWSA’s overall service quality and customer service performance has improved since
17 coming under the Commission’s jurisdiction. The development of internal tracking and
18 performance objectives is to be commended. However, there are certain areas that need to
19 be addressed as requiring improvement and reform as conditions for allowing PWSA to
20 increase its rates, particularly given the frequency and the percentage rate increases that
21 PWSA has sought in this and the two previous rate cases:
22

⁵⁵ 66 Pa. C.S. 523.

- 1 • PWSA’s call center should meet the following annual performance standards:
2 average speed of answer of no more than one minute and an abandonment rate of no more
3 than 3%. If these standards are not met during any one quarter (three-month period),
4 PWSA should be required to submit a compliance plan to achieve the required minimum
5 standards by the end of the next quarter.
- 6 • PWSA should be required to meet a performance standard for restoration of outages
7 that impact 2,000 or more customers within 6 hours.
- 8 • PWSA should be required to conduct a formal root cause analysis of its rising
9 customer informal and formal complaints, as well as the increasing number of justified
10 complaints and verified infractions, and identify and adopt reforms to reduce this disturbing
11 trend.
- 12 • PWSA should issue 98% of its customer bills based on actual meter readings and
13 seek to reach a 99% standard within a reasonable time.
- 14 • PWSA should revise the bill format and presentation for customers enrolled in the
15 Discount Program to clearly identify how this program reduces otherwise applicable
16 current monthly charges and respond to the confusing presentation of the customer’s bill.
- 17 • If PWSA is responsible for billing and collecting ALCOSAN and other water
18 provider charges, PWSA should revise its bill notice about ALCOSAN or other water
19 provider charges to make clear that customers should call PWSA to discuss these charges
20 and respond to any questions, dispute amounts, as well as handling payment arrangements
21 and collection activity related communications. Alternatively, PWSA should treat these
22 charges as “non-utility” charges and eliminate those charges from collection activities.
- 23 • The Commission should investigate PWSA’s use of “shut off” language in notices

1 issued to customers when there is no intent to pursue a shut off or termination of service.

2 • PWSA should provide clear and conspicuous customer education about its lien
3 authority and how this relates to and impacts the timing and rights associated with its
4 Chapter 56 consumer protections.

5 • PWSA should be directed not to resume termination of service for nonpayment
6 until its policies are brought into compliance with Chapter 56 requirements (including the
7 obligation to attempt personal contact with the customer “immediately prior” to
8 termination of service) in the Stage 2 proceeding.

9 • PWSA should be required to provide notice and opportunity for review and
10 comment prior to any implementation of a third-party debt collector for PWSA’s overdue
11 bills.

12 • Certain tariff provisions (including fees) should be eliminated or revised based on
13 the concerns raised in my testimony. Utility fees should be cost based and not allowed to
14 be linked to an external index that does not reflect the actual costs incurred by the utility.
15 Any amount of increase related to the Consumer Price Index should be rejected. Further,
16 PWSA should be required to provide cost-based support for its proposed fees, particularly
17 since there is a significant number of new proposed charges. In addition, I question
18 whether it is appropriate to charge customers at all for access to data in the possession of
19 PWSA that would be required to respond to a customer dispute or complaint

20 • PWSA should be required to provide the more detailed customer education
21 materials I identified above that are associated with its proposed implementation of the
22 new stormwater charge in this rate case, to allow adequate review of these important
23 aspects prior to their approval or implementation.

1 • PWSA should include new reporting information I have identified above in its
2 Quarterly Compliance Report to monitor the impact of the stormwater charge program on
3 customer service performance.

4 Q. DOES THIS COMPLETE YOUR TESTIMONY AT THIS TIME?

5 A. Yes.

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Public Counsel Unit, Attorney General, Washington
Arkansas Attorney General
The Public Utility Project of New York
Ohio Office of Consumer Counsel
District of Columbia Office of People's Counsel
Delaware Division of Public Advocate
Maryland Office of People's Counsel

Areas of Expertise:

- Default Service, Consumer Protection, Service Quality, and Universal Service policies and programs associated with the alternative rate plans and mergers;
- Consumer Protection and Service Quality policies and programs associated with the regulation of competitive energy and telecommunications providers;
- The regulatory policies associated with the regulation of Credit, Collection, Consumer Protection, Low Income, and Service Quality programs and policies for public utilities;
- Customer Education and Rate design and pricing policies applicable to residential customers; and
- Advanced Metering Infrastructure and Grid Modernization costs and benefits, time-based pricing proposals, and performance standards.

Prior Employment

DIRECTOR

*Consumer Assistance Division
Maine Public Utilities Commission*

1986-96

Augusta, Maine

One of five division directors appointed by a three-member regulatory commission and part of commission management team. Direct supervision of 10 employees, oversight of public utility consumer complaint function, appearance as an expert witness on customer services, consumer protection, service quality and low income policy issues before the PUC. Chair, NARUC Staff Subcommittee on Consumer Affairs.

SUPERINTENDENT

1979-83

*Bureau of Consumer Credit Protection
Department of Professional and Financial Regulation*

Augusta, Maine

Director of an independent regulatory agency charged with the implementation of Maine Consumer Credit Code and Truth in Lending Act. Investigations and audits of financial institutions and retail creditors, enforcement activities, testimony before Maine Legislature and U.S. Congress.

Education

JURIS DOCTOR

1973-76
Portland, Maine

University of Maine School of Law

Admitted to the Bar of the State of Maine, September 1976. Currently registered as “inactive.”

B.A. (WITH DISTINCTION) IN POLITICAL SCIENCE
University of Michigan

1964-68
Ann Arbor, Michigan

Publications and Testimony

“How to Construct a Service Quality Index in Performance-Based Ratemaking”, The Electricity Journal, April, 1996

“The Consumer Protection Agenda in the Electric Restructuring Debate”, William A. Spratley & Associates, May, 1996

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“Cramming is the Last Straw: A Proposal to Prevent and Discourage the Use of the Local Telephone Bill to Commit Fraud,” NRRI Quarterly Bulletin, Fall. 1998.

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Testimony on Proposed Interim Rules (Consumer Protection, Customer Enrollment, Code of Conduct, Supplier Licensing) on behalf of the New Jersey Division of Ratepayer Advocate before the New Jersey BPU, May 1999.

Direct Testimony on behalf of AARP, West Virginia PUC Investigation into Retail Electric Competition (consumer protection, universal service, Code of Conduct), June 15, 1999.

Direct and Surrebuttal Testimony on behalf of the Pennsylvania OCA, Natural Gas Restructuring proceedings (8 natural gas utilities): consumer protection; consumer education; code of conduct, before the Pennsylvania PUC, October 1999-April 2000.

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Direct and Rebuttal Testimony on behalf of the Citizens Utility Board, Nicor Gas Customer Select Pilot Program, on consumer protection and regulation of competitive natural gas suppliers [Docket Nos. 00-0620 and 00-0621] before the Illinois Commerce Commission, December 2000 and February 2001.

Direct and Surrebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate on consumer protection and service quality issues associated with the pending merger between GPU Energy and FirstEnergy, before the Pennsylvania PUC, Docket Nos. A-110300F0095 and A-110400F.0040 (February and March, 2001)

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Comments and Reply Comments on behalf of AARP before the Maine PUC, Inquiry into Standard Offer Supply Procurement for Residential and Small Commercial Customers, Docket No. 2004-147 (April 2004).

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Direct and Rebuttal Testimony on behalf of the Maryland Office of People's Counsel before the Maryland PSC, In The Competitive Selection of Electricity Supplier/Standard Offer or Default Service for Investor-Owned Utility Small Commercial Customers and, Delmarva Power and Light and Potomac Electric Power Residential Customers, Case No. 9064 (August and September 2006). [Default Service policies]

Direct and Rebuttal Testimony on behalf of the Maryland Office of People's Counsel before the Maryland PSC, In The Matter of the Optimal Structure of the Electric Industry of Maryland, Case No. 9063 (October and November 2006). [Default service policies]

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Comments on behalf of AARP New Jersey before the New Jersey Board of Public Utilities, In the Matter of the Establishment of a Universal Service Fund Pursuant to Section 12 of the Electric Discount and Energy Competition Act of 1999, Docket No. EX00020091 (August 2006) [Recommendations for USF program changes]

Direct and Rebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania PUC, Joint Application of Equitable Resources, Inc. and the People's Natural Gas Co., d/b/a Dominion Peoples, for Approval of the Transfer of All Stock Rights of the Latter to the Former and for the Approval of the Transfer of All Stock of Hope Gas, Inc., d/b/a/ Dominion Hope to Equitable Resources, Inc., Docket No. A-122250F5000 (September and October 2006). [Customer Service, Service Quality, and Universal Service issues]

Direct Testimony on behalf of Pennsylvania Office of Consumer Advocate before the Pennsylvania PUC, Pennsylvania PUC v. Natural Fuel Gas Distribution Corp., Docket No. R-00061493 (September 2006) [Supplier Purchase of Receivables Program]

Direct Testimony on behalf of AARP Montana before the Montana Public Service Commission, Joint Application of NorthWestern Energy and BBI to purchase NorthWestern Energy, Docket No. 2006.6.82 [December 2006] [Conditions for approval of merger; low income and customer service programs]

Rebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania PUC, Petition by PPL Electric Utilities Corp. for Approval of a Competitive Bridge Plan, Docket No. P-00062227 (December 2006) [Default Service policies]

Direct and Rebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania PUC, Application of Duquesne Light Company for a Certificate of Public Convenience Under Section 1102(a)(3) of the Public Utility Code Approving the Acquisition of Duquesne Light Holding, Inc. by Merger, Docket A-110150F0035 (December 2006 and January 2007) [Conditions for approval of merger; low income and customer service programs]

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Rebuttal and Surrebuttal Testimony on behalf of Pennsylvania Office of Consumer Advocate before the Pennsylvania PUC, Petition of Duquesne Light Co. for Approval of Default Service Plan for January 1, 2008 to December 31, 2010, Docket No. P-00072247 [April 2007] [Default Service policies]

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Direct and Surrebuttal Testimony on behalf of Maine Office of Public Advocate before the Maine Public Utilities Commission, Central Maine Power Co. Chapter 120 Information (Post ARP 2000) Transmission and Distribution Utility Revenue Requirement and Rate Design And Request for Alternative Rate Plan, Docket No. 2007-215 (August 30, 2007 and February 2008) [AMI deployment]

Direct and Reply Testimony on behalf of AARP Maryland before the Maryland Public Service Commission, In the Matter of the Commission's Investigation of Investor-Owned Electric Companies' Standard Offer Service for Residential and Small Commercial Customers in Maryland, Case No. 9117, Phase I and II (September 2007) [Default Service policies]

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Direct and Rebuttal Testimony of Barbara Alexander on behalf of The Public Utility Project of New York, before the New York Public Service Commission, Case 15-M-0127 In the Matter of Eligibility Criteria for Energy Service Companies, Case 12-M-0476 Proceeding on Motion of the Commission to Assess Certain Aspects of the Residential and Small Non-residential Retail Energy Markets in New York State, and Case 98-M-1343 In the Matter of Retail Access Business Rules (November and December 2017) [Analysis of New York retail energy market for residential customers; recommendations for reform]

Comments of Barbara Alexander before the Delaware Public Service Commission, on behalf of the Delaware Division of the Public Advocate, In the Matter of the Review of Customer Choice in the State of Delaware, Docket No. 15-1693 (December 22, 2017) [Proposals for retail market enhancement programs]

Alexander, Barbara, [Analysis and Evaluation of PEPCO's Supplemental Root-Cause Analysis Report: District of Columbia Customer Satisfaction](#) prepared for the District of Columbia Office of People's Counsel and submitted to the D.C. Public Service Commission in Formal Case No. 1119 (January 2018)

Direct, Rebuttal, and Surrebuttal Testimony of Barbara Alexander on behalf of the Office of Consumer Advocate, before the Pennsylvania Utility Commission, Joint Petition of Metropolitan Edison Company Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company For Approval of their Default Service Program and Procurement Plan for the Period June 1, 2019 Through May 31, 2023, Docket Nos. P-2017-2637855, et seq. (February, March, and April 2018) [Retail Market Enhancement Programs in a default service proceeding]

Direct Testimony of Barbara Alexander on behalf of the Arizona Corporation Commission Staff, before the Arizona Corporation Commission, In the Matter of the Application of Brooke Water, LCC for increase in water rates, Docket No. W-03039A-17-0295 (May 15, 2018) [Analysis of customer service, call center performance, and compliance with prior Commission orders]

Alexander, Barbara, “Residential Demand Charges: A Consumer Perspective,” EUCI Conference, Nashville, TN (May 2018)

Direct Testimony of Barbara Alexander in Opposition to the Joint Stipulation and Recommendation on behalf of the Office of the Ohio Consumers’ Counsel, before the Public Utility Commission of Ohio, Case No. 17-0032-EL-AIR et seq. (June 15, 2018) [Analysis of the prudence of Duke Energy Ohio’s Advanced Metering Infrastructure Deployment and request for inclusion of costs in rate base]

Alexander, Barbara, “Time to End the Retail Energy Market Experiment for Residential Customers,” Harvard Electricity Policy Group (June 2018)

Rebuttal Testimony of Barbara Alexander on behalf of the Office of Consumer Advocate, before the Pennsylvania Public Utility Commission, PUC v. Columbia Gas of Pennsylvania, Inc., Docket No. R-2018-2647577 (July 3, 2018) [Analysis of gas utility billing policies for non-commodity services and retail natural gas suppliers]

Direct Testimony of Barbara Alexander on behalf of TURN and Center for Accessible Technology before the California Public Utility Commission, 2018 Rate Design Window, Docket No. A.17-12-011, et al. (October 26, 2018) [Consumer Protections to Accompany the Transition to Default Time of Use Rates for residential customers; analysis of customer education and messaging]

Direct and Surrebuttal Testimony of Barbara Alexander on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Utility Commission, PUC vs. Pittsburgh Water and Sewer Authority, Docket Nos. R-2018-3002645, R-2018-3002647 (September and October 2018) [Analysis of compliance with Pennsylvania consumer protection and service quality performance of a large water and sewer utility; base rate case]

Direct Testimony of Barbara Alexander on behalf of TURN before the California Public Utility Commission, Southern California Edison Charge Ready 2 Infrastructure and Market Education Programs, Docket No. A.18-06-015 (November 30, 2018) [Analysis of proposed mass market customer education proposal]

Direct, Surrebuttal and Supplemental Surrebuttal Testimony of Barbara Alexander on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Implementation of Chapter 32 of The Public Utility Code Regarding Pittsburgh Water and Sewer Authority – Stage 1, Docket Nos. M-2018-2640802 and M-2018-2640803 (April, May and August 2019) [Analysis of consumer protection, customer service, and customer education programs of large water and wastewater utility]

Direct, Rebuttal, and Surrebuttal Testimony of Barbara Alexander on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Application of Aqua America, Inc., Aqua Pennsylvania, Inc., Aqua Pennsylvania Wastewater, Inc., Peoples Natural Gas Company, LLC and Peoples Gas Company, LLC for all of the Authority and the Necessary Certificates of Public Convenience to Approve a Change in Control of Peoples Natural Gas Company, LLC and Peoples Gas Company LLC by Way of the Purchase of All of LDC Funding, LLC’s Membership Interests by Aqua America, Inc., Docket Nos. A-2018-3006061, A-2018-3006062, and A-2018-3006063 (April and May 2019) [Customer Service, Consumer Protection, and Universal Service conditions for merger]

Testimony in Opposition to Settlement on behalf of The Office of the Ohio Consumers’ Council, before the Ohio Public Utilities Commission, In the Matter of the Commission’s Investigation of PALMco Power OH, LLC dba Indra Energy and PALMco Energy OH, LLC dba Indra Energy, Case No. 19-957-GE-COI (September 4, 2019) [Analysis of proposed settlement for consumer protections and customer remedies]

Testimony in Opposition to Settlement on behalf of The Office of the Ohio Consumers’ Council, before the Ohio Public Utilities Commission, In the Matter of the Commission’s Investigation of Verde Energy USA Ohio LLC, Case No. 19-0958-GE-COI (October 2, 2019) [Analysis of proposed settlement for consumer protections and customer remedies]

Direct Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Joint Petition of Metropolitan Edison Co., Pennsylvania Electric Co., Pennsylvania Power Co. and West Penn Power Co. for Approval of Their Involuntary Remote Disconnect Procedures, Docket No. P-2019-3013979 et al. (March 20, 2020) [Criteria for remote disconnection of service with AMI]

Rebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Interstate Gas Supply, Inc., Direct Energy Services LLC and Shipley Choice LLC v. Metropolitan Edison Co., Pennsylvania Electric Co., Pennsylvania Power Co., West Penn Power Co., Docket Nos. C-2019-30138-5 et al. (May 2020) [Complaint by retail suppliers seeking to bill non-basic services on utility bill]

Alexander, Barbara, “An Evaluation of Arizona Public Service Company’s Customer Education Plan and its Implementation,” prepared on behalf of the Staff of the Arizona Corporation Commission, Docket Nos. E-01345A-19-0236 and E-01345A-19-0003 (May 15, 2020)

Direct and Supplemental Testimony, Rebuttal Testimony, and Surrebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Petition of PPL Electric Utilities Corporation for Approval of a Default Service Program for the Period of June 1, 2021 through May 31, 2025, Docket No. P-2020-3019356 (June-August 2020) [Standard Offer Program and low income shopping program for retail market programs]

Direct, Rebuttal, and Surrebuttal Testimony on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Petition of PECO Energy for Approval of Default Service Program for the Period June 1, 2021 through May 31, 2025, Docket No. P-2020-3019290 (June-July 2020),) [Standard Offer Program and low income shopping program for retail market programs]

Direct, Rebuttal, and Surrebuttal Testimony, on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Petition of Duquesne Light Co. for Approval of Default Service Program for the Period June 1, 2021 through May 31, 2025, Docket No. P-2020-3019522 (July-September 2020), [Standard Offer Program and low income shopping program for retail market programs]

Direct and Surrebuttal Testimony, on behalf of the Pennsylvania Office of Consumer Advocate before the Pennsylvania Public Utility Commission, Pennsylvania Public Utility Commission v. Pittsburgh Water and Sewer Authority, Docket Nos. R-2020-3017951 (water), C-2020-3019348, R-2020-3017970 (wastewater), C-2020-3019349 (July-September 2020) [Base rate case; analysis of customer service and consumer protection programs and policies]

Presentations and Training Programs:

- Presentation on Consumer Protection Policies for Solar Providers, New Mexico Public Regulatory Commission, Santa Fe, NM, January 2017
- Presentation on Residential Rate Design Policies, National Energy Affordability and Energy Conference, Denver, CO., June 2016
- Presentation on “Regulatory-Market Arbitrage: From Rate Base to Market and Back Again,” before the Harvard Electricity Policy Group, Washington, D.C., March 2016.
- Presentation on Residential Rate Design and Demand Charges, NASUCA, November 2015.
- Alexander, Barbara, “Residential Demand Charges: A Consumer Perspective,” presentation for Harvard Electricity Policy Group, Washington, D.C., June 2015.
- Presentation on “Future Utility Models: A Consumer Perspective,” for Kleinman Center for Energy Policy, U. of Pennsylvania, August 2015.
- Presentation, EUCI Workshop on Demand Rates for Residential Customers, Denver, CO [May 2015]
- Presentation, Smart Grid Future, Brookings Institute, Washington, DC [July 2010]
- Participant, Fair Pricing Conference, Rutgers Business School, New Jersey [April 2010]
- Presentation on Smart Metering, National Regulatory Conference, Williamsburg, VA [May 2010]

- Presentation on Smart Metering, Energy Bar Association Annual Meeting, Washington, DC [November 2009]
- Presentation at Workshop on Smart Grid policies, California PUC [July 2009]
- National Energy Affordability and Energy Conference (NEAUC) Annual Conference
- NARUC annual and regional meetings
- NASUCA annual and regional meetings
- National Community Action Foundation's Annual Energy and Community Economic Development Partnerships Conference
- Testimony and Presentations to State Legislatures: Virginia, New Jersey, Texas, Kentucky, Illinois, and Maine
- Training Programs for State Regulatory Commissions: Pennsylvania, Georgia, Kentucky, Illinois, New Jersey
- DOE-NARUC National Electricity Forum
- AIC Conference on Reliability of Electric Service
- Institute of Public Utilities, MSU (Camp NARUC) [Instructor 1996-2006]
- Training Programs on customer service and service quality regulation for international regulators (India and Brazil) on behalf of Regulatory Assistance Project
- Georgia Natural Gas Deregulation Task Force [December 2001]
- Mid Atlantic Assoc. of Regulatory Utility Commissioners [July 2003]
- Illinois Commerce Commission's Post 2006 Initiative [April 2004]
- Delaware Public Service Commission's Workshop on Standard Offer Service [August 2004]



Bill Date
04/21/2021

Account Number

Billing Statement for

Service Location:

Billing Summary

Summary of Charges Due:

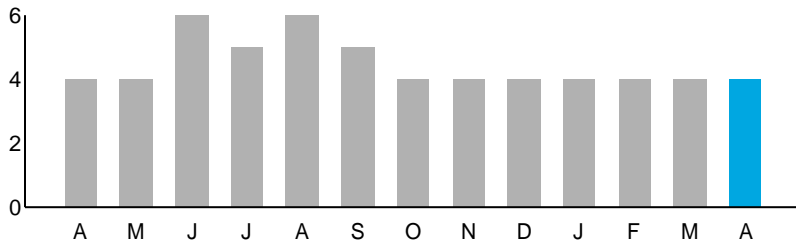
Current Charges:	\$92.89
Installment Plan Charges:	\$51.62
Due on 05/11/2021:	\$144.51

Past Due

PRIOR BALANCE \$3,135.92	-	PAYMENTS \$161.16	=	PAST DUE \$2,974.76	+	Due on 05/11/2021 \$144.51	=	TOTAL BALANCE \$3,067.65
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My Water Usage

Average Monthly Usage in 1,000 Gallons

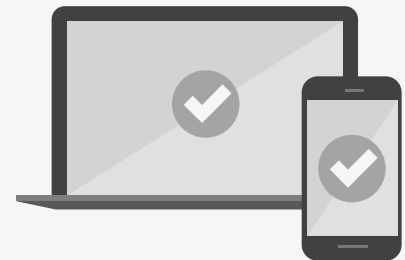


4,000
Total gallons used
this period

125
Average gallons used
per day

4,000 Gallons / 32 Days = 125 Average Daily Gallons

Making the switch to eBilling couldn't be easier.



Enrolling in paperless billing is quick and easy.
Sign up today at

www.pgh2o.com/ebilling



1200 Penn Avenue, Pittsburgh, PA 15222

MAKE CHECK OR MONEY ORDER
PAYABLE TO: PWSA

Account Number



PAST DUE AMOUNT
\$2,974.76

DUE DATE
05/11/2021

CURRENT CHARGES
\$144.51

TOTAL BALANCE
\$3,067.65

10% annual late payment
applies only to unpaid current
charges.



My Billing Details

Previous Balance	\$3,135.92
Payment - 03/31/2021 - Thank You	-\$120.32
Current Charges	\$92.89
Adjustments	
Miscellaneous Water Credit	-\$24.61
DISC Credit Water	-\$0.76
DISC Credit Sewer Conveyance	-\$0.47
Forgiveness Program	-\$15.00
Total Due On or Before 05/11/2021	\$3,067.65

Current Charges	\$92.89
PWSA	
3,000 gallons @ \$9.80 per 1,000 gallons	\$29.40
3,000 gallons @ \$6.11 per 1,000 gallons	\$18.33
Distribution System Improvement Charge	\$2.39

Allegheny County Sanitary Authority	
Charges billed on behalf of ALCOSAN	
Sewage Treatment	\$42.77

My Meter Readings

Meter #: [REDACTED]	Type: Residential Discount Program
Current:	1,534,000 04/18/2021 Actual
Previous:	1,530,000 03/17/2021 Actual
Usage:	4,000
Days of Service:	32



Did you know that you can pay your PWSA bill for free? Enroll in paperless billing, sign up for Zipcheck, or mail your bill with payment.

The Pittsburgh Water and Sewer Authority
1200 Penn Avenue, Pittsburgh, PA, 15222

Pay-By-Phone
1-833-660-1366 - 24 hours a day / 7 days a week

Customer Service
412-255-2423 - Press Menu Option #5
info@pgh2o.com
Monday through Friday from 8 AM to 6 PM

24/7 Water/Sewer Emergency
412-255-2423 - Press Menu Option #1

Customer Assistance Program
Dollar Energy Fund – 1-866-762-2348

Having difficulty paying your PWSA bill? Call the Dollar Energy Fund to see if you qualify for:
1) Protection from shut-off in winter months
2) Discount on your fixed, monthly PWSA charges
3) A cash grant to help pay your past due charges
4) Private side lead line replacement

Visit us online at www.pgh2o.com for more information or to view a current rates schedule.

Please register any questions or complaints about your bill prior to the due date.

PWSA bills on behalf of ALCOSAN for the treatment of wastewater. ALCOSAN's rates are separate from PWSA. Their rates are set annually and the amount that they charge for the treatment of wastewater is reflected in your bill from PWSA. If you have any questions regarding your ALCOSAN charges please contact them at 412-766-6696.

PAY YOUR PITTSBURGH WATER AND SEWER AUTHORITY BILL WITH CASH AT PARTICIPATING STORES.

Bring this barcode with you to make a payment.
Payments are recognized immediately and are posted on the next business day.

Retailer Instructions:

1. **SCAN** the customer's barcode.
2. The register will **PROMPT** you to enter an amount.
3. **ENTER** the amount the customer wants to pay.
4. **COLLECT** the desired cash amount (and fee, if applicable).
5. When the transaction is **COMPLETE** hand customer the receipt.



799366438020006371683195867891

By accepting or using this barcode to make a payment, you agree to the full terms and conditions, available at vanilladirect.com/pay/terms. After successful payment using this barcode, you may retrieve your full detailed e-receipt at vanilladirect.com/pay/ereceipt.

For PWSA Customer Service, please call 412-255-2423 and press option 5.

powered by
KUBRAEZ-PAY

A \$1.49 processing fee will be added.



DOLLAR GENERAL



Other convenient ways to pay:



Make one time payments via pgh2o.com.



Enroll in eBilling to go green, make fee free payments, and view bills and inserts via pgh2o.com.



Make payment via telephone at 412-255-2423 and press option 2.

PLEASE MAIL TO BELOW ADDRESS.



THE PITTSBURGH WATER AND SEWER AUTHORITY
PO BOX 747055
PITTSBURGH, PA 15274-7055



April 6, 2021

Account Number «Loc_»«Cust_»

«Name»

«Billing_1»

«Billing_2»«Billing_3»«Zip»

Re: «Service_address»

AVOID WATER SHUT OFF BY CONTACTING US NOW

Outstanding Account Balance \$

Atención. Si no comprende este mensaje, comuníquese con el servicio al cliente al 412-255-2423.

The Pennsylvania Public Utility Commission (PUC) moratorium on water shut offs expired on March 31, 2021. **PWSA views shut offs as a last resort, and we have multiple programs available to help you keep your water service active. We do not want to shut off your water, but you must contact us at 412-255-2423 to take advantage of new assistance programs.**

Due to the pandemic, PWSA is offering flexible payment plans to all residential and small business customers. Enrolling in a payment plan is easy and will help you to avoid having your water shut off. Contact PWSA at 412-255-2423 as soon as possible to learn more.

CASH ASSISTANCE, BILL DISCOUNT AND FORGIVENESS PROGRAMS:

You may be eligible to receive a 100% discount on your water/wastewater minimum monthly charges, making the first 1,000 gallons free.

Customers who are approved for the Bill Discount Program and are enrolled in an active payment plan with PWSA are eligible to receive a \$15 reduction of their past due balance for every on-time monthly payment.

Eligible customers can also receive an annual \$300 grant to reduce outstanding water charges. Contact PWSA at 412-255-2423 to learn more.

If you have any questions or need more information, contact us as soon as possible at 412-255-2423. After you talk with us, if you are still not satisfied, you may file a complaint with the PA PUC by calling 1-800-692-7380 or by writing the Pennsylvania Public Utility Commission, Post Office Box 3265, Harrisburg, PA, 17105-3265.


BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Barbara R. Alexander, hereby state that the facts set forth in my REVISED Direct Testimony, OCA Statement 5, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 23, 2021
*314003

Signature: 
Barbara R. Alexander

Consultant Address: Barbara Alexander Consulting, LLC
83 Wedgewood Drive
Winthrop, Maine 04364

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	Docket No. R-2021-3024773 (Water)
	:	
	:	
v.	:	Docket No. R-2021-3024774 (Wastewater)
	:	
	:	
PITTSBURGH WATER AND SEWER AUTHORITY	:	Docket No. R-2021-3024779 (Stormwater)
	:	

DIRECT TESTIMONY
OF
TERRY L. FOUGHT

ON BEHALF OF
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

July 8, 2021

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.**

2 A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, Pennsylvania, 17111.

3

4 **Q BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am a self-employed consulting engineer retained by the Office of Consumer
6 Advocate (OCA) for the purposes of providing testimony in this proceeding.

7

8 **Q. PLEASE DESCRIBE YOUR BACKGROUND AND QUALIFICATIONS.**

9 A. Appendix A, which is attached to this testimony, describes my educational
10 background and applicable experience.

11

12 **Q. DID YOU PROVIDE TESTIMONY IN PREVIOUS PITTSBURGH WATER AND
13 SEWER AUTHORITY (PWSA) RATE CASES?**

14 A. Yes. I provided testimony in the 2018 and 2020 Rate Cases.¹

15

16 **Q. DID YOU PROVIDE TESTIMONY IN THE IMPLEMENTATION OF CHAPTER 32
17 OF THE PUBLIC UTILITY CODE PWSA – STAGE 1 PROCEEDING, DOCKET
18 NO. M-2018-2640802 (WATER) AND DOCKET NO. M-2018-2640803
19 (WASTEWATER)?**

20 A. Yes.

21

¹ Docket Nos. R-2018-3002645 (Water), R-2018-3002647 (Wastewater) and Docket Nos. R-2020-3017951 (Water), R-2020-3017970 (Wastewater).

1 **Q. WHAT ISSUES HAVE YOU BEEN ASKED TO INVESTIGATE REGARDING THE**
2 **PWSA RATE CASES?**

3 A. The OCA requested that I investigate quality of service related to PWSA's water,
4 wastewater and stormwater service.

5
6 **Q. WHAT DID YOUR INVESTIGATION CONSIST OF?**

7 A. In addition to reviewing portions of the last base rate case, my investigation
8 included: (1) reviewing portions of PWSA's filing applicable to Quality of Service;
9 (2) reviewing informal and formal complaints filed by PWSA customers with the
10 PUC; (3) reviewing customer complaints received by PWSA and OCA; (4)
11 reviewing applicable portions of the Direct Testimony and Supplemental Direct
12 Testimony of PWSA witnesses William J. Pickering, PWSA St. No. 1, Barry King,
13 PWSA St. No. 5, Tony Igwe, PSWA St. No. 7 and Keith Readling, PWSA St. No.
14 8; (5) reviewing the Authority's responses to the OCA's Interrogatories regarding
15 quality of service issues; and (6) reviewing the available transcripts from the six
16 Public Input Hearings held in this proceeding on June 28, June 29 and June 30,
17 2021 at 1 p.m. and 6 p.m. each day. During the 2018 Rate Cases, I met with the
18 Authority and inspected some of its facilities on April 19, 2018 and June 22, 2018,
19 and reviewed applicable DEP files on June 23, 2018. The Covid-19 Pandemic
20 prevented additional inspections.

21 I reserve the right to supplement this testimony after reviewing any relevant
22 portions of additional transcripts of the Public Input Hearings when they become
23 available.

1 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF THE AUTHORITY’S WATER**
2 **SYSTEM.**

3 A. PWSA operates the largest combined water and sewer authority in Pennsylvania
4 producing an average of 70 million gallons of treated water daily and providing
5 service to more than 300,000 residents as well as up to 520,000 people during
6 working hours in total throughout the City of Pittsburgh and surrounding
7 communities.²

8 The Water System contains a 117 million gallons per day (mgd) conventional
9 Water Treatment Plant, approximately 964 miles of water mains, over 81,000
10 service lines, more than 25,900 line (isolation) valves, over 7,300 fire hydrants,
11 one raw water pumping station, ten finished water pumping stations, one
12 microfiltration treatment plant, four reservoirs, and ten storage tanks. The
13 Authority’s Water System produces an average of 70 mgd. The total storage
14 capacity of the reservoirs and tanks is approximately 455 million gallons (mg)
15 providing pressure to 15 pressure zones.³

16
17 **Q. IS THE AUTHORITY UNDER ANY ORDERS FROM DEP TO MAKE**
18 **IMPROVEMENTS TO ITS WATER SYSTEM?**

19 A. Yes. A Consent Order and Agreement dated September 6, 2019 (2019 COA)
20 requires the Authority to replace the existing single cell clearwell with a multi-cell
21 clearwell that includes a clearwell by-pass system to ensure continual service if
22 the existing clearwell fails. The 2019 COA also requires the Authority to:⁴

² PWSA St. No. 1, p. 11.

³ Ibid. p. 11. PWSA St. No. 5, pg. 8 refers to 17 pressure zones.

⁴ PWSA St. No. 5, pp. 10-11.

- Rehabilitate or replace Rising Main #3 and Rising Main #4.
- Construct a new redundant rising main from the Aspinwall Pump Station to Lanpher Reservoir.
- Replace the cover and liner on Highland No. 2 Reservoir.
- Replace or rehabilitate the Aspinwall and Bruecken Pump Stations. and
- Eliminate cross-connections i.e., water facilities located in vaults connected to storm or sanitary sewers.

QUALITY OF SERVICE ISSUES - WATER SYSTEM

Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY CONCERNING THE AUTHORITY'S WATER SYSTEM?

A. In this section, I address (1) unaccounted for water (UFW); (2) pressure surveys; (3) maintenance of isolation valves; (4) testing and replacing customer meters (Meter Age); (5) flushing the distribution system; and (6) customer complaints. Later in my testimony, I address party-line service lines related to PWSA's water and wastewater systems.

UNACCOUNTED FOR WATER

Q. WHAT IS MEANT BY THE TERM "UNACCOUNTED FOR WATER"?

A. There are several different procedures for calculating Unaccounted for Water. The PUC Method is shown on Section 500 of the PUC Annual Report Form for Public Water Utilities. According to the PUC procedure, UFW is equal to "Total Water Delivered for Distribution & Sale" minus "Total Sales" minus "Non-Revenue Usage and Allowance." "Non-Revenue Usage and Allowance" includes "Main Flushing," "Blow-off Use," "Unavoidable Leakage," "Located & Repaired Breaks in Mains & Services" and "Other".

1 **Q. WHY IS UFW IMPORTANT?**

2 A. Calculating the amount of UFW is a method of estimating the amount of non-
3 revenue water in a water distribution system due to leaks and inaccurate meter
4 readings. Reducing the non-revenue water saves money in chemical and power
5 costs and provides for important water conservation in areas that have limited
6 water supply sources. The accuracy of the UFW estimate depends on reliable
7 estimates of unavoidable non-metered water uses such as flushing the distribution
8 system, firefighting, normal pipe leakage, repaired main breaks, etc. Keeping track
9 of UFW gives a water utility an indication of the extent of unknown leaks in the
10 distribution system so that informed decisions can be made on the necessity of
11 finding and repairing leaks. The Water Audit methodology established by the
12 International Water Association (IWA) and the American Water Works Association
13 (AWWA) is generally becoming a more accepted method of identifying the
14 amounts of wasted water – Non-Revenue Water (NRW). Both the PUC and
15 AWWA Methods, if properly utilized, provide water utilities with information needed
16 to improve operational efficiency. According to 52 Pa. Code § 65.20(4), “Levels of
17 unaccounted-for water should be kept within reasonable amounts. Levels of UFW
18 above 20% have been considered by the Commission to be excessive.” The
19 Commission has not set similar standards for levels of NRW.

20
21 **Q. HAS THE AUTHORITY PROVIDED INFORMATION ON HOW IT CALCULATES**
22 **UFW?**

23 A. Yes. In response to OCA-VII-3, the Authority submitted a PUC Section 500 Form
24 indicating 43.6% UFW for the year 2020. See Exhibit TLF-1. The estimated

1 volumes of water used for blow-offs, main flushing and firefighting were based on
2 AWWA's Water Audit default values while the volume used for street sweeping
3 was metered and the volumes used for main breaks, reservoir and pipeline
4 draining and inspection and emergency filter backwash were estimated specifically
5 for the Authority's system.

6
7 **Q. DO YOU HAVE ANY COMMENTS ON THE UFW INFORMATION PROVIDED**
8 **BY PWSA?**

9 A. Yes. The PUC Section 500 Form for 2020 is the first one submitted by the
10 Authority and will be used for comparison with future submittals to determine
11 progress in reducing UFW. It should be noted that the volume of water delivered
12 to the distribution system was not totally based on meter readings as the Rising
13 Main 1 and 2 flow meters need to be rehabilitated. As the Authority continues to
14 meter unmetered customers, test/replace existing meters, and replace old water
15 lines, the estimated UFW should become more accurate and also decrease.

16 The PUC Section 500 Form does not consider the volume of treated water that
17 overflows or leaks at the existing clearwell which is now possible to estimate since
18 the water withdrawn from the Allegheny River is now metered.

19
20 **PRESSURES AND PRESSURE SURVEYS**

21 **Q. WHAT ARE THE PUC'S REQUIREMENTS FOR PRESSURES AND PRESSURE**
22 **SURVEYS?**

23 A. According to 52 Pa. Code § 65.6. Pressures:

24 (a) *Variations in pressure.* The utility shall maintain normal operating pressures of
25 not less than 25 p.s.i.g. nor more than 125 p.s.i.g. at the main, except that during

1 periods of peak seasonal loads the pressures at the time of hourly maximum
2 demand may be not less than 20 p.s.i.g. nor more than 150 p.s.i.g. and that during
3 periods of hourly minimum demand the pressure may be not more than 150 p.s.i.g.
4 A utility may undertake to furnish a service which does not comply with the
5 foregoing specifications where compliance with such specifications would prevent
6 it from furnishing adequate service to any customer or where called for by good
7 engineering practices. The authority of the Commission to require service
8 improvements incorporating standards other than those set forth in this subsection
9 when, after investigation, it determines that such improvements are necessary is
10 not hereby restricted.

11 (b) *Pressure gauges.* Within 2 years after the effective date of this section, each
12 utility shall obtain one or more recording pressure gauges for each separately
13 operated pressure zone for the purpose of making pressure surveys as required
14 by this section. These gauges shall be able to record the pressure experienced on
15 the zones and shall be able to record a continuous 24-hour test. Each utility serving
16 1,000 or more customers or 1,000 or more customers in any separately operated
17 zone of a multi-zone utility shall maintain one or more of these recording pressure
18 gauges in service at some representative point or points in each of the pressure
19 zones of the utility.

20 (c) *Telemetry.* An utility may make the pressure surveys required by this
21 section by means of telemetered information electronically transferred to printed
22 copy instead of using recording pressure gauges.

23 (d) *Pressure surveys.* At regular intervals, but not less than once each year, each
24 utility shall make a survey of pressures in its distribution system of sufficient
25 magnitude to indicate the pressures maintained at representative points on its
26 system. The surveys should be made at or near periods of maximum and minimum
27 usage. Records of these surveys shall show the date and time of beginning and
28 end of the test and the location at which the test was made. Records of these
29 pressure surveys shall be maintained by the utility for a period of at least three
30 years and shall be made available to representatives, agents, or employees of the
31 Commission upon request.

32 **Notes of Decisions**

33 *Adequate Pressure*

34 The 25 p.s.i.g. minimum expressed in subsection (a) is not intended to restrict the
35 authority of the PUC to order improvements where service is inadequate;
36 therefore, the PUC has the power to order needed improvements notwithstanding
37 that the pressure in a utility's main meets the standard of the regulation. *Barone v.*
38 *Pennsylvania Public Utility Commission*, 485 A.2d 519 (Pa. Cmwlth. 1984).

39
40 **Q. WHAT ARE DEP'S REQUIREMENTS FOR SYSTEM PRESSURES?**

1 A. According to DEP's Public Water Supply Manual, Part II, Community System
2 Design Standards:

3 1. Pressure

4 All water mains, including those not designed to provide fire protection, shall be
5 sized after a hydraulic analysis based on flow demands and pressure
6 requirements. The pipe system and its appurtenances shall be designed to
7 maintain a minimum pressure of 20 pounds per square inch, gauge (psig) at
8 ground level at all points in the distribution system under all conditions of flow. The
9 normal working pressure in the distribution system should be approximately 60
10 psig.⁵
11

12 **Q. WHAT ARE THE DIFFERENCES BETWEEN THE PUC AND DEP PRESSURE**
13 **REQUIREMENTS?**

14 A. The PUC has a maximum and minimum pressure criterion while DEP has a
15 minimum and normal working pressure criterion. The PUC has a minimum
16 criterion of 25 psi at the main while DEP's minimum criteria is 20 psi at ground
17 level. Assuming the main is buried 4.5 feet below ground, DEP minimum criteria
18 is equivalent to 22 psi at the main.

19 Instead of having a pressure survey requirement for all water systems, DEP
20 imposes a pressure survey requirement on specific systems with known pressure
21 problems.
22

23 **Q. WHAT ARE THE REPRESENTATIVE POINTS ON THE SYSTEM WHERE**
24 **PRESSURE SURVEYS SHOULD BE CONDUCTED?**

25 A. In general, the representative points are highest and lowest ground elevations of
26 the distribution system in each pressure zone.

⁵ Public Water Supply Manual, Part II, Community System Design Standards, May 6, 2006, p. 186-187.

1 **Q. HAS THE AUTHORITY PROVIDED INFORMATION ON SYSTEM**
2 **PRESSURES?**

3 A. The Authority's response to Filing Requirement IX.2 indicates that less than 5% of
4 the Authority's customers, or less than 4,020 customers (0.05 x 80,406), have
5 pressures higher or lower than the range allowed by 52 Pa. Code § 65.6.

6

7 **Q. HAS DEP ORDERED PWSA TO ADDRESS LOW PRESSURES?**

8 A. Yes. DEP's Administrative Order dated October 25, 2017 requires the Authority
9 to identify critical low pressure points, install pressure sensors capable of reporting
10 pressure in "real time," and maintain records of pressure sensor data with the data
11 recorded at no less than fifteen minute intervals. Also, the Authority is required to
12 notify DEP of a loss of a positive pressure and if any two consecutive fifteen minute
13 readings are less than 20 psi.

14 PWSA has installed 61 continuous "real time" pressure sensors at the critical low
15 pressure points and has reported low pressures to DEP.

16

17 **Q. HAS PWSA COMPLETED ANY PROJECTS THAT HAVE INCREASED**
18 **PRESSURES TO THE LOW PRESSURE AREAS?**

19 A. Not that I am aware of; however, according to PWSA Exh. EB-5, pg. 60, the
20 Authority has budgeted a total of \$2,293,358 for FY 2021-2023 for low pressure
21 area remediation. This Exhibit also indicates that \$100,000 was spent prior to FY
22 2021. See Exhibit TLF-2.

23

24 **Q. HAS DEP ORDERED THE AUTHORITY TO ADDRESS HIGH PRESSURES?**

1 A. No. DEP does not have a criteria for high pressure.

2

3 **Q. HAS PWSA DONE ANYTHING TO ADDRESS HIGH PRESSURES?**

4 A. Not that I am aware of.

5

6 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING HIGH PRESSURES?**

7 A. Yes. The Authority should be responsible for all damages to customer facilities
8 where the normal operating pressures exceeds 125 psi unless it installs a pressure
9 reducing valve approved for water supply with the applicable pressure upstream
10 of the customer's service line.

11 PWSA should reduce normal operating pressures exceeding 125 psi in its mains
12 in order to protect customer service lines and inside plumbing. I made the same
13 recommendations in my testimony in the last two rate cases.⁶

14

15 **ISOLATION VALVES**

16 **Q. WHAT ARE ISOLATION VALVES?**

17 A. Isolation valves are installed on water mains so that the water can be shut off in
18 sections of the distribution system in case of a water main break or for main repairs
19 and replacements. Isolation valves are also used to separate different pressure
20 zones.

21

22 **Q. WHAT DOES IT MEAN TO EXERCISE ISOLATION VALVES?**

⁶ Docket Nos. R-2018-3002645 & R-2020-3017951.

1 A. Exercising an isolation valve is operating the valve through complete full
2 open/close cycles until it operates with little resistance. This requires some effort
3 even for a well-maintained valve because the number of turns to fully open or close
4 an isolation valve can vary from 12 turns for a 3-inch valve to 38 turns for a 12-
5 inch valve.

6

7 **Q. WHY IS IT IMPORTANT TO EXERCISE ISOLATION VALVES?**

8 A. It is important to exercise isolation valves to prevent the valves from seizing up
9 and getting stuck from corrosion or other deposits adjacent to the valve. An
10 isolation valve that cannot be fully closed will increase the water loss during a water
11 main break and increase the number of customers affected.

12

13 **Q. WHAT HAPPENS IF AN ISOLATION VALVE BECOMES INOPERABLE DUE TO**
14 **LACK OF BEING EXERCISED?**

15 A. The valve either has to be repaired or replaced. Because isolation valves are
16 generally in pavement, they can be very expensive to repair or replace. Even
17 repairing the valve requires that the valve be exposed so that interior parts can be
18 removed and replaced.

19

20 **Q. HOW OFTEN SHOULD AN ISOLATION VALVE BE EXERCISED?**

1 A. According to the National Environmental Services Center at West Virginia
2 University, experts recommend exercising the valves annually, if possible, or at
3 least once every two years.⁷

4 According to AWWA, “Each valve should be operated through a full cycle and
5 returned to its normal position on a schedule that is designed to prevent a buildup
6 of tuberculation [rust formation in pipes as a result of corrosion] or other deposits
7 that could render the valve inoperable or prevent a tight shutoff. The interval of
8 time between operations of valves in critical locations or valves subjected to severe
9 operating conditions should be shorter than for other less important installations
10 but can be whatever time period is found to be satisfactory based on local
11 experience.”⁸

12

13 **Q. WHAT INFORMATION DID PWSA PROVIDE REGARDING EXERCISING**
14 **ISOLATION VALVES?**

15 A. The Authority has made an internal commitment to exercise 1/5 of its valves
16 (approximately 5,200) each year and is on track to meet its 2021 goal.⁹ This
17 compares with exercising just 5,048 of its 25,920 isolation valves during the five
18 years preceding the 2018 rate case.

19

20 **Q. WHAT IS YOUR RECOMMENDATION CONCERNING PWSA’S**
21 **MAINTAINANCE OF ISOLATION VALVES?**

⁷ Tech Brief, Valve Exercising, 2007, Vol. 7, Issue 2, The National Environmental Services Center of West Virginia University, Morgantown, WV.

⁸ American Water Works Association. 1996. Manual of Water Supply Practices, Denver: AWWA.

⁹ PSWA St. No. 5, pg. 17.

1 A. During the 2020 rate case, I recommended that the Authority exercise (or attempt
2 to exercise) 10,000 isolation valves per year until all the valves have been
3 exercised in a 5 year period. In the Settlement of that case, PWSA committed to
4 exercise 5,000 isolation valves per year and to repair the valves that are found to
5 be inoperable.¹⁰ The Authority has set an internal goal to exercise 5,200 valves
6 per year (1/5th of its isolation valves). The 5,000-5,200 minimum is acceptable,
7 unless, the Authority determines that too many of the valves cannot be exercised
8 and must be repaired or replaced. In that event, I recommend that PWSA be
9 required to increase the annual amount exercised. I make this recommendation
10 because, if high percentages of valves do not work in 1/5th of the system, it is likely
11 that high percentages do not work in the other 4/5ths of the system and a more
12 aggressive schedule is needed.

13 To be clear, isolation valves should be repaired or replaced at the time they are
14 found to be inoperable. If they are not repaired at the time they are identified then,
15 once per year, the Authority should submit a schedule to the OCA and the
16 Commission for replacing or repairing those isolation valves that could not be
17 properly exercised during the prior year. After exercising all of its valves and
18 repairing/replacing those it could not exercise, the Authority should be able to
19 develop a reasonable schedule going forward for exercising its isolation valves.
20

¹⁰ R-2020-3017951, Settlement, para. III.H.2.

1 **TESTING AND REPLACING CUSTOMER METERS (METER AGE)**

2
3 **Q. WHAT ARE THE PUC'S REQUIREMENTS FOR TESTING AND REPLACING**
4 **CUSTOMER METERS?**

5 A. The PUC requirements for testing and replacing meters according to 52 Pa. Code
6 § 65.8. Metered service are:

7 (a) *Allowable error.* No water meter which has an error in registration of more
8 than 2% may be placed in service, nor may a water meter which has an error in
9 registration of more than 4% be allowed to remain in service, when water is
10 passing through it at approximately the following rates of flow:

<i>Meter size (inches)</i>	<i>Gallons per minute</i>
5/8	6
3/4	10
1	20
1-1/2	30
2	50
3	90
4	180
6	300

11 (b) *Periodic tests.* No public utility furnishing metered water service may allow a
12 water meter of 1 inch or less nor a water meter of more than 1 inch to remain in
13 service for a period longer than 20 years and 8 years respectively without testing
14 it for accuracy and readjusting it if it is found to be incorrect beyond the limits
15 established in subsection (a). Upon a customer's request the public utilities shall
16 also perform a meter test without charge if a meter has been in service, and has
17 not been tested, for a period greater than that specified in the following table:

<i>Inch Meter</i>	<i>Years</i>
5/8	10
3/4	8
1	6
More than 1	4

18 (c) *Meter test records.* Whenever a water meter is tested, the original test record
19 should be kept indicating the information necessary for identifying the meter, the

1 reason for making the test, the reading of the meter before being disturbed, and
2 the accuracy of the meter together with data taken at the time of the test. This
3 record shall be sufficiently complete to permit the convenient checking of the
4 methods employed and the calculations made. A record shall also be kept,
5 preferably numerically arranged, indicating the date of meter purchase, name of
6 manufacturer, its size, its identification, its various places of installation with
7 dates of installation and removal, and the dates and general results of all tests.
8

9 **Q. HAS PWSA PROVIDED INFORMATION ON METER AGE?**

10 A. The Chapter 110 Report that PWSA submitted to DEP for the year 2020 indicates
11 that the average age of existing meters was 19. See Exhibit TLF-3.

12 Mr. King testified that: (1) PWSA previously agreed to test or replace 10,000
13 meters per year until all undocumented meters are either tested or replaced; (2)
14 10,290 meters were replaced in the calendar year 2019; (3) because of issues with
15 the COVID-19 pandemic, only 5,550 meters were replaced in 2020 and the goal
16 for 2021 is 8,000 meters; and (4) they intend to replace 10,000 meters in
17 subsequent years.¹¹

18 For the Fiscal Years 2021-2025, PWSA has budgeted \$7,025,175 for testing and
19 repairing meters sized one inch or less and \$6,940,364 for meters over one inch.¹²
20

21 **Q. DO YOU HAVE ANY COMMENTS ON THE AGE OF PWSA'S CUSTOMER**
22 **METERS?**

23 A. I agree with Mr. King that the Authority should continue to test or replace 10,000
24 meters per calendar year after calendar year 2021 until all undocumented meters
25 are either tested or replaced.
26

¹¹ PWSA St. No. 5, pp. 17 & 18.

¹² PWSA Exh. EB-5, pp. 65 & 57.

1 **FLUSHING THE DISTRIBUTION SYSTEM**

2 **Q. WHY IS FLUSHING WATER MAINS IMPORTANT?**

3 A. Over time sediments can build up in the pipes and could result in discolored water
4 during flow surges resulting from firefighting and main breaks. This especially
5 occurs in older mains. Too much sediment in the mains can also affect the taste,
6 clarity and color of water.

7
8 **Q. ARE YOU AWARE OF ANY PUC OR DEP REQUIREMENTS FOR MAIN
9 FLUSHING?**

10 A. No. However, most water utilities, especially the larger ones, consider it good
11 practice to flush the distribution system annually when possible.

12
13 **Q. DOES THE AUTHORITY HAVE A PROGRAM FOR FLUSHING ITS
14 DISTRIBUTION SYSTEM?**

15 A. Yes. In previous years, the Authority flushed mains in localized areas where
16 customers complained of water quality. The Authority has agreed to flush 1/3 of
17 its distribution system each year and is on track to inspect hydrants and flush 1/3
18 of the distribution system in calendar year 2021.¹³ I do not recommend any
19 changes at this time until it is known what the results are of the Authority annually
20 flushing of 1/3 of the distribution system.

21

¹³ PWSA St. No. 5, p.18

1 **CUSTOMER COMPLAINTS REGARDING WATER SYSTEM**

2 **Q. DID YOUR INVESTIGATION CONSIDER COMPLAINTS FROM WATER**
3 **CUSTOMERS?**

4 A. Yes. I have reviewed the Authority's Confidential Customer Complaint Log
5 submitted in its supplemental response to OCA-XI-5; and other complaints
6 received by OCA and the PUC.

7
8 **Q. WHAT DID YOUR REVIEW OF THE AUTHORITY'S CONFIDENTIAL**
9 **CUSTOMER COMPLAINT LOG CONSIST OF?**

10 A. The Authority submitted a customer complaint/call log on a live Excel spreadsheet
11 which I sorted in a manner to determine if there were several complaints regarding
12 the same issue that occurred around the same place and time. See Exhibit TLF-
13 4.¹⁴

14
15 **Q. DO YOU HAVE CONCERNS THAT THE CUSTOMER COMPLAINT/CALL LOG**
16 **SUBMITTED BY THE AUTHORITY REGARDING THE WATER SYSTEM IS NOT**
17 **COMPLETE?**

18 A. Yes. I have noticed that certain complaints were not included in the 2020 Log that
19 were included in the log submitted in the previous rate case. For example, the
20 2020 Log does not include any complaints regarding "pressure" or "no water"
21 whereas the 2018 and 2019 Logs included 500 "no water" complaints and 385 "low

¹⁴ PWSA marked its responses to OCA-XI-5 as confidential. PWSA has confirmed that the confidential information is the customer names, addresses and account numbers. The information that I reference here is not considered to be confidential by PWSA.

1 volume/pressure” complaints. See Exhibit TLF-5.¹⁵ I also note that the 2020 Log
2 does not include any complaints regarding high bills and “catch-up” bills due to
3 faulty or non-registering meters. As I discuss later in my testimony and OCA
4 witness Alexander discusses in OCA Statement 5, many formal complaints were
5 filed about this issue, so it is likely that PWSA also received complaints.

6
7 **Q. DO YOU HAVE ANY OTHER COMMENTS CONCERNING THE 2021 WATER**
8 **SYSTEM LOG?**

9 A. Yes. The category “Investigate Lid” appears to have many (about 50%) calls
10 concerning the wastewater and stormwater systems that were incorrectly entered
11 as being related to the water system. The Authority should make sure that
12 complaint calls are logged to the correct system.

13
14 **Q. WHY IS AN ACCURATE CUSTOMER COMPLAINT LOG IMPORTANT DURING**
15 **A RATE CASE?**

16 A. Generally, it allows for a reoccurring review of the utility’s response to customer
17 complaints. It is especially important in the Authority’s case as it can be used as
18 an indication of how completion of the Authority’s major improvement projects
19 affect its service to customers.

20
21 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING CUSTOMER LOGS?**

22 A. Yes. The Authority should provide a complete and accurate customer complaint
23 log in all future cases. As discussed above, complaints received about pressure

¹⁵ R-2020-3017951, OCA St. No. 8, Exh. TLF-8.

1 or “no water” and high bills related to faulty or non-registering meters (“high
2 consumption,” “previously unbilled consumption,” etc.) should be recorded and
3 included in the log. Also, complaints recorded under the category “Investigate Lid”
4 should be identified and correctly classified as either being related to the
5 Authority’s water, sewer or stormwater system.

6
7 **QUALITY OF SERVICE ISSUES - WASTEWATER SYSTEM**

8
9 **Q. WHAT QUALITY OF SERVICE ISSUES ARE INCLUDED IN YOUR TESTIMONY**
10 **CONCERNING THE AUTHORITY’S WASTEWATER SYSTEM?**

11 A. Below I address ownership and maintenance of customer laterals within public
12 rights-of-ways and easements. Later in my testimony, I also address (1)
13 complaints about sewage backups and (2) party-line service lines.

14
15 **Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF THE AUTHORITY’S**
16 **WASTEWATER SYSTEM.**

17 A. The Authority’s Wastewater System contains approximately 1,220 miles of
18 sanitary, storm and combined sewer lines, 29,000 manholes, approximately
19 30,000 catch basins and inlets, 38 combined sewer outfalls, 185 storm outfalls and
20 four pump stations designed to carry both storm and sanitary flows. About 75% of
21 the system is serviced by combined sewers (both wastewater and stormwater are
22 collected in one pipe) and the remaining 25% are designed as separate sewage
23 and stormwater piped systems. The wastewater collection and conveyance
24 system discharges to a regional system that conveys sewer flows through trunk

1 sewers to deliver to a wastewater treatment plant which services eighty-three
2 cities, towns and boroughs in Allegheny County.¹⁶

3
4 **Q. IS THE AUTHORITY REQUIRED TO MAKE IMPROVEMENTS TO ITS**
5 **WASTEWATER SYSTEM?**

6 A. Yes. PWSA is required to reduce the amount of combined sewer overflows as part
7 of the USEPA, DEP and the Allegheny County Sanitary Authority (ALCOSAN)
8 Consent Degree. The Authority is presently implementing its Green First Program
9 that ALCOSAN and USEPA agreed to accept in September 2019.

10
11 **Q. WHAT WASTEWATER IMPROVEMENTS ARE BUDGETED THROUGH**
12 **FISCAL YEAR 2025?**

13 A. For the Fiscal Years 2021-2025, PWSA has budgeted the following wastewater
14 projects:¹⁷

- 15 • 31st Ward Sewer System @ \$6,214,039.
- 16 • Browns Hill Road Sewer Pump Station Replacement @ \$1,500,000.
- 17 • 2020-2025 Large Diameter Sewer Rehabilitation @ \$21,249,489.
- 18 • M-29 Outfall Improvements @ \$3,473,539.
- 19 • Maytide Storm and Sanitary Sewer System Improvements @ \$4,596,798.
- 20 • Queenston Sewer Improvements @ \$1,787,050.
- 21 • 2019-2025 Sewer Reconstruction @ \$7,571,297.
- 22 • 2018-2025 Sewers Under Structures @ \$33,958,372.
- 23 • 2019-2025 Small Diameter Sewer Rehabilitation @ \$103,725,599.
- 24
- 25

¹⁶ PWSA St. No. 1, p. 12.

¹⁷ PWSA Exh. EB-5, pp. 71-79.

1 **OWNERSHIP AND MAINTENANCE OF CUSTOMER LATERALS WITHIN PUBLIC**
2 **RIGHTS-OF-WAYS AND EASEMENTS**

3 **Q. WHAT ARE YOUR CONCERNS ABOUT THE OWNERSHIP AND MAINTENANCE**
4 **OF THE CUSTOMER’S SEWER LATERAL?**

5 A. According to PWSA’s wastewater tariff (Rule III.B.7.a), its customers own and are
6 responsible for operation, inspection, maintenance, repair, replacement,
7 abandonment, of sewer laterals within public rights-of-ways and easements all the
8 way to the sewer main.¹⁸ The infographic shown on the next page is posted on
9 PWSA’s website to explain “Pipe Ownership”.¹⁹ The accompanying text states:

10 A sewer lateral runs from the PWSA sewer main to your internal plumbing.
11 The entire sewer lateral is the responsibility of both residential and
12 commercial property owners. PWSA maintains the sewer main and a small
13 portion at the joint, which is known as a wye.
14

15 In comparison, PWSA’s residential water customers do not own service lines all
16 the way to the water main. Their responsibility stops at the curb box, which “is
17 typically located in the sidewalk.” PWSA owns and maintains the portion of the
18 water service line from the curb box to the water main.²⁰
19

¹⁸ Rule III.B.7.a states:

Ownership of Sewer Laterals serving Residential and Non-Residential Properties, up to and including the connection of the Sewer Lateral to the Sewer Main, lies with the property Owner. The property Owner is responsible for the operation, inspection, maintenance, repair, replacement, abandonment, and removal of the Sewer Lateral as so described.

PWSA Tariff Wastewater - Pa. P.U.C. No. 1, First Revised Page No. 35. Also, under Part II (definitions) on page 21, the tariff provides:

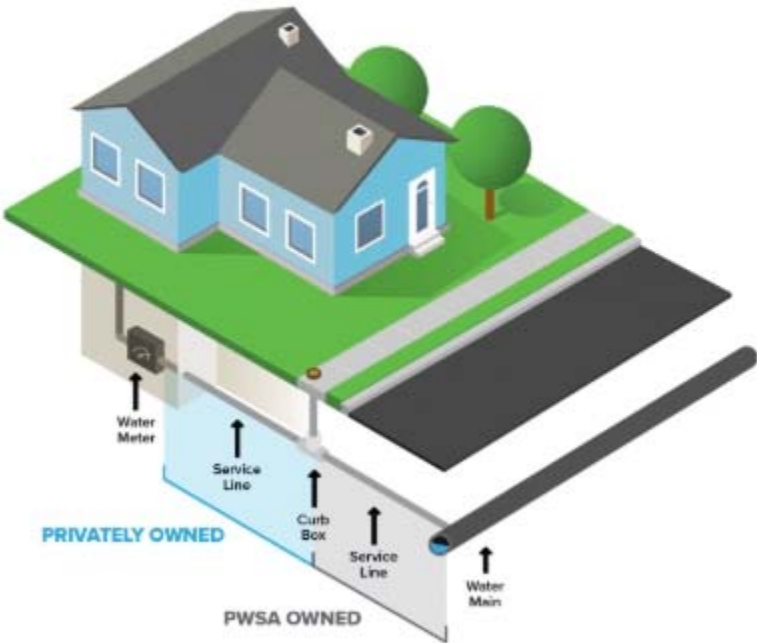
Lateral, Customer Lateral or Sewer Lateral: Wastewater or sewer lines that connect a property to the Authority’s Collection Mains and carry sewage and/or Storm Water from one or more buildings or Premises to the Authority’s Collection Mains.

See also Supp. No. 5 to PWSA Tariff Wastewater - Pa. P.U.C. No. 1, p. 18, Part II, ¶4 (defining “Authority Collection Main”).

¹⁹ <https://www.pgh2o.com/residential-commercial-customers/pipe-ownership>

²⁰ Ibid.

Water Infrastructure



Sewer Infrastructure



1 **Q. WHY DID THE AUTHORITY HAVE A CONSULTANT PREPARE A REPORT**
2 **TITLED *INVESTIGATION AND EVALUATION OF ASSUMING OWNERSHIP OF***
3 ***WASTEWATER LATERALS, JANUARY 15, 2021 (LATERAL OWNERSHIP***
4 ***REPORT)?***

5 A. The Settlement of Stage 1 of the Compliance Plan required the Authority to
6 “conduct a study to investigate the legal, economic and operational feasibility of
7 owning and/or maintaining wastewater laterals within the public-right-of-way”. This
8 study was in response to concerns raised by the OCA about PWSA’s tariff
9 requirement that its customers own and be responsible for sewer laterals all the
10 way to the Authority’s collection main, even though part of the lateral is within a
11 public right-of-way (ROW) or easement. PWSA has not proposed to modify that
12 requirement in this proceeding.²¹

13
14 **Q. WHAT INITIATED OCA’S CONCERNS ABOUT LATERAL OWNERSHIP?**

15 A. A customer owning a house on Brownsville Road filed a Formal Complaint with the
16 PUC regarding his experience regarding solving a sewer backup into his basement
17 on June 10, 2018. The sewer blockage was not removed for six weeks and the
18 matter was not totally resolved for at least six months until the owner complied with
19 the Health Department letter dated December 13, 2018.

20
21 **Q. PLEASE DESCRIBE THE PROCEDURE THAT THE BROWNSVILLE ROAD**
22 **CUSTOMER HAD TO GO THROUGH TO OPEN THE BLOCKAGE THAT WAS**
23 **LOCATED IN A PUBLIC RIGHT-OF-WAY.**

²¹ PWSA Exh. JAQ-5.

1 A. The customer on Brownsville Road had a sewer backup into the basement on June
2 10, 2018. On September 7, 2018, the Owner filed a Formal Complaint with the
3 PUC disputing the ownership of the line and asking for reimbursement of costs.²²

4 As stated in the Complaint, Roto Rooter advised the Owner that the blockage in
5 the sewer was not located on his property, i.e., it was located in a public right-of-
6 way. The Owner called PWSA on June 12, 2018 and was advised that he was
7 connected into a private sewer line and should contact the Health Department.
8 The Health Department told him that he would have to clear the blockage, a dye
9 test would be run, and all other users of the common sewer lateral would have to
10 share the repair cost. Because PWSA continued to decline responsibility for the
11 line, the Owner paid to clear the blockage on July 27, 2018 (over 6 weeks after
12 first notifying PWSA about the problem).

13 The Allegheny County Health Department's Rules and Regulations (AC-701.3.1)
14 state that once an Administrative Authority identifies the existence of a common
15 sewer lateral, all affected property owners must separately connect to a public
16 sewer or record a document that specifies maintenance responsibilities for the
17 owners. A December 13, 2018 letter from the Health Department to the Owner is
18 attached as Exhibit TLF-6, with the Owner's name and street address removed.
19 Thus, whether or not PWSA provides proof that a lateral in a public right-of-way is
20 private, if the Authority does not take responsibility, the Health Department puts
21 that burden on the customer.

²² Docket No. C-2018-3004617.

1 **Q. ARE YOU AWARE OF OTHER COMPLAINTS BY CUSTOMERS REQUIRED TO**
2 **MAKE REPAIRS TO A LATERAL IN A PUBLIC ROW?**

3 A. A recent Formal Complaint²³ was filed by an owner/customer on Aylesboro Avenue
4 who stated that he has had two sewer backups in his basement (2014 and 2020).
5 The customer stated that his sewer lateral connects to the sewer main under
6 Denniston Street in close proximity to an Authority water main. According to the
7 Formal Complaint: (1) the blockage was located under Denniston Street
8 approximately 20 feet from PWSA's sewer main and in close proximity to a PWSA
9 water main; (2) the Authority was issued multiple street opening permits in the
10 vicinity of the customer's lateral during the 25 years the customer owned the
11 property; and (3) the damage to the customer's lateral (that led to the sewage
12 backups) may have been caused by PWSA work under Denniston Street. This
13 may be another case where the customer has suffered sewage and flooding
14 damages and is being required to repair a sewer lateral in a public ROW.

15
16 **Q. IS IT YOUR OPINION THAT CUSTOMERS SHOULD NOT BE RESPONSIBLE**
17 **FOR OWNING THE SEWER LATERAL WITHIN PUBLIC ROWS AND**
18 **EASEMENTS?**

19 A. Yes. I provided testimony stating that opinion in PWSA's 2018 and 2020 Rate
20 Cases.

21

²³ Docket No. C-2020-3022171.

1 **Q. PLEASE SUMMARIZE YOUR REASONS WHY PWSA CUSTOMERS SHOULD**
2 **NOT BE RESPONSIBLE FOR OWNING THE SEWER LATERAL WITHIN**
3 **PUBLIC ROWs AND EASEMENTS?**

4 A. As I previously testified in the 2018 and 2020 rate cases, it is my opinion that
5 customers should not be responsible for owning the sewer lateral within public
6 rights-of-ways and easements because (1) customers do not control the use of the
7 land within public rights-of-ways and easements; (2) other utilities are granted
8 permission to install their facilities near the sewer laterals without the consent of
9 the customers; and (3) customers should not be responsible for damages to the
10 sewer laterals caused by poor roadway installation and maintenance such as
11 roadway settlement, heavy truck vibrations due to poor pavement conditions,
12 manholes and inlets near service laterals being struck by snow plows, etc., and
13 damages to the service laterals from other utilities' installations, repairs and
14 maintenance in the public ROW, settling of the sewer main, or sinkholes.²⁴ From
15 January 1, 2018 through June 28, 2021, the Authority did 2,497 sinkhole
16 investigations. See Exhibits TLF-4 & 5.

17 As shown above, PWSA's residential water customers with service lines less than
18 1-inch are not responsible for their service lines within public rights-of-ways and
19 easements.

²⁴ Also, it is my engineering opinion that sinkholes are more likely to result from installation of streets, sewer mains and water mains than residential customer activities.

1 **Q. ARE THERE OTHER REASONS WHY YOU BELIEVE THAT THE AUTHORITY**
2 **SHOULD OWN SEWER LATERALS WITHIN PUBLIC ROWS AND**
3 **EASEMENTS?**

4 A. Yes. It is likely that Authority ownership of sewer laterals within public ROWs and
5 easements would be more cost effective for all parties (the Authority &
6 owner/customers). In terms of economies of scale, the Authority is replacing water
7 and sewer mains every day compared to a single customer hiring a private
8 contractor to replace one lateral. Also most owner/customers are not experienced
9 in the procedures for dealing with sewer lateral repairs in public ROWs/easements
10 (street opening permits, traffic control, etc.) compared to the Authority who has
11 considerable experience. This gives the Authority the advantage in terms of
12 avoiding unnecessary cost and delay in making the repair.

13
14 **Q. HAVE YOU REVIEWED THE LATERAL OWNERSHIP REPORT?**

15 A. Yes.

16
17 **Q. DOES THE LATERAL OWNERSHIP REPORT INDICATE THAT ACT 120 AND**
18 **PROPOSED TITLE 52 PUC REGULATIONS MAY ALLOW THE AUTHORITY TO**
19 **TAKE STEPS TO ELIMINATE OCA'S CONCERNS ABOUT OWNERSHIP OF**
20 **THE SEWER LATERALS WITHIN PUBLIC ROWS AND EASEMENTS?**

21 A. Yes. Section 2.4 of the Sewer Lateral Ownership Report indicates that Act 120
22 and the proposed Title 52 PUC wastewater regulations may allow the Authority to

1 take steps to eliminate many of OCA's concerns about ownership of the sewer
2 laterals within public rows and easements.²⁵

3
4 **Q. DO YOU AGREE?**

5 A. No. The new law and regulations may help but will not eliminate the OCA's
6 concerns. Section 2.5 of the Lateral Ownership Report discusses that PWSA's
7 other capital improvement projects may delay the Authority from taking steps to
8 repair or replace customer-owned damaged sewer laterals under an Act 120
9 program.²⁶ Then, even if the Authority did make repairs or replacements under an
10 Act 120 program, PWSA indicates that there would be no change to the customer's
11 responsibility for ownership and future maintenance of the lateral.²⁷ So whether
12 or not PWSA gets approval for an Act 120 program, I continue to recommend that
13 PWSA take ownership of the portion of sewer laterals that are in private ROWs or
14 easements. Specifically, PWSA should change the relevant provisions of its tariff
15 so that customer responsibility stops at the edge of the ROW or easement instead
16 of continuing all the way to the "Authority's Collection Mains".²⁸

17
18 **Q. DOES THE LATERAL OWNERSHIP REPORT ESTIMATE THE AUTHORITY'S**
19 **AVERAGE COST TO REPLACE A SEWER LATERAL?**

20 A. Yes. Section 4.4 estimates that the Authority's average cost to replace the part of
21 a lateral within a public ROW at \$20,000. Replacing the entire lateral was

²⁵ Investigation and Evaluation of Assuming Ownership of Wastewater Laterals, January 15, 2021 by Collective Efforts, LLC, pp. 3-4. The Report is posted at <https://www.puc.pa.gov/pcdocs/1690503.pdf>.

²⁶ Ibid, p. 4.

²⁷ Ibid, p. 3.

²⁸ See footnote 18.

1 estimated at \$35,000.²⁹ As discussed below, the cost estimates are based on
2 assumptions that are not realistic.

3
4 **Q. ARE YOU RECOMMENDING THAT THE AUTHORITY TAKE OWNERSHIP OF**
5 **THE ENTIRE SEWER LATERAL?**

6 A. No. As discussed above, I am recommending that the Authority take ownership of
7 the part of the lateral within public ROWs and easements, not the entire lateral.

8
9 **Q. DOES THE LATERAL OWNERSHIP REPORT ESTIMATE THE AVERAGE**
10 **YEARLY NUMBER OF FAILED LATERALS THAT OCCURRED DURING THE**
11 **CALENDAR YEARS 2017 THROUGH 2019?**

12 A. Yes. In Appendix B of the Lateral Ownership Report, it states that the yearly
13 average number of laterals that failed during that 3-year period was 60.

14
15 **Q. DOES THE LATERAL OWNERSHIP REPORT ESTIMATE THE AVERAGE**
16 **COST FOR AN OWNER/CUSTOMER TO REPLACE A SEWER LATERAL?**

17 A. No. The Lateral Ownership Report did not include any estimates for
18 Owner/Customer cost to replace either the entire sewer lateral or that part of lateral
19 within a public ROW/easement.

20
21 **Q. DOES THE LATERAL OWNERSHIP REPORT ESTIMATE THE AVERAGE TIME**
22 **IT WOULD TAKE EITHER THE AUTHORITY OR AN OWNER/CUSTOMER TO**
23 **REPLACE A SEWER LATERAL?**

²⁹ Ibid, pp. 8-9.

1 A. No.

2

3 **Q. DOES THE LATERAL OWNERSHIP REPORT ESTIMATE THE AVERAGE**
4 **YEARLY NUMBER OF LATERALS THAT FAILED WITHIN THE PUBLIC ROW**
5 **THE CALENDAR YEARS 2017 THROUGH 2019?**

6 A. No.

7

8 **Q. DOES THE LATERAL OWNERSHIP REPORT ESTIMATE THE AUTHORITY'S**
9 **AVERAGE YEARLY COST IF IT HAD REPLACED ALL THE FAILED**
10 **LATERALS WITHIN THE PUBLIC ROW DURING THE CALENDAR YEARS**
11 **2017 THROUGH 2019?**

12 A. No, because it did not determine or estimate the number of laterals that failed in
13 public ROWs/easements during those years.

14

15 **Q. DID THE LATERAL OWNERSHIP REPORT DRAW ANY CONCLUSIONS OR**
16 **MAKE ANY RECOMMENDATIONS BASED ON THE AVERAGE YEARLY**
17 **NUMBER OF LATERALS THAT FAILED DURING THOSE THREE YEARS?**

18 A. No.

19

20 **Q. HOW DID THE LATERAL OWNERSHIP REPORT USE THE AVERAGE**
21 **ESTIMATED COST OF REPLACING A LATERAL?**

22 A. In Section 4.4, it was estimated that replacing all 110,000 laterals would cost
23 PWSA \$3.85 billion, and only replacing that part of the 110,000 laterals within the

1 public ROW would cost PWSA \$2.2 billion.³⁰ In Section 4.5, it was estimated that
2 there would be additional costs to administer acquiring ownership of the sewer
3 laterals.³¹

4
5 **Q. ARE THE ABOVE ESTIMATED COSTS OF REPLACING ALL THE LATERALS**
6 **PART OF A COMPLETE ECONOMIC ANALYSIS?**

7 A. No, a complete economic analysis would at least compare the cost of replacing all
8 the sewer laterals to the cost of replacing the entire sewer system using the same
9 cost data. The cost of replacing the entire sewer system is needed to determine
10 laterals' portion of the value of the entire system.

11 Also, the analysis in the Lateral Ownership Report suggests that PWSA would
12 incur the costs for replacing each sewer lateral as a stand-alone. This does not
13 consider that the repairs or replacements of damaged or risky laterals could be
14 done as part of the Authority's ongoing collection main rehabilitation program,
15 which would be likely to reduce costs, especially because PWSA would already be
16 working in the ROW on its collection main. The replacements could also be done
17 as part of an approved replacement program under Act 120. On the water side,
18 the utilities that have received approval for Act 120 replacement programs have a
19 two-prong approach that replaces lead service lines as part of ongoing main
20 replacement (as PWSA does) and also group the replacements of customer-

³⁰ Ibid, p. 9

³¹ Ibid, p. 9.

1 owned lead service lines together when possible.³² A similar process could be
2 used for damaged sewer laterals.

3 If ownership of the portion of the line in the public ROW or easement is done as
4 part of a tariff change and the actual replacements are done gradually as the
5 laterals fail (estimated by the Authority as 60 per year) or the Authority identifies
6 the need for replacement as part of its other replacement programs or the routine
7 maintenance of its system, that should also reduce the costs estimated in Section
8 4.5 of the Report.

9
10 **Q. DO YOU HAVE ANY GENERAL COMMENTS CONCERNING THE SEWER**
11 **LATERAL INVESTIGATION AND THE OWNERSHIP OF SEWER LATERALS**
12 **WITHIN A PUBLIC ROW/EASEMENT?**

13 A. Yes. The Authority had an opportunity to use the Lateral Investigation to provide
14 justification of the status quo by providing a cost-effective study comparing the
15 Authority's costs of repair/replacement of sewer laterals in the public
16 ROW/easements to the Owner/Customer costs. Instead, the Sewer Lateral
17 Investigation only provided data for the Authority's costs. Also, the Sewer Lateral
18 Investigation did not provide information on the average time required to make
19 repair/replacement of sewer laterals by either the Authority or Owner/Customer.

20

³² Petition of Pennsylvania-American Water Company For Approval of Tariff Changes and Accounting and Rate Treatment Related to Replacement of Lead Customer-Owned Service Pipes, Docket No. P-2017-2606100, Recommended Decision dated August 14, 2019, pp. 6, 7 (Settlement para. 18, 24); Petition of Aqua Pennsylvania, Inc. for Tariff Changes Authorizing Replacement of Customer-Owned Lead Service Lines, Docket No. P-2020-3021766, Recommended Decision dated May 28, 2021, pp. 6-7.

1 **Q. DO YOU STILL RECOMMEND THAT THE AUTHORITY TAKE STEPS TO OWN**
2 **THE SEWER LATERALS WITHIN PUBLIC ROWs/EASEMENTS (THE**
3 **PRIVATE/PUBLIC OWNERSHIP SCENARIO IN THE LATERAL OWNERSHIP**
4 **REPORT)?**

5 A. Yes, I recommend that PWSA take the steps necessary to take ownership and
6 responsibility for the maintenance of the portion of the sewer lateral within a public
7 ROW/easement, including making the necessary changes to its tariff.

8
9 **Q. DO YOU HAVE AN ESTIMATE OF HOW MUCH IT WILL COST PWSA TO**
10 **IMPLEMENT YOUR RECOMMENDATION?**

11 A. The Lateral Ownership Report estimated that 60 laterals fail each year. Although
12 the Report did not consider what portion of the failures were in the part of the lateral
13 in the public ROW, it is reasonable to assume that half of the failures will occur in
14 the part of the line that is in the public ROW. It is also reasonable to assume that
15 the cost of replacement will be less than \$20,000 per lateral if the replacement is
16 coordinated with a portion of the laterals are replaced as part of the Authority's
17 current replacement program or an additional program under Act 120, as
18 discussed above. Assuming that reduces costs by one-fourth, the cost would be
19 \$450,000 per year (30 laterals x \$15,000). I consider that to be a generous
20 estimate, the costs could be much less. OCA witness Mugrace addresses this
21 cost in OCA Statement No. 1.

22

1 **QUALITY OF SERVICE ISSUES - STORMWATER SYSTEM**

2
3 **Q. WHAT STORMWATER IMPROVEMENTS ARE BUDGETED THROUGH**
4 **FISCAL YEAR 2025?**

5 **A.** The Authority has budgeted the following wastewater projects through 2025:³³

- 6 • Bus Rapid Transit (BRT) Stormwater Infrastructure Improvements @ \$2,035,000.
- 7 • 2020-2025 Catch Basin and Inlet Replacement @ \$38,887,540.
- 8 • Fleury Way Stormwater Infrastructure Improvements @ \$730,141.
- 9 • Four Mile Run Infrastructure Improvements @ \$19,800,000.
- 10 • Lawn and Ophelia @ \$600,000.
- 11 • Martin Luther King Field Stormwater Infrastructure Improvements @ \$3,348,276.
- 12 • Maryland Avenue Stormwater Infrastructure Improvements @ \$2,940,000.
- 13 • Nobles Lane Stormsystems Improvements @ \$343,322.
- 14 • Saw Mill Run MS4 Compliance Projects @ \$3,500,000.
- 15 • Saw Mill Run PWSA & PennDOT Watershed Improvements @ \$1,000,000.
- 16 • Southside Flats Sewer Separation @ \$3,405,242.
- 17 • Southside Stormwater Infrastructure Improvements @ \$4,313,492.
- 18 • Thomas and McPherson Stormwater Infrastructure Improvements @ \$5,707,365.
- 19 • Tide Gate Installations @ \$3,000,000.
- 20 • Volunteer's Field Stormwater Infrastructure Improvements @ \$1,000,000.
- 21 • Wightman Park Stormwater Infrastructure Improvements @ \$1,750,000.
- 22 • Winchester Drive at Grovemount Stormsystem Improvements @ \$554,577.
- 23 • Woodland Road Stormwater Infrastructure Improvements @ \$1,735,000.
- 24 • Woods Run Stream Removal Stormwater Infrastructure Improvements @ \$1,250,000.

25
26 **CUSTOMER COMPLAINTS REGARDING TWO OR MORE OF THE WATER,**
27 **WASTEWATER AND STORMWATER SYSTEMS**

28
29 **Q. DO YOU HAVE ANY GENERAL COMMENTS REGARDING CUSTOMER**
30 **COMPLAINTS (FORMAL OR INFORMAL) THAT YOU REVIEWED?**

31 **A.** Yes. Many of the complaints were either against the new stormwater fee or high
32 bills due to faulty or non-registering meters.
33

³³ PWSA Exh. EB-5, pp. 81-99.

1 **Q. DO YOU HAVE ANY SPECIFIC COMMENTS ABOUT CUSTOMER**
2 **COMPLAINTS REGARDING SEWAGE BACKUPS?**

3 A. Yes. According to Exhibit TLF-4, PWSA opened work orders to investigate 305
4 sewer backups during 2020 and 283 backups in 2021 through June 28. This is an
5 important issue as it is both costly and a health hazard. It is unclear how many of
6 these backups are caused by stormwater flooding the sewers or for other reasons.
7 PWSA is taking steps to reduce the sewer backups from stormwater runoff. The
8 following wastewater and stormwater projects that specifically address sewer
9 backups have been budgeted approximately \$20.4 million for FY 2021-2025:

- 10 • Maytide Storm and Sanitary Sewer System Improvements @ \$4,596,798.
 - 11 • Queenston Sewer Improvements @ \$1,787,050.
 - 12 • 2019-2025 Sewer Reconstruction @ \$7,571,297.
 - 13 • Maryland Avenue Stormwater Infrastructure Improvements @ \$2,940,000.
 - 14 • Wightman Park Stormwater Infrastructure Improvements @ \$1,750,000.
 - 15 • Woodland Road Stormwater Infrastructure Improvements @ \$1,735,000.
- 16
17

18 **Q. ARE THERE ANY ISSUES THAT APPLY TO BOTH THE WATER AND**
19 **WASTEWATER SYSTEMS THAT YOU WANT TO COMMENT ON?**

20 A. Yes. I would like to comment on “Party-line” service lines.

21

22 **Q. WHAT ARE PARTY-LINE SERVICE LINES?**

23 A. A “party-line” service line is an Authority-approved service line (either water or
24 sewer) that serves more than one customer.³⁴ It is also my understanding that
25 there may be 1,000 or more of these party-line service lines in PWSA’s systems.³⁵

³⁴ A party-line for water service is defined in Supplement No. 5 to PWSA Tariff Water - Pa. P.U.C. No. 1, p. 23 (Rule II.29).

³⁵ The sewer lateral on Brownsville Road could be considered a “party-line” lateral that is within public rights-of-ways.

1 In the event that the “party-line” service needs to be repaired or replaced, it is my
2 understanding that the Authority requires those connected to the party-line service
3 line to resolve the problem.

4 According to the Stage 1 Settlement related to metering, PWSA will pay the costs
5 of the meter and the meter installation for non-municipal properties with party-line
6 service lines, but Applicants will be required to pay for any plumbing changes,
7 including new service lines, in accordance with the Tariff,³⁶ applicable PWSA
8 requirements and county and local plumbing codes.

9
10 **Q. DO YOU HAVE ANY COMMENTS REGARDING PARTY-LINE SERVICE**
11 **LINES?**

12 A. Yes. As discussed in my testimony in the last rate case³⁷, I have three issues with
13 PWSA’s treatment of party-line service lines. The first issue is limited to its water
14 system. PWSA treats its residential (1-inch and under) water customers
15 connected to a party-line differently than its other water customers. Most
16 residential PWSA customers are not responsible for the portion of the service line
17 between the curb box and the Company’s water main.³⁸ But according to PWSA’s
18 water tariff (Rule II.29), “party line” water customers are responsible all the way to
19 the Authority’s main.³⁹

20 Second, PWSA has not approved a party-line connection for over 50 years. It is
21 my opinion that customers who have been paying for water service for over 50

³⁶ Supp. No. 5 to PWSA Tariff Water - Pa. P.U.C. No. 1, p. 36 (Rule III.B.13.a).

³⁷ R-2020-3017951, OCA St. No. 8, pp. 28-31.

³⁸ <https://www.pgh2o.com/residential-commercial-customers/pipe-ownership>

³⁹ “The start of the Party Water Service Line is the terminal point for the Authority’s responsibility for the service connection.” Supp. 5 to PWSA Tariff Water - Pa. P.U.C. No. 1, p. 23 (Rule II.29).

1 years should not be required to replace or repair the portion of a service line
2 between the curb stop and the water main just because they are on a party-line.
3 In addition, PWSA's current policy means those customers may have to excavate
4 in paved streets or alleys to repair a service line or eliminate the "party-line." No
5 customers should have to excavate in paved streets or alleys to repair a service
6 line/lateral.⁴⁰

7 Third, PWSA is proposing to implement a new Residential Permit Fee for
8 "reconnecting to existing water and/or sewer service (includes party line
9 separations)."⁴¹ For the same reasons that I oppose requiring these customers to
10 bear extra costs for repair or replacement just because they are on a party-line, I
11 do not think they should be required to pay a new fee to keep their service because
12 they are on a party-line.

13
14 **Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING PARTY-LINE**
15 **SERVICE LINES?**

16 A. Yes. There should be no distinction for water or sewer customers served by "party-
17 lines" unless the Authority can prove that these owners/customers constructed
18 these service lines without PWSA's knowledge and have not been paying for
19 service. PWSA should modify its tariffs consistent with this recommendation. As
20 part of those modifications, if PWSA is permitted to charge a Residential Permit
21 Fee, party line separations should be excluded.

⁴⁰ Water party-line customers and residential sewer customer should not have to pay for installing a service line in public rights-of-ways or obtaining easements in order to tap into water mains to eliminate a "party-line" that has been allowed for over 50 years.

⁴¹ PWSA Exh. JAQ-4, p. 15A; PWSA Exh. JAQ-6, p. 14A.

1 **Q. ARE THERE ANY OTHER ISSUES THAT YOU WANT TO DISCUSS THAT**
2 **INVOLVE MORE THAN ONE SYSTEM?**

3 A. Yes. I would like to discuss Surface Restoration included in the Authority's projects
4 that include full lane or curb to curb paving, which is in addition to the typical
5 restoration of roadway pavement to its pre-existing usable condition but would
6 show where trenches were excavated.

7
8 **Q. WHAT ARE YOUR COMMENTS REGARDING CONCERNING SURFACE**
9 **RESTORATION?**

10 A. As a condition of having a DSIC, utilities are required to coordinate with
11 municipalities, other utilities, and PennDOT regarding which roadways are going
12 to be impacted by the utilities' infrastructure replacement programs.⁴² This helps
13 utilities to plan to replace their old water and sewer lines just prior to the repaving
14 in order to save costs to their customers. PWSA should do the same by, as much
15 as possible, replacing its water and sewer mains just prior to repaving by the City
16 and other municipalities as it agreed to do in its LTIIP.⁴³ This cannot always be
17 done for making critical repairs but it can be done for planned upgrades and
18 replacements. In addition, in response to discovery, PWSA indicated that
19 coordination with the City may identify opportunities for the City to share in
20 repaving costs.⁴⁴ See Exhibit TLF-7.

21

⁴² 52 Pa. Code § 121.3.

⁴³ M-2018-2640802, M-2018-2640803, P-2018-3005037, P-2018-3005039, Amended Long-Term Infrastructure Plan for the period 2019-2023 (April 27, 2020), p. 58.

⁴⁴ Exh. TLF-7, p. 1 (PWSA response to OCA-VII-40a).

1 **Q. HAVE PWSA'S COORDINATION EFFORTS PROVIDED ANY SAVINGS TO**
2 **DATE?**

3 A. Not that I am aware of. In the 2020 Rate Case, PWSA Exhibit BK-1 shows that
4 \$20,315,569 was budgeted for Surface Restoration during FY 2020 through
5 2024.⁴⁵ See Exhibit TLF-7. This amount was entirely spent in Calendar Year 2020
6 (\$21,305,214).⁴⁶ When asked how much the City contributed to the cost of surface
7 restoration on Authority projects during 2020, PWSA did not identify any amounts
8 contributed by the City.⁴⁷ In this Rate Case, nothing was budgeted for Surface
9 Restoration during FY 2022 through 2025.⁴⁸ See Exhibit TLF-8. Apparently, the
10 cost of surface restoration is now going to be included in each awarded project
11 contract instead of a surface restoration contract. See Exhibits TLF-7 & 8.

12
13 **Q. DO YOU HAVE ANY RECOMMENDATIONS CONCERNING THE REPAVING**
14 **COSTS?**

15 A. Yes. The Authority should ensure that it coordinates projects that are not an
16 emergency or part of a DEP or EPA deadline with the City, Department of
17 Transportation, and other utilities to minimize repaving costs.

18
19 **Q. DOES THIS COMPLETE YOUR WRITTEN DIRECT TESTIMONY?**

20 A. Yes, at this time. I reserve the right to supplement this testimony either in writing
21 or orally if additional relevant information is received.

⁴⁵ Exh. TLF-7, p. 3 (R-2020-3017951, PWSA Exh. BK-1, p. 54).

⁴⁶ Exh. TLF-7, p. 4 (PWSA response to OCA-XI-9).

⁴⁷ Exh. TLF-7, p. 1 (PWSA response to OCA-VII-40b).

⁴⁸ Exh. TLF-8 (PWSA Exh. EB-5, p. 106).

BACKGROUND AND QUALIFICATIONS

TERRY L. FOUGHT, P.E.

Education

Cleveland State University, Cleveland, Ohio, Bachelor of Civil Engineering, 1967

Professional Registrations

Professional Engineer, Pennsylvania, PE-023343-E, 1975

Professional Engineer, New Jersey, GE 25392, 1978 (Inactive)

Professional Engineer, Virginia, 10850, 1979 (Inactive)

Professional Land Surveyor, Pennsylvania, SU-000194-A, 1980 (Inactive)

Employment

From March 1983 to date, I have been a self-employed consulting engineer engaged in providing consulting engineering services to water and wastewater utilities, both private and municipal.

From May 1969 to March 1983, I was employed by E. H. Bourquard & Associates, Inc. as a project engineer to water and wastewater clients. At the time I left the firm I was a vice-president.

From 1962 to 1969, I was employed by the State of Ohio, Department of Highways and the Geauga County Ohio Sanitary Engineers Office as an engineer's assistant to assistant sanitary engineer with breaks in employment to attend college and 1½ years active duty military service.

Experience

I have prepared studies related to and designed water supply, treatment, transmission, distribution and storage facilities. I have provided services to the following private and municipal water suppliers: Amber Hill Mobile Home Park, Brockway Borough Municipal Authority, Dallas Water Company, Eastern Gas and Water Investment Company, Haddonfield Hills Development, Halifax Borough, Langhorne Spring Water Company, Mifflintown Municipal Authority, Neshaminy Water Resources Authority, Newberry Water Company, Pleasant View Mobil Home Park, H. B. Reese Candy Company, Shavertown Water Company, Smethport Water Company, Tunkhannock Water Company, and Watts Business Center.

I have prepared studies related to and designed wastewater collection and interceptor sewers, pumping stations and force mains, and treatment plants. I have provided services to the following private and municipal sewerage utilities: Brockway Glass Company, Central Dauphin School District, Clean Waste Technologies, Inc., Dauphin Borough, Dauphin Borough Municipal Authority, Halifax Area School District, Halifax Municipal Authority, Mercersburg Borough, Middle Paxton Township, Newberry Sewer Company, Newberry Township Municipal Authority, Park-away Park Family Campground, Reading Township Municipal Authority, Reynoldsville Borough, Saint Thomas Township, and Watts Business Center.

I have prepared over 100 stormwater management and drainage plans for land development and subdivision plans in Cumberland, Dauphin, and York Counties. Most of these plans included the design of storm sewer collection systems.

List of Public Utility cases which I have testified or provided substantial assistance:

NEW JERSEY BUREAU OF PUBLIC UTILITIES

<u>Docket Number</u>	<u>Company Name</u>
7712-1140	City of Trenton
787-847	Hackensack Water Company
814-119	City of Trenton
8310-862	City of Trenton

PENNSYLVANIA PUBLIC UTILITY COMMISSION

<u>Docket Number</u>	<u>Company Name</u>
C-2010-2175673	Pennsylvania-American Water Company
C-2011-2259004	Endsley v PAWC
C-2012-2332951	Tschachler v UGI
C-2014-2447138	Hidden Valley Utility Services - Water
C-2014-2447169	Hidden Valley Utility Services - Wastewater
C-2018-2644592	Winola Water Company
C-2020-3022354	McKercher v Borough of Hanover (Water)
F-2011-2280415	Lynette Lugo Lopez v PGW
F-2012-2311590	Belinda Lyles v Aqua
F-2012-2330753	Scott v PGW
I-840377	Pennsylvania Gas and Water Company
I-00050109	PAWC High Fluoride Incident
I-00072313	WP Water & Sewer Co.
I-2009-2109324	Clean Treatment Sewer Company
I-2016-2526085	Delaware Sewer Company
P-2008-2075142	Pennsylvania-American Water Company
P-2014-2404341	Delaware Sewer Company
P-2017-2584953	Aqua Pennsylvania, Inc.
P-2017-2594725	Newtown Artesian Water Company
P-2017-2585707	Pennsylvania-American Water Company
P-2017-2589724	Suez Water Pennsylvania, Inc.
P-2020-3020914	Twin Lakes Utilities, Inc.
R-00850174	Philadelphia Suburban Water Company
R-00932785	Meadows Water Company
R-00963708 (Sewer)	Wynnewood Water & Sewer Corporation
R-00963709 (Water)	Wynnewood Water & Sewer Corporation
R-00984257	Consumers Pa. Water Company
R-00984334	National Utilities, Inc.
R-00984375	City of Bethlehem
R-00994672	Superior Water Company
R-00005031	Penn Estates Utilities, Inc.
R-00005050	Emporium Water Company
R-00005212 (Sewer)	Pennsylvania-American Water Company
R-00005997	Jackson Sewer Corporation
R-00027982 (Sewer)	Pennsylvania-American Water Company
R-00049862	City of Lancaster – Sewer Fund
R-00050607	Glendale Yearound Sewer Co.
R-00050659	Wonderview Water Co.
R-00050673	Pocono Water Co.
R-00050678	Mesco, Inc.

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

<u>Docket Number</u>	<u>Company Name</u>
R-00050814	Marietta Gravity Water Co.
R-00051030	Aqua Pennsylvania, Inc.
R-00051167	City of Lancaster – Water Fund
R-00061297	Emporium Water Co.
R-00061492	Reynolds Disposal Co.
R-00061496	Columbia Water Co.
R-00061617	Allied Utilities Services
R-00061618	Imperial Point Water Co.
R-00061625	Phoenixville Sewer Fund
R-00061645	Eaton Water Co.
R-00062017	Borough of Ambler Water Department
R-00072074 (Sewer)	Aqua PA, Little Washington Division
R-00072075 (Sewer)	Aqua PA, Chesterdale/Williamstown Division
R-00072351	Village Water Company
R-00072491	Clarendon Water Company
R-00072492	City of Bethlehem, Bureau of Water
R-00072493 (Water)	Total Environmental Solutions, Inc., Treasure Lake
R-00072711	Aqua PA
R-2008-2020729	Blue Knob Water Company
R-2008-2020873	Warwick Drainage Company
R-2008-2020885	Warwick Water Works, Inc.
R-2008-2032689	PAWC Coatesville Wastewater Operations
R-2008-2039261	Superior Water Company
R-2008-2045157	Columbia Water Company
R-2008-2047291	Rock Spring Water Company
R-2008-2079310	AQUA, PA
R-2008-2081738	Little Washington Wastewater Company
R-09-2097323	Pennsylvania-American Water Company
R-2009-2102464	Reynoldsville Water Company
R-2009-2103937	PA Utility Company, Inc (Water)
R-2009-2103980	PA Utility Company, Inc (Sewer)
R-2009-2105601	Fryburg Water Company
R-2009-2110093	Birch Acres Water Company
R-2009-2115743	Lake Spangerberg Water Company
R-2009-2116908	Hanover Borough Water
R-2009-2117289	Utilities Inc, Westgate (Water)
R-2009-2117532	Penn Estates Utilities Inc (Water)
R-2009-2117750	Newtown Artesian Water Company
R-2009-2121928	Clean Treatment Sewage Company
R-2009-2122887	United Water Pennsylvania, Inc
R-2009-2132019	AQUA, PA
R-2010-2157062	Tri-Valley Water Supply Company, Inc
R-2010-2166208	Pennsylvania American Water Company (Wastewater)
R-2010-2171339	Reynolds Disposal Company
R-2010-2171918	TESI, Treasure Lake, Water Division
R-2010-2171924	TESI, Treasure Lake, Sewer Division
R-2010-2174643	City of Lock Haven
R-2010-2179103	City of Lancaster Water Department
R-2010-2191376	Superior Water Company
R-2010-2194499	Dear Haven Water Company
R-2010-2194577	Dear Haven Sewer Company

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

<u>Docket Number</u>	<u>Company Name</u>
R-2010-2207833	Little Washington Waste Water, Masthope Division
R-2010-2207853	Little Washington Waste Water, SE Consolidated Division
R-2011-2218562	CMV Sewage Company, Inc.
R-2011-2232243	Pennsylvania-American Water Company
R-2011-2232985	United Water Company
R-2011-2244756	City of Bethlehem- Bureau of Water
R-2011-2246415	Twin Lakes Utilities, Inc.
R-2011-2248531	Wonderview Sanitary Facilities
R-2011-2248937	Fairview Sanitation Company
R-2011-2251181	Borough of Quakertown, Water
R-2011-2255159	Penn Estates Utility Inc - Water
R-2012-2286118	Audubon Water Company
R-2012-2330887	North Heidelberg Sewer Company
R-2012-2310366	City of Lancaster Sewer Fund
R-2012-2311725	Borough of Hanover - Sewer
R-2012-2315536	Imperial Point Water Company
R-2012-2336662	Rock Springs Water Company
R-2013-2350509	City of DuBois, Bureau of Water
R-2013-2355276	Pennsylvania-American Water Company
R-2013-2360798	Columbia Water Company
R-2013-2370455	Penn Estates Utilities, Inc. - Sewer Division
R-2013-2367108	Fryburg Water Company
R-2013-2367125	Cooperstown Water Company
R-2013-2390244	City of Bethlehem – Bureau of Water
R-2014-2400003	Borough of Ambler – Water Department
R-2014-2420204	Pocono Waterworks Company, Inc. (Water)
R-2014-2420211	Pocono Waterworks Company, Inc. (Sewer)
R-2014-2402324	Emporium Water Company
R-2014-2430945	Plumer Water Company
R-2014-2428304	Borough of Hanover Water Department
R-2014-2410003	City of Lancaster-Bureau of Water
R-2014-2427035	Venango Water Company
R-2014-2427189	B E Rhodes Sewer Company
R-2014-2447138	Hidden Valley Utilities Services - Water
R-2014-2447169	Hidden Valley Utilities Services – Sewer
R-2014-2452705	Delaware Sewer Company
R-2015-2462723	United Water Pennsylvania
R-2015-2470184	Borough of Schuylkill Haven Water Department
R-2015-2479962	Corner Water Supply
R-2015-2506337	Twin Lakes Utilities, Inc.
R-2016-2538600	Community Utilities of Pennsylvania, Inc.
R-2016-2554150	City of DuBois – Bureau of Water
R-2017-2595853	Pennsylvania-American Water Company
R-2017-2598203	Columbia Water Company
R-2017-2631441	Reynolds Water Company
R-2018-3000022	York Water Company
R-2018-3000834	Suez Water Company
R-2018-3002645 (Water)	Pittsburgh Water & Sewer Authority
R-2018-3002645 (Sewer)	Pittsburgh Water & Sewer Authority
R-2018-3001306 (Water)	Hidden Valley Utility Services
R-2018-3001307 (Sewer)	Hidden Valley Utility Services

PENNSYLVANIA PUBLIC UTILITY COMMISSION (Continued)

R-2019-3008947 (Water)	Community Utilities of PA
R-2019-3008948 (Sewer)	Community Utilities of PA
R-2020-3019369	Pennsylvania American Water Company
R-2020-3019612	Reynolds Disposal Company
R-2020-3020256	City of Bethlehem -Water
R-2020-3020917	Audubon Water Company

OCA EXHIBIT TLF-1

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set VII in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

Request: OCA-VII-3 Please provide copies of PWSA’s unaccounted for water based on the PUC Section 500 Method for the calendar year 2020. Include the procedure for estimating non-revenue water such as water used for blow-offs, street sweeping, flushing, firefighting, main breaks, Clearwell leakage/overflows and Highland Reservoir evaporation, etc. Explain all assumptions used in the calculations.

Response: See OCA-VII-3A for Form 500. The “Notes” tab within the OCA-VII-1 describes our methodologies and assumptions for estimating non-revenue water in a narrative format and are summarized as follows:

- Blow-offs: The PWSA elected to estimate this volume by multiplying the total water consumption with the water audits suggested default rate of 0.25%.
- Street Sweeping: The PWSA provided meters to the City of Pittsburgh to record water usage associated with street sweeping. Each meter was installed with an attached MXU unit, therefore the flow data is being transmitted remotely and billed accordingly. Based on the foregoing, water usage associated with street sweeping is categorized as Billed Metered Authorized Consumption, rather than Unbilled Unmetered Authorized Consumption.
- Flushing: The PWSA elected to estimate this volume by multiplying the total water consumption with the water audits suggested default rate of 0.25%.
- Firefighting: The PWSA elected to estimate this volume by multiplying the total water consumption with the water audits suggested default rate of 0.25%.
- Main Breaks: The PWSA estimates this volume by recording the characteristics of known breaks (area of break, size of main, pressure of main, estimated leak time, etc.) and calculating the estimated water loss.
- Clearwell leakage/overflows and Highland Reservoir Evaporation: These are located prior to the system delivery meters and are therefore not included in the unaccounted for water estimation.
- Reservoir Draining: In 2020, the PWSA drained the Highland Reservoir (North Cell), Lanpher Reservoir (East Cell), Lanpher Reservoir (West Cell) and Lincoln Tank. The work was required for inspection, operation and maintenance and/or construction purposes. The PWSA recorded the pre-drain water surface elevation and post-drain water surface elevation. Based on historical records, we created a spreadsheet to estimate the volume of water discharged for each reservoir and tank.
- Emergency Filter Backwash: The Water Treatment Plant utilizes filters for treatment. Typically, the filters withdraw backwash water directly from the clearwell, which is located before the System Delivery Meters. However, the PWSA also maintains an emergency backwash connection, located after the System Delivery Meters, for O&M purposes. In 2020, the PWSA utilized the emergency backwash connection for 13 days.
- Rising Main Inspection and Disinfection: The PWSA inspected Rising Mains 3 and 4, which runs from the Bruecken Pump Station to the Highland No. 2 Reservoir. The work required draining, disinfection and flushing. Please note that Rising Main 3 and 4 vary between 48-inch and 50-inch, and run for a cumulative 13,107 feet.

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set VII in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

- City Properties: On October 3, 2019, the PWSA and the City of Pittsburgh (City) entered into an updated cooperation agreement. As discussed in PWSA St. No. 1 at 14-17, Act 70 of 2020 provides that the 2019 Cooperation Agreement has the “force and effect of law.” See 71 P.S. §§ 720.211 to 720.213. The 2019 Cooperation Agreement includes provisions to completely transition the City accounts to be billed and metered. In 2019, the PWSA began metering the remainder of the City accounts. The PWSA continues to install meters on the City accounts. As of December 31, 2020, there were only 15 City accounts without a meter, and thus, are still considered Unbilled Unmetered. Please note that the number of unmetered City accounts is a fluctuating number, as we continue to locate unknown services which require a meter.

Response Provided by: Barry King, PE, Director of Engineering
William J. Pickering, Chief Executive Officer
The Pittsburgh Water and Sewer Authority

Dated: May 28, 2021

PWSA

For the Year Ended December 31, 2020

(Company Name)

500. WATER DELIVERED INTO SYSTEM DURING YEAR

Every estimated value shall be supported by such detailed information as will permit a ready identification, analysis, & verification of all relevant facts. The Company shall be prepared to furnish to the Commission this detailed information.

Line No.	Description (a)	(Gallons) (b)	(gpd) (c)
1	Water Delivered for Distribution & Sale:		
2	Water Obtained from Company Sources	23,550,477,000	64,521,855
3	Water Obtained from Other Independent Utilities		
4	Total Water Delivered	23,550,477,000	64,521,855
5	Metered Sales:		
6	Residential	2,850,085,000	7,808,452
7	Commercial	2,843,472,000	7,790,334
8	Industrial	185,868,000	509,227
9	Public (Health & Education)	987,429,000	2,705,285
10	Other Water Utilities	850,243,000	2,329,433
11	Private Fire Protection	15,403,000	42,200
12	Public Fire Protection		
13	Other Metered Sales (Flower Gardens)	1,573,000	4,310
14	Total Metered Sales	7,732,500,000	21,184,932
15	Unmetered Sales:		
16	Residential	27,040,000	74,082
17	Commercial		
18	Industrial		
19	Private Fire Protection		
20	Public Fire Protection		
21	Other Unmetered Sales Identify _____		
21	Total Unmetered Sales	27,040,000	74,082
22	Total Sales	7,759,540,000	21,259,014
23	Non-Revenue Usage Allowances:		
24	Authorized Unmetered Usage:		
25	Main Flushing	17,277,000	47,334
26	Blow-off Use		
27	Others: Reservoir & Rising Main Flushing	136,302,797	373,432
28	Unauthorized Use	17,277,000	47,334
29	Unavoidable Leakage _____ gpd/mile of main	16,174,975	44,315
30	Adjustments:		
31	Located & Repaired Breaks in Mains & Services	5,324,893,655	14,588,750
32	Others Emergency Backwash Procedure	10,532,507	28,856
33	Total Allowances & Adjustments	5,522,457,935	15,130,022
34	Unaccounted-for-Water	10,268,478,848	
35	Percentage Unaccounted-for-Water	43.6%	

Water Distribution System

Low Pressure Area Remediation

PROJECT NUMBER: Unidentified
WARD: Systemwide

PHASE: Not Started
PRIORITY: Regulatory Compliance, Reliability/Operational Flexibility, Level of Service
PROJECT DESCRIPTION: Fix chronically low pressure areas by either extending neighboring higher pressure districts into the area, booster pump stations, or household booster pumps.
PROJECT JUSTIFICATION: This project is in response to the low pressure monitors required by the October 2017 Administrative Order.
RISK(S): Customers may experience temporary service outages as a result of the work on this project.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.
ALTERNATIVES TO THE RECOMMENDED ACTION: There are no practical alternatives to the recommended action.

<u>CASH FLOW SUMMARY</u>								<u>FUNDING SOURCE(S)</u>
	<u>Total Budget (Prior Years Included)</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Total	\$2,393,358	1,029,259	1,093,445	170,654	0	0	\$2,293,358	

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Primary Facility Report for PITTSBURGH W AND S AUTH (18721)
REPORT FOR CALENDAR YEAR JAN 1 TO DEC 31, 2020**

Client: PGH WATER SEW AUTH

PRIMARY FACILITY NAME AND MAILING ADDRESS

Name and Address: PITTSBURGH WATER AND SEWER
AUTHORITY
1200 PENN AVE
PITTSBURGH, PA 15222-4207

Contact Information: WILLIAM J PICKERING
CHIEF EXECUTIVE OFFICER

Phone: 412-255-2099

Facility e-mail: WPICKERING@PGH2O.COM

PEAK DAY WATER USE FOR REPORT YEAR 2020

Date: 01/30/2020 (mm/dd/yyyy)

Gallons Per Day: 80,261,000

MINIMUM DAY WATER USE FOR REPORT YEAR 2020

Date: 11/03/2020 (mm/dd/yyyy)

Gallons Per Day: 51,817,749

POPULATION SERVED

Population Served: 520,000

AVERAGE DAILY WATER USE

<u>Type</u>	<u>Metered Connections</u>		<u>Unmetered Connections</u>	
	<u>Number</u>	<u>Water Use (GPD)</u>	<u>Number</u>	<u>Water Use (GPD)</u>
Domestic	71,179	7,787,117	327	73,880
Commercial	6,936	7,769,049	0	0
Industrial	43	507,836	0	0
Institutional	474	2,697,893	0	0
Bulk Sales to other PWS	11	2,494,609	0	0
Oil and Gas	0	0	0	0
Other	1,433	64,332	3	5,324,135
Water Losses				42,731,516
Total	80,076	21,320,836	330	48,129,531

Explain 'Other' Connections: Metered: Fire lines, Flower Beds, metered but unbilled. Unmetered: Clarifier draining, sludge decanting, online analyzer water usage, unaccounted for loss and evaporation.

BREAKDOWN OF WATER LOSSES FOR THE SYSTEM

Type	Water Use (GPD)
Apparent Losses	134,030
Real Losses	42,597,486
Total Water Losses	42,731,516

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

PRESENT NUMBER OF CONNECTIONS SERVED

Municipality Name	Present Number of Connections						% Pop Served	Multiple Unit Connections	
	Dom	Comm	Ind	Inst	Oil Gas	Other		No. Conn	No. Units
MILLVALE BORO (ALLEGHENY)	1420	184	1	0	0	0	100	0	0
PITTSBURGH (ALLEGHENY)	70086	6752	42	474	0	1436	78	0	0
TOTAL	71506	6936	43	474	0	1436		0	0

METERING, WATER CONSERVATION AND DISTRIBUTION SYSTEM

What is the average age of existing meters? 19 Years

Are you currently installing meters at new connections? YES

Are you currently installing meters at unmetered connections? YES

Is there an active meter replacement program for your water system? YES

How many meters did you replace during the report year? 5600

Did you provide water conservation information to your customers during the report year? YES

What is the type, size (inches), and length of new pipe installed as an extension to your present system during the report year?
0

What is the frequency of flushing the distribution system during the past year? 1

Did you work your hydrants during the report year? YES

Did you work the valves in the system during the report year? YES

Does your system have an active leak detection program? YES

What type of equipment or methods do you use for leak detection?
Electronic Leak Sound Correlators

Does your system have a cross-connection control program? YES

Has the water pressure been inadequate in any part of the system? YES

If yes, explain
PWSA has installed pressure sensors throughout the system. PWSA has found that several locations near our distribution tanks have lower water pressure. Those areas were developed post tank construction. PWSA is monitoring those areas.

Service Area Boundary Map: The box contains the date of the latest submitted service area boundary map for your system. If this date is older than 5 years, blank, or there has been a change in the area since then, please use the online service area boundary mapping tool to review and submit a current map. (See Instructions) 03/30/2021

Describe major system changes such as purchases and transfers:
None

REPORT CONTACT INFORMATION

Report Preparer: DANIEL THIESSEN
PITTSBURGH W AND S AUTH
1200 PENN AVENUE
PITTSBURGH, PA 15222
Phone: 412-485-9251
Email Address: DTHIESSEN@PGH2O.COM

REPORT SUBMISSION INFORMATION

Submitted By: Daniel Thiessen
Submitted On: 03/30/2021
Submitted By Email: dthiessen@pgh2o.com

PWSA Customer Complaint/Call Logs

	2020 thru Dec 31	2021 thru Jun 28
Water System		
Investigate Dirty Water	26	20
Lab - Discolored Water	4	4
Lab - Malodorous (Smell)	15	13
Lab - Poorly Tasting Water	12	4
Lab - Water Causing Illness	1	0
Lab - Water Quality	10	7
Leak Investigation	1249	788
Hydrant Repair	299	124
Hydrant Replacement	11	1
Curb Box Locate/Replace	134	110
Investigate Lid (1)	141	106
Wastewater System		
Investigate Sewer Backups (2)	305	283
Investigate Sewer Smells	70	18
Sewer Line Jetting	24	3
Sewer Line Televising	2	0
Sinkhole Investigation	826	159
Replace Manhole Casings and Covers	31	1
Stormwater System		
Catch Basin Clean/Repair	1	15
Catch Basin Replace	33	7
Retrival from Catch Basin (3)	31	25
Overland Flooding	0	1

(1) Includes many sewer manholes, catch basins & inlet boxes

(2) Include 8 cases of backups in multiple years

(3) Retriving personal belongings dropped in sewer

**Pittsburgh Water & Sewer Authority
Customer Complaint Log**

Complaint	Year	
	2018	2019
Water Service		
No Water	332	168
Discolored Water	67	38
Low Volume/Pressure	184	201
Lead Service Lines		
Material Verification	55	3
Request Replacement	50	22
Water Main Breaks	120	101
Service Line Leaks/Frozen	366	298
Water Meters		
Frozen/Leaking/Broken	631	88
Curb Stop/Boxes		
Inoperable	20	9
Locate and Mark	202	319
Blow out Valve Box	60	20
Curb Box Leaks	34	20
Defective	23	37
Fails to Close Tight	7	2
None Access	482	359
Fire Hydrants		
Repair Leaking/Broken	273	356
Investigate Hydrant		
Low Volume/Pressure	10	7
Flow Tests	127	93
Hydrants Hit/Sheared Off	109	101
Miscellaneous	25	10
Leaks (not included in above)		
Leaks in Street	501	396
Leaks in Sidewalk	51	36
Leaks in Ditch/Vault	9	2
Request Leak Detection	80	118
Request Water Sample	0	4
Water Damage		
To Property	3	0
Valve Operations	6	7
Wastewater System		
Surcharging Manholes	16	12
Sewer Line Breaks	49	20
Customer Sewage Backup	227	177
Sewer Line Jetting (Cleaning)	508	427
Sewer Odor	38	22
TV Sewer Lines	245	157
Stormwater System		
Repair Catch Basins	55	25
Clear Clogged Catch Basins	3,823	2,892
Collapsed Catch Basins	39	4
Clean CSO Outfall	32	40
Miscellaneous	298	213
System Undefined		
Restoration Repairs Needed	40	49
Sinkholes	951	561
Damaged/Missing Lids	384	399
Contractor Restoration	1,264	990
Street/Sidewalk Undermined	30	24
Investigate Problems	1,246	990

COUNTY OF



ALLEGHENY

RICH FITZGERALD
COUNTY EXECUTIVE

December 13, 2018

PROOF OF MAILING

██████████
██████████ Brownsville Road
Pittsburgh, PA 15210

Complaint: 205-18

To Whom This May Concern:

You are hereby notified that the conditions described on the attached inspection report at ██████████ **Brownsville Road, 30th Ward, City of Pittsburgh**, have been found to be in violation of the noted section of the Allegheny County Health Department (ACHD) Rules and Regulations, Article XV, "PLUMBING."

After performing a dye test and inserting a camera, it was found that a common building sewer lateral exists between your property and the property located at ██████████ Brownsville. You are in violation of Sections 102.3, 108.7 and AC-701.3.1 (copy attached).

It was also found that your property is contributing to the sewage leak in Roll Way. In order to abate this complaint, a Registered Master Plumber must file the required plan, pay the required fees, and contact this office for the required inspections within **three (3) days** of receipt of this notice. Failure to comply may result in legal action against you.

As per Section 701.3.1 when the existence of a common sewer lateral is identified, you must connect to the available public sewer, or in the alternative, an easement and mutual maintenance agreement must be recorded in the deeds of all properties involved. The recording must be done in the Recorder of Deeds Office of Allegheny County within **thirty (30) days** of receipt of this notice and once recorded, a copy of the recording along with a copy of the receipt must be submitted to this office. Failure to comply may result in legal action against you.

Should you care to discuss these violations and methods of correction, you may contact the District Plumbing Office (Monday through Friday from 8:00am to 3:30pm) by telephoning me at 412-578-7934.

Pursuant to Article XI entitled Hearings and Appeals, you are hereby notified that you have thirty (30) days in which to file an appeal from the date of this notice. The notice of appeal shall be in writing and filed in the ACHD Office of the Director, 542 4th Avenue, Pittsburgh, PA 15219. In the event that an appeal is not filed within thirty (30) days from the date of this notice, the within action shall become final.

Sincerely,

Jeffrey S. Czochara /am
Jeffrey Czochara
Plumbing Inspector Supervisor

JAC/am

Attachments: Inspection Certificate of 12/11/18 & Noted Section
Cc: File



KAREN HACKER, MD, MPH, DIRECTOR
ALLEGHENY COUNTY HEALTH DEPARTMENT
PLUMBING PROGRAM

3901 PENN AVENUE • BUILDING 5 • PITTSBURGH, PA 15224-1318
PHONE: 412.578.8036 • FAX: 412.578.8053 • WWW.ACHD.NET



**ARTICLE XV PLUMBING
RULES AND REGULATIONS OF THE ALLEGHENY COUNTY HEALTH
DEPARTMENT**

Section 102.3

MAINTENANCE

All plumbing systems, materials and appurtenances, both existing and new, and all parts thereof, shall be maintained in proper operating condition in accordance with the original design in a safe and sanitary condition. All devices or safeguards required by this code shall be maintained in compliance with the code edition under which they were installed.

The owner or owner's designated agent shall be responsible for maintenance of plumbing systems. To determine compliance with this provision, the code official shall have the authority to require any plumbing system to be reinspected.

Section 108.7

UNSAFE PLUMBING

Any plumbing regulated by this code that is unsafe or that constitutes a fire or health hazard, insanitary condition, or is otherwise dangerous to human life is hereby declared unsafe. Any use of plumbing regulated by this code constituting a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage or abandonment is hereby declared an unsafe use. Any such unsafe equipment is hereby declared to be a public nuisance and shall be abated by repair, rehabilitation, demolition or removal.

AC-701.3.1

EXISTING COMMON SEWER LATERAL

When the Administrative Authority identifies the existence of a common sewer lateral (CSL), that is not recorded in the Recorder of Deeds Office of Allegheny County, it may issue orders to all affected property owners to separately connect to an available public sewer, or in the alternative, to record in the Recorder of Deeds Office of Allegheny County, a document, approved by the Administrative Authority, identifying the existence of the CSL and adequately specifying the maintenance responsibilities for property owners.

**ALLEGHENY COUNTY HEALTH DEPARTMENT
PLUMBING INSPECTION REPORT**

COMPLAINT # _____ PLAN # _____
 PROPERTY ADDRESS: _____
 NUMBER: _____ STREET: Brownsville Rd MUNICIPALITY: Pgh WARD: 30th C/T: _____
 PLUMBERS NAME: _____
 LAST: _____ FIRST: _____ OWNER: _____
 TYPE OF BUILDING: SINGLE FAMILY () MULTI-FAMILY () COMMERCIAL ()
 TYPE OF VISIT: INITIAL INSPECTION () REINSPECTION () SUBSEQUENT INSPECTION ()
 TYPE OF TEST: AIR () WATER () OTHER Dye ()
 TIME OF INSPECTION FROM: _____ TO: _____ with video

TYPE OF INSPECTION

STORM DRAIN () BUILDING DRAIN () WATER SERVICE () FINAL ()
 STORM SEWER () ROUGH ABOVE GROUND () WATER HEATER ()
 BUILDING SEWER () WATER DISTRIBUTION () INDIRECT WASTE () OTHER ()
 (Partial Rough, Partial House Drain, Etc.)

PLUMBING INSPECTOR: [Signature] DATE OF INSPECTION 12-11-18
 ACCEPTED BY: _____ TITLE: _____ H.P.# _____

LOCATION IN BUILDING & COMMENTS: Met with PWSA Camera truck crew. Inserted camera in manhole at intersection of Roll Way + McKinley St. Camera was up to Wye connection of Private Sewers. Dye was placed in toilet of [redacted] + drain of [redacted] - Dye only showed in manhole not effected Private lateral. Dye Test of [redacted] Brownsville showed that they are into a lower connected portion of the private lateral. Due to the severe obstruction the dye from [redacted] Brownsville was not able to flow to the camera for observation.
At this time [redacted] Brownsville Rd are the two properties that are contributing to the sewage leak in Roll Way
Violations are as follows
102.3 Maintenance ; 108.7 Unsafe Plumbing ; AC-701.3.1 Existing Common Sewer lateral.
3 Days to fix sewer leak ; 30 Days for CSL

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set VII in
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and R-2021-3024779 (stormwater)**

Miscellaneous Items:

Request: OCA-VII-40 Surface Restoration of City Streets Disturbed by PWSA projects during the calendar year 2020:

- a. Please discuss the co-ordination between the PWSA and the City in selecting where the Authority’s projects will be located.
- b. For each street and/or alley that required repaving an entire the traffic lane(s), how much of the cost did the City pay?
- c. Were the City’s contributions based on conditions of the streets/alleys prior to PWSA construction?
- d. What is the City’s budget for resurfacing streets for each year during the 2020-2024 period?
- e. What was the City’s budget for resurfacing streets for each year during the 2013-2019 period?

Response:

- a. PWSA works extensively with the City of Pittsburgh and other local utilities to coordinate projects. The City’s Department of Mobility and Infrastructure (DOMI) organizes monthly utility coordination meetings where upcoming capital projects are discussed, in an effort to properly sequence projects and share restoration costs when multiple parties are working within the same area. PWSA creates a detailed GIS project map of our water and sewer projects and shares this information in ArcGIS Online for use by DOMI as they’re developing their paving program. Sharing this information within ArcGIS Online allows us to provide real-time updates to DOMI as new projects are added or project dates change. Finally, when DOMI provides their final paving plan for the season PWSA reviews for any potential conflicts that were not caught during the regularly scheduled utility coordination meetings. Results from this second-level review will result in a paving hold request or could highlight an opportunity for the City and PWSA to split restoration costs depending on the scope of our work
- b. PWSA complies with the City of Pittsburgh’s Right-of-Way Manual. The City does not contribute to paving areas disturbed by PWSA’s work unless it is included on the City’s Paving List. The City may wish to extend paving outside of the PWSA project area if the roadway is in poor condition. In these cases, PWSA coordinates on restoration and an appropriate cost share based on our impact area. This is assessed on a project by project basis.
- c. See answer to paragraph b.

Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set VII in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)

- d. Source: City of Pittsburgh’s 2021 Capital Budget & Six Year Plan, Street Resurfacing (pg. 67 of 192)

Source	2020	2021	2022	2023	2024
CDBG					
BOND	\$14,779,918	\$16,309,505	\$7,272,981	\$11,826,879	\$13,107,352
PAYGO	\$904,236	\$800,000	\$600,000	\$500,000	\$650,000
OTHER					
TOTAL	\$15,684,154	\$17,109,505	\$7,872,981	\$12,326,879	\$13,757,352

- e. Source: City of Pittsburgh Capital Budget by Year for Street Resurfacing (<https://pittsburghpa.gov/council/capital-budgets>)
 2013 - \$9,767,500; 2014 - \$7,085,000; 2015 - \$12,000,000; 2016 - \$14,647,943;
 2017 - \$14,883,825; 2018 - \$16,015,798; 2019 - \$18,570,890

Response Provided by: Barry King, PE, Director of Engineering
 Kate Mechler, P.E., Deputy Director of Engineering
 The Pittsburgh Water and Sewer Authority

Dated: May 28, 2021

Water Distribution System

2019-2024 Surface Restoration

PROJECT NUMBER: 2019-325-106-0, Unidentified
NEIGHBORHOOD/WARD: Systemwide

PHASE:

Construction

PRIORITY:

Safety, Operations and Maintenance Efficiency

PROJECT DESCRIPTION:

Resurfacing of streets as a result of other capital projects.

PROJECT JUSTIFICATION:

Adequately restoring street surface conditions is a requirement for all applicable capital projects.

RISK(S):

Customers could experience temporary street closures as a result of street resurfacing work.

IMPACT ON OPERATIONS:

Increased system reliability and improved system management.

ALTERNATIVES TO THE RECOMMENDED ACTION:

There are no practical alternatives to the recommended action.

		<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>Total Budget (Prior Years Included)</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>Total</u>	<u>Debt (Revenue Bonds)</u>
Total	\$25,911,333	3,564,474	4,158,926	4,097,387	4,197,390	4,297,393	\$20,315,569	

*Includes contingencies

Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set XI in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)

Miscellaneous Items:

Request: OCA-XI-9 Reference: PWSA’s response to OCA-VII-40. For each construction contract, how much did PWSA pay for surface restoration of City streets disturbed by PWSA projects during the calendar year 2020?

Response:

In 2020, surface restoration for PWSA’s capital funded projects was performed by either the surface restoration contractors or the awarded project contractor. The numbers provided below, include concrete base, curb, sidewalk, milling, wearing course, and binder course.

The 2020 Surface Restoration Contracts include sites that were constructed in 2019; however, restoration was not completed.

Project Name	Surface Restoration Cost
2019 Water Relay	\$536,476
2019 Small Diameter Water Main Replacement	\$1,083,311
2020 Small Diameter Water Main Replacement – Contract A	\$1,847,340
2020 Small Diameter Water Main Replacement – Contract B	\$1,158,995
2019 Catch Basin Replacement (2 Contracts)	\$1,001,379
Bates Street Water Main Replacement	\$384,035
2020 Valve Replacement	\$229,683
Pressure Monitor Installation	\$81,664
2020 Sewer Reconstruction	\$163,162
2020 Surface Restoration, Capital (2 Contracts)	\$14,819,169
Total	\$21,305,214

Response Provided by: Kate Mechler, P.E., Deputy Director of Engineering
Barry King, PE, Director of Engineering
The Pittsburgh Water and Sewer Authority

Dated: June 18, 2021

Other

Surface Restoration (Capital Only)

PROJECT NUMBER: 2020-325-105-0/1

WARD: Systemwide

PHASE: Construction
PRIORITY: Safety, Operations and Maintenance Efficiency
PROJECT DESCRIPTION: Resurfacing of streets as a result of other capital projects.
PROJECT JUSTIFICATION: Adequately restoring street surface conditions is a requirement for all applicable capital projects.
RISK(S): Customers could experience temporary street closures as a result of street resurfacing work.
IMPACT ON OPERATIONS: Increased system reliability and improved system management.
ALTERNATIVES TO THE RECOMMENDED ACTION: There are no practical alternatives to the recommended action.

		<u>CASH FLOW SUMMARY</u>						<u>FUNDING SOURCE(S)</u>
	<u>Total Budget (Prior Years Included)</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Total</u>	Debt (Revenue Bonds)
Total	\$14,328,141	12,500,000	0	0	0	0	\$12,500,000	

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION


Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Direct Testimony, OCA Statement 6, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 8, 2021
*312550

Signature:



Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	Docket No. R-2021-3024773 (Water)
	:	
	:	
	:	Docket No. R-2021-3024774 (Wastewater)
v.	:	
	:	
	:	Docket No. R-2021-3024779 (Stormwater)
PITTSBURGH WATER AND SEWER AUTHORITY	:	

DIRECT TESTIMONY
OF
MORGAN N. DEANGELO

ON BEHALF OF
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

JULY 8, 2021

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1 **Introduction**

2 **Q. Please state your name, business address and occupation.**

3 **A.** My name is Morgan N. DeAngelo. My business address is 555 Walnut Street, Forum
4 Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory
5 Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

6

7 **Q. Please describe your educational background and qualifications to provide testimony**
8 **in this case.**

9 **A.** I have a Master’s degree in Business Administration and a Bachelor’s degree in Finance
10 from Wilkes University. My educational background and qualifications are described in
11 Appendix A.

12

13 **Q. On whose behalf are you testifying in this proceeding?**

14 **A.** I am testifying on behalf of the Office of Consumer Advocate.

15

16 **Purpose of Direct Testimony**

17 **Q. Please describe the purpose of your Direct Testimony.**

18 **A.** The purpose of my Direct Testimony is to identify impacts the COVID-19 Pandemic has
19 had, and continues to have, on Pennsylvania residents. I will go into detail regarding the
20 statistical analysis of unemployment rates, which groups are affected most by the impacts
21 and how these groups are affected. I will also discuss how customers with Pittsburgh
22 Water and Sewer Authority (PWSA) are facing such impacts. With the on-going
23 Pandemic, it is important to consider the interests of consumers and the impacts they

1 have faced and will continue to face. The Pennsylvania Public Utility Commission
2 (Commission) should consider the specific facts described in my testimony below, when
3 reaching its decision on a rate increase.
4

5 **The Pandemic's Impact on People in Pennsylvania**

6 **Q. What is the current unemployment rate in Pennsylvania?**

7 **A.** Due to the COVID-19 Pandemic, the unemployment rate across Pennsylvania reached
8 16.2% in April 2020, just over one year ago. Although that number has since decreased,
9 the current unemployment rate remains much higher than before the pandemic, at 6.9%.¹
10 This rate has remained relatively steady since September 2020.²
11

12 **Q. How does the unemployment rate in Pennsylvania compare to that of the United**
13 **States?**

14 **A.** Pennsylvania's unemployment rate of 6.9% remains higher than the United States'
15 unemployment rate of 5.9%.³
16

17 **Q. What is the unemployment rate in PWSA's service territory?**

18 **A.** PWSA offers service throughout Allegheny County. According to the PA Monthly Work
19 Stats Report issued in June 2021, Allegheny County had an unemployment rate of 5.7%,

¹ The pre-pandemic unemployment rate in January 2020 was 4.8%.

² <https://www.bls.gov/eag/eag.pa.htm>

³ <https://www.bls.gov/eag/eag.us.htm>

1 which remains higher than the pre-pandemic unemployment rate of 4.7%.⁴ This data
2 reflects the effects of the closures implemented to mitigate the spread of COVID-19.

3
4 **Q. Has the Pandemic had an effect on PWSA’s ability to collect payments for its
5 services?**

6 **A.** Yes. The Pandemic has caused an increase in At-Risk Accounts.

7
8 **Q. What is an At-Risk Account?**

9 An At-Risk Account refers to customer accounts that are at risk for disconnections and shut offs
10 due to nonpayment.

11 **Q. Please describe the At-Risk Accounts regarding PWSA customers.**

12 **A.** The Pennsylvania Public Utility Commission has requested all utility companies to comply
13 with temporary, monthly reporting of at-risk customer accounts. The latest report for
14 PWSA data can be found at Docket No. M-2020-3019244. The data is broken down into
15 categories showing Residential and Non-Residential customers. Table 1 compares the total
16 number of customers at-risk for termination from March – June in 2020 and 2021, along
17 with their percent change.⁵

18

⁴

https://data.bls.gov/timeseries/LAUCN42003000000003?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true

⁵ Percent Change = ((New Number – Original Number) / (Original Number)) * 100

Table 1:	PWSA Customer Accounts At-Risk of Termination		
	Residential	Non-Residential	Total Accounts
Mar-20	6,713	475	7,188
Mar-21	10,059	665	10,724
Percent Change	49.84%	40.00%	49.19%
Apr-20	8,354	607	8,961
Apr-21	9,391	510	9,901
Percent Change	12.41%	-15.98%	10.49%
May-20	11,564	1,308	12,872
May-21	8,781	503	9,284
Percent Change	-24.07%	-61.54%	-27.87%
Jun-20	9,435	776	10,211
Jun-21	7,787	500	8,287
Percent Change	-17.47%	-35.57%	-18.84%

1

2

Table 2 compares the total aggregate dollars of arrears for Residential and Non-Residential

3

customers from March to June in 2020 and 2021, along with their percent change.

Table 2:	PWSA Customer Total Aggregate Dollars of Arrears		
	Residential	Non-Residential	Total Arrears
Mar-20	\$ 5,378,580.82	\$ 1,543,539.22	\$ 6,922,120.04
Mar-21	\$ 9,471,127.27	\$ 1,724,751.47	\$ 11,195,878.74
Percent Change	76.09%	11.74%	61.74%
Apr-20	\$ 6,225,734.58	\$ 1,542,242.35	\$ 7,767,976.93
Apr-21	\$ 9,170,929.78	\$ 1,339,780.39	\$ 10,510,710.17
Percent Change	47.31%	-13.13%	35.31%
May-20	\$ 9,057,802.17	\$ 3,079,369.86	\$ 12,137,172.03
May-21	\$ 8,498,843.07	\$ 1,093,296.51	\$ 9,592,139.58
Percent Change	-6.17%	-64.50%	-20.97%
Jun-20	\$ 8,432,228.71	\$ 2,553,580.78	\$ 10,985,809.49
Jun-21	\$ 7,615,511.46	\$ 1,219,654.37	\$ 8,835,165.83
Percent Change	-9.69%	-52.24%	-19.58%

4

5

Table 3 compares the Residential and Non-Residential customer accounts disconnected for

6

Non-Payment with Dollar Amounts owed from March to June in 2020 and 2021.

7

Table 3:	PWSA Customer Accounts Disconnected for Non-Payment with Dollar Amounts Owed		
	Residential	Non-Residential	Total Accounts
Mar-20	7	1	8
Mar-21	0	8	8
Apr-20	0	0	0
Apr-21	0	21	21
May-20	0	0	0
May-21	0	33	33
Jun-20	0	0	0
Jun-21	0	24	24

1

2 **Q. Are these trends something you would expect to see?**

3 **A.** Yes, given the economic circumstances of the pandemic and the moratorium on
 4 terminations, these trends are not surprising. Being that the PWSA service territory falls
 5 in areas with steady unemployment rates, we can assume some at-risk customers are
 6 experiencing negative impacts from the current economic conditions, causing them to fall
 7 behind in utility payments.

8

9 **Q. Are there other sources of data, in addition to unemployment rates, which attempt to**
 10 **quantify the effects of COVID-19 on Pennsylvania’s citizens?**

11 **A.** Yes, the Household Pulse Survey (Pulse Survey) is another tool that has been used to gather
 12 data and measure these impacts.

13

14 **Q. What is the Pulse Survey?**

15 **A.** The Household Pulse Survey is organized by the United States Census Bureau. It is an
 16 experimental project in which data is collected to discover the impacts of the COVID-19
 17 Pandemic. The data is then organized by state to display how people are affected through

1 different categories. The categories include employment status, food security, housing,
2 educational disruption, among others. The data has been organized into four different
3 phases running from (1) April 23, 2020 – July 21, 2020, (2) August 19, 2020 – October 26,
4 2020, (3) October 28, 2020 – March 29, 2021, and (3.1) April 14 – Present.

5
6 **Q. Does the Pulse Survey show data for specific locations throughout Pennsylvania,
7 i.e., the PWSA service territory?**

8 **A.** No, the data found in the Pulse Survey is collected from residents in Pennsylvania as a
9 whole. However, we do know the unemployment rates for the specific county PWSA
10 services. Seeing that Allegheny County has unemployment rates higher than this time last
11 year, it is likely that there are PWSA customers experiencing some of the hardships brought
12 forth by the pandemic.

13
14 **Q. Please list the select characteristics by which the Pulse Survey categorizes responses.**

15 **A.** The characteristics used in the Pulse survey are Age, Sex, Hispanic Origin and Race,
16 Education, Martial Status, Household Size, Presence of Children Under 18 Years Old,
17 Household Income and Used in the Last 7 Days to Meet Spending Needs.

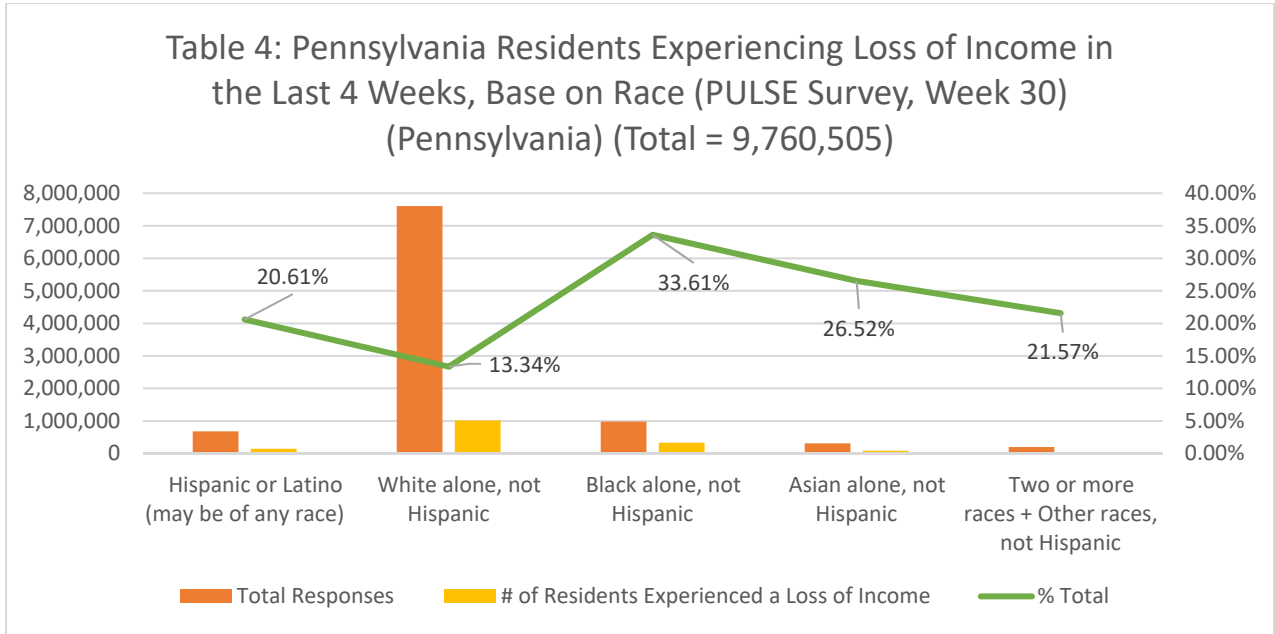
18
19 **Q. From which phase of the Pulse Survey is the following data collected?**

1 A. The following data is collected from Phase 3.1, Week 30 of the Pulse Survey from May
 2 12, 2021, through May 24, 2021.⁶ The data extrapolates trends using survey responses
 3 collected from a portion of Pennsylvania residents, 18 years of age and older.⁷

4
 5 **Q. From this data, who is experiencing the greatest impact from the COVID-19**
 6 **Pandemic?**

7 A. The data shows people ages 55-64, and those who identify as white are experiencing the
 8 greatest impact, which can be seen in Tables 4 and 5. Similarly, the lower a household's
 9 income, the greater the impact of the pandemic has on income loss, seen in Table 6.
 10 However, the COVID-19 Pandemic impacts are not limited to these groups, and the effects
 11 can be felt throughout each of the other categories.

12

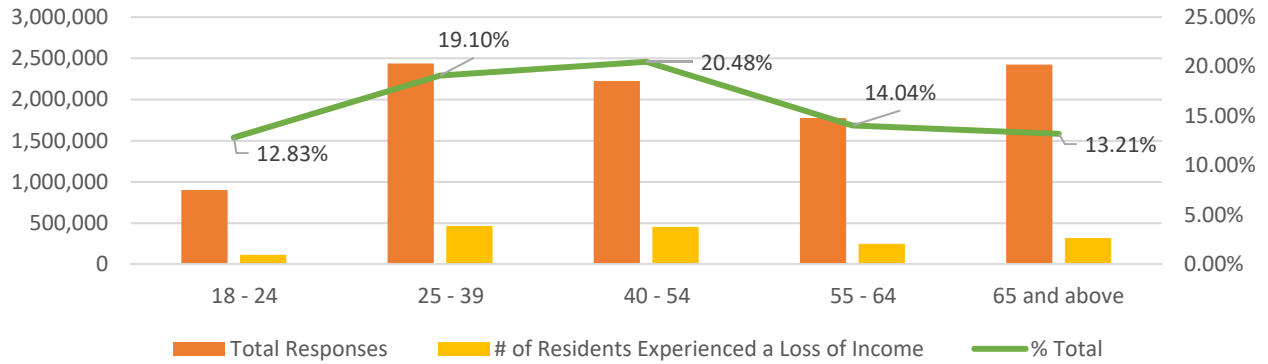


13

⁶ <https://www.census.gov/data/tables/2021/demo/hhp/hhp30.html>

⁷ Percentage of those reporting = 9,760,505.

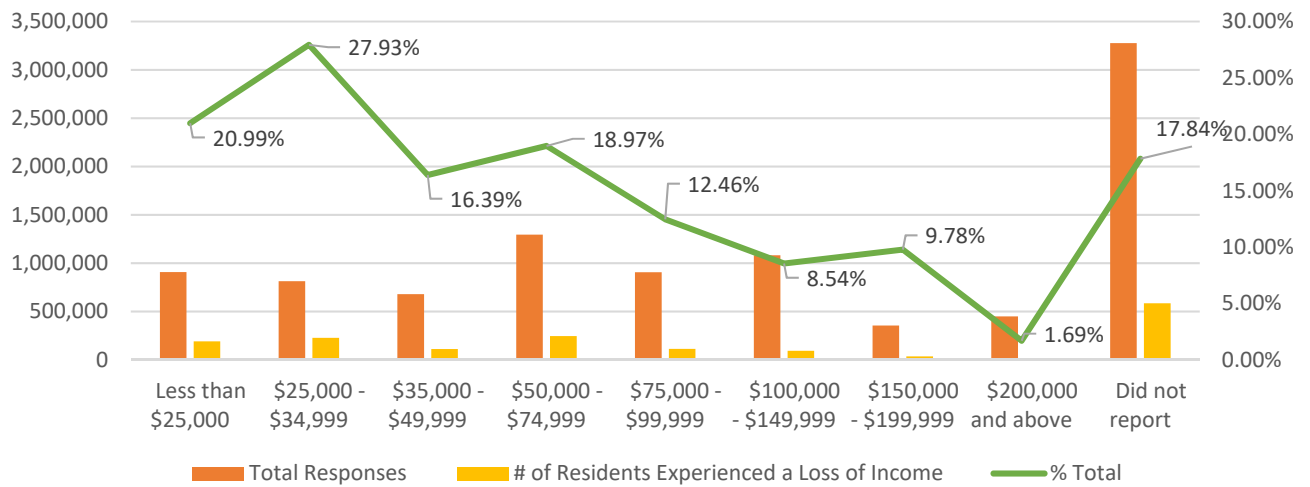
Table 5: Pennsylvania Residents Experiencing Loss of Income in the Last 4 Weeks, Based on Age (PULSE Survey, Week 30) (Pennsylvania) (Total =9,760,505)



1

2

Table 6: Pennsylvania Residents Experiencing Loss of Income in the Last 4 Weeks, Based on Household Income (PULSE Survey, Week 30) (Pennsylvania) (Total = 9,760,505)



3

4

5 Q. Which race makes up the largest demographic in Allegheny County?

1 A. Allegheny County’s population by race reports 79.9% White and 14.5% of the population
2 are ages 55-64.⁸ This is the demographic that is largely impacted by COVID in the latest
3 Pulse Survey.

4
5 **Q. Based on the data you have discussed, are residents in the PWSA Service Territory**
6 **already having trouble paying their bills because of COVID-19?**

7 A. Yes.

8
9 **Q. Was this a concern brought forth at the Public Input Hearings that took place on**
10 **June 28, 29, and 30, 2021?**

11 A. Yes. Multiple customers mentioned that much of the population in PWSA’s service
12 territory is older and lacks economic opportunities to increase its income and pay bills.
13 Others expressed that increasing the rates at this time is problematic because people are
14 already struggling from the ongoing Pandemic. Increasing rates will negatively impact
15 low- and fixed-income households, people of color and elders, especially when Assistance
16 Programs are not reaching houses in need to begin with.⁹ Another customer stated that
17 increasing rates would make it more difficult for struggling families to keep their service
18 connected. Individuals and families that make minimum wage, \$7.25 an hour, will likely
19 be at-risk. The impacts associated with the COVID-19 Pandemic just compound on how

⁸ <https://www.workstats.dli.pa.gov/Documents/County%20Profiles/Allegheny%20County.pdf>

⁹ Tr. 6/28/21, 1pm, pp. 35-125.

1 low-income communities and communities of color have been and will be
2 disproportionately impacted.¹⁰

3

4 **Q. What can you conclude about employment income in Pennsylvania?**

5 **A.** The Week 30 survey results show that 16.5% of Pennsylvania residents experienced loss
6 of employment income in the last 4 weeks. Although we have seen improvement in these
7 numbers each week, 12.8% of residents still expect a loss of employment income in the
8 next 4 weeks, for either themselves or their households.¹¹

9

10 **Q. How did those surveyed spend their Stimulus payment?**

11 **A.** The most reported uses of the Stimulus payment in the last 7 days was put toward
12 food/groceries, household supplies, rent and paying for utilities and telecommunications.

13

14 **Q. How did those that put their payment toward utilities utilize the funds?**

15 **A.** Approximately 500,000 people responded to the utilities and telecommunication section
16 of the Pulse Survey, where they indicated that 25.9% mostly spent it on utilities, 13.5%
17 mostly saved it for future utility bills and 60.6% used it to pay off utility debt.¹²

18

19 **Q. What can you conclude about this?**

¹⁰ Tr. 6/29/21, 1pm, pp. 156-187.

¹¹ <https://www.census.gov/data/tables/2021/demo/hhp/hhp30.html>

¹² <https://www.census.gov/data/tables/2021/demo/hhp/hhp30.html>

1 A. With Pennsylvania residents using their Stimulus payments to pay for current utility
2 needs, as well as paying off utility debt, we can assume many residents are struggling to
3 pay their bills with regular income, which may be a result of the COVID-19 Pandemic.
4

5 **Pennsylvania State Coincident Index**

6 **Q. What is the State Coincident Index?**

7 A. The State Coincident Index is published monthly by the Federal Reserve Bank of
8 Philadelphia. “The Coincident Indexes combine four state-level indicators to summarize
9 current economic conditions in a single statistic, such as (1) nonfarm payroll
10 employment, (2) average hours worked in manufacturing by production workers, (3) the
11 unemployment rate and (4) wage and salary disbursements deflated by the consumer
12 price index (U.S. city average). The trend for each state’s index is set to the trend of its
13 gross domestic product (GDP), so long-term growth in the state’s index matches long-
14 term growth in its GDP.”¹³ The index is set so that the level of economic activity in 2007
15 is equal to 100. A rise in the index shows economic activity is expanding and a decline
16 indicates a contraction in economic activity.
17

18 **Q. What can you conclude about the Pennsylvania State Coincident Index?**

19 A. The Pennsylvania State Coincident Index for May 2021 was released on June 29, 2021.
20 Since February 2021, the coincident index for Pennsylvania rose 1.0% to 116.4. The
21 level of payroll employment increased over the past three months but remained lower

¹³ <https://www.philadelphiafed.org/surveys-and-data/regional-economic-analysis/state-coincident-indexes>

1 than that of February 2020. The unemployment rate decreased in the three-month period
2 to May 2021, but it remains higher than the pre-pandemic level.¹⁴

3
4 **Conclusion**

5 **Q. What is the overall impact of the COVID-19 Pandemic on people in Pennsylvania?**

6 **A.** Over the last 15 months, Pennsylvania, along with the rest of the world, has faced many
7 different hardships due to the COVID-19 Pandemic. The impacts continue to affect
8 Pennsylvania residents, as we can see in the Household Pulse surveys and monthly
9 reports. Numbers remain significantly higher than before the Pandemic, causing impacts
10 that will be faced in the coming months and long-term.

11
12 **Q. Does this conclude your direct testimony at this time?**

13 **A.** Yes, it does. I reserve the right to modify or supplement my testimony if necessary.

¹⁴ <https://www.philadelphiafed.org/-/media/frbp/assets/surveys-and-data/coincident/2021/coincidentindexes0521.pdf>

**QUALIFICATIONS OF
MORGAN N. DEANGELO**

Education:

2020 M.B.A., Wilkes University

2018 B.B.A. Finance, Wilkes University

Positions:

June 2020 – Present Regulatory Analyst, Pennsylvania Office of Consumer Advocate

2018 – 2020 Graduate Assistant, Office of Student Development,
Wilkes University

Experience:

I am currently employed by the Pennsylvania Office of Attorney General, Office of Consumer Advocate (OCA) as a Regulatory Analyst. In this position, my responsibilities of reviewing utility company filings with the Pennsylvania Public Utility Commission (PA PUC) and analyzing the financial, economic, rate of return, and policy issues that are relevant to the filings. Additionally, I am tasked with preparing recommendations for the OCA's involvement in utility filings with the PA PUC, writing testimony and presenting oral testimony on behalf of the OCA.

Relevant Training:

IPU Accounting and Ratemaking Course, August 2020

Previous Cases where testimony was submitted:

P-2020-3020914	Twin Lakes Utilities, Inc.
A-2020-3019634	Borough of Royersford
R-2021-3023618	UGI Utilities, Inc. – Electric Division

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Morgan N. DeAngelo, hereby state that the facts set forth in my Direct Testimony, OCA Statement 7, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 8, 2021
*312549

Signature: *Morgan N. DeAngelo*
Morgan N. DeAngelo

Consultant Address: Office of Consumer Advocate
555 Walnut Street
5th Floor, Forum Place
Harrisburg, PA 17101-1923

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission	:	Docket Numbers
v.	:	R-2021-3024773
Pittsburgh Water and Sewer Authority	:	R-2021-3024774
	:	P-2021-3024779

Rebuttal Testimony of
Scott J. Rubin

on Behalf of
the Pennsylvania Office of Consumer Advocate

July 29, 2021

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List of Schedules

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Schedule SJR-9:	Projects with Identifiable Locations and Value of \$1 Million or More from Schedule SJR-8
Schedule SJR-10:	News report of PWSA Acquisition of Millvale Borough Water System

Introduction

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20

Q. Please state your name.

A. My name is Scott J. Rubin. I previously submitted direct testimony in this proceeding on behalf of the Office of Consumer Advocate (“OCA”) which is identified as OCA Statement 3.

Q. What is the purpose of your rebuttal testimony?

A. I have been asked by the OCA to review and critique (if necessary) the direct testimony and exhibits submitted by other parties relating to the Pittsburgh Water and Sewer Authority’s (“PWSA” or “Authority”) cost-of-service studies (“COSS”), proposed rate design for residential customers, and PWSA’s proposal to transition to separate stormwater rates.

Q. Whose testimony did you review?

A. I reviewed the direct testimony and exhibits submitted by Bureau of Investigation and Enforcement (“I&E”) witness Ethan Cline (I&E Statement 3), Office of Small Business Advocate (“OSBA”) witness Brian Kalcic (OSBA Statement 1), and Pittsburgh United witness Michele Adams (Pittsburgh United Statement 2).

Q. Do you disagree with the proposals submitted by any of those witnesses?

A. Yes. I disagree with several proposals made by OSBA witness Kalcic; however, I also agree in theory with some of his recommendations for improving the Authority’s COSS. I also will address an apparent inconsistency between information contained in the

1 testimony of Pittsburgh United witness Adams and information on a similar topic in Mr.
2 Kalcic's testimony.

3 **Response to OSBA Witness Kalcic**

4 **Service Line Costs**

5 **Q. On pages 6-9 of his direct testimony, Mr. Kalcic recommends allocating service line**
6 **costs separately from transmission and distribution mains. Do you agree with this**
7 **recommendation?**

8 A. Yes. I agree that PWSA should separately account for service line costs and allocate
9 those costs separately from transmission and distribution mains in the water COSS.

10 **Q. Mr. Kalcic uses \$83,973,752 as the value for PWSA's net investment in service lines,**
11 **excluding lead service line replacements. Do you agree with his use of that figure?**

12 A. No. That figure was provided by PWSA in the supplemental response to interrogatory
13 OSBA II-5. I am attaching as Schedule SJR-8 a complete copy of the supplemental
14 response to OSBA II-5, including a printout of the attachment. As I discuss below, it is
15 unclear what this investment represents.

16 **Q. Mr. Kalcic also recommends that 100% of the net service line investment should be**
17 **allocated to the Residential class. Do you agree with that recommendation?**

18 A. No, I do not. I reviewed the detail PWSA provided for the \$83.97 million in service line
19 investment net of accrued depreciation and I do not agree that all of this investment is for
20 service lines or that it all serves residential customers. To test Mr. Kalcic's supposition
21 that all service line investment identified by PWSA is to serve residential customers, I

1 selected 12 projects from the attachment to OSBA II-5 (supplemental) that have a net
2 book value of at least \$1 million and have a detailed enough description to identify the
3 location served. Those projects are shown on Schedule SJR-9.

4 From the project descriptions, it is readily apparent that 100% of these
5 investments do not serve residential customers. For example, the projects include
6 industrial redevelopment on Pittsburgh's South Side (abbreviated "S.S." in the
7 attachment), development work in the mid- to late-1990s along Pittsburgh's North Shore
8 which appears to be related to the construction of two sports stadiums (and surrounding
9 commercial development) at that time, and main replacement along Smallman Street
10 which I understand to be primarily commercial and industrial development, among
11 others.

12 I also question whether the entire \$83.97 million represents an investment in
13 service lines. For example, in 2009 PWSA purchased the Millvale Borough water
14 system. According to a press account at the time (attached as Schedule SJR-10), PWSA
15 paid \$1.55 million for the system which would have included a combination of mains and
16 service lines. Yet the data on which Mr. Kalcic relied shows an acquisition cost of
17 \$2,968,233 offset by \$435,640 in accrued depreciation for a net book value of
18 \$2,532,593. Mr. Kalcic assumed this investment is only for the service lines in Millvale
19 Borough. It appears, however, that this entry greatly exceeded the purchase price of the
20 entire Millvale system. Further, there is no indication that all service lines in Millvale
21 served only residential customers. In fact, it is very likely that service lines purchased by
22 PWSA also included those that serve government, non-profit, and commercial customers
23 in the borough.

1 **Q. What do you conclude from these examples?**

2 A. First, I would again emphasize that these are only examples that I could readily identify
3 from the descriptions. Second, I conclude that a much more thorough investigation is
4 required before concluding that all of the investments listed in the supplemental response
5 to OSBA II-5 are solely for service lines and that all of those service line investments
6 only serve residential customers.

7 **Q. What do you recommend?**

8 A. While I agree in theory with Mr. Kalcic that PWSA's water COSS should separately
9 identify and allocate service line costs, I disagree that there is sufficient information to
10 make such a change in this case. We do not know the amount of such investment or the
11 customer classes to which the investment should be allocated. I recommend, therefore,
12 that the COSS should not be changed in this case, but that PWSA should be ordered to
13 perform the necessary investigation to identify and properly allocate water service line
14 costs in its next base rate case.

15 ***Public Benefit Costs***

16 **Q. Does PWSA have certain costs that it incurs to benefit the Pittsburgh community, as**
17 **distinguished from costs that are designed to serve specific customers?**

18 A. Yes. As is the case with most utilities, some costs are incurred that need to be paid by all
19 customers without regard to an individual customer (or even a class of customers)
20 causing the cost to be incurred. For PWSA, these socialized costs include the following:

- 21
 - Bad debt expenses: the costs are caused by customers who do not pay their
- 22 bills, but they are paid by customers who do pay their bills

- 1 • Costs associated with programs to help low-income customers: the costs
2 are caused by a myriad of personal and societal factors, such as low
3 wages, inadequate governmental support, poor education, untreated mental
4 or physical health disorders, among many others; but the costs are paid by
5 non-low-income customers

- 6 • Lead service line replacement costs: the costs are a function of the time
7 when a service line was first installed which, given the age of lead service
8 lines, is likely before most customers owned the property; but the costs are
9 paid by current customers

- 10 • Credits paid to customers who reduce stormwater flows: the cost is paid to
11 customers who reduce flows which are supposed to provide a benefit to
12 the entire system; but the cost (if any, since the foregone revenue may be
13 partially or totally offset by cost savings) is paid by all stormwater
14 customers

- 15 • Lost revenues due to the phase-in of rates to the City of Pittsburgh: the
16 cost is “caused” by the contract between the City and PWSA; but the
17 revenue shortfall cannot be charged back to the City (as it would violate
18 the contract)

19

20 **Q. How should a utility collect the costs of these public benefit programs from**
21 **customers?**

22 A. By their very nature, these costs cannot be allocated to, and collected from, customers
23 using typical principles of cost causation. As noted above, the customers who “caused”
24 the costs to be incurred either no longer exist (such as the people who installed lead
25 service lines 50 or more years ago) or are unable to pay the cost (such as bad debt).
26 Stormwater credits are “caused” by the customers who install facilities to reduce their
27 stormwater flows, but it would be illogical and self-defeating to charge those customers
28 the costs of providing the credits. In my experience and opinion, the fairest way to
29 allocate and collect these types of public benefit costs is to require all customers to pay a
30 fair share of the costs. Defining a “fair” share can vary, but generally an allocation based

1 on each class's total revenues or each class's total consumption is a reasonable way to
2 have each customer bear a comparable burden of the public benefit cost.

3 **Q. How did PWSA recommend these types of public benefit costs should be allocated to**
4 **and paid by customers?**

5 A. PWSA generally recommended that all of these costs should be allocated to customer
6 classes in proportion to the class's total cost of service. I believe the only exception to
7 this is bad debt expense where PWSA proposes to charge the bad debt of each class back
8 to that same customer class.

9 **Q. Did you recommend any changes in these methods of allocation?**

10 A. No, I found PWSA's proposed allocation methods to be a reasonable way to socialize the
11 costs of these programs across all customers, so I did not propose any change.

12 **Q. Did OSBA witness Kalcic propose any changes in how these costs were allocated?**

13 A. Yes. Mr. Kalcic proposes to treat different public benefits differently. In particular, he
14 proposes the following allocation methods for public benefit costs:

- 15 • Bad debt expenses: Mr. Kalcic accepts the Company's methodology
- 16 • Costs associated with programs to help low-income customers: Mr.
17 Kalcic proposes to allocate these costs solely to Residential paying
18 customers
- 19 • Lead service line replacement costs: Mr. Kalcic proposes to allocate the
20 costs based on the equivalent number of water meters serving each class
- 21 • Credits paid to customers who reduce stormwater flows: Mr. Kalcic
22 accepts the Company's methodology

- 1 • Lost revenues due to the phase-in of rates to the City of Pittsburgh: Mr.
2 Kalcic accepts the Company's methodology

3 **Q. Do you agree with Mr. Kalcic's proposed changes in how these costs are allocated?**

4 A. No, I do not agree with Mr. Kalcic. It appears to me that he selected programs that
5 primarily benefit residential customers and is saying, in effect, "my clients cannot
6 participate in the program, so they shouldn't pay for it." For programs that primarily
7 benefit non-residential customers (the stormwater credit program and the City of
8 Pittsburgh phase-in), however, he has no problem with residential customers paying a
9 significant portion of the program's cost.

10 **Q. What do you recommend?**

11 A. I recommend no changes in PWSA's proposed allocation of these public benefit costs.
12 The Authority's proposal appropriately recognizes the nature of these costs and asks all
13 customers to pay their fair share of these costs.

14 ***Wastewater-Stormwater Subsidy Allocation***

15 **Q. Are there any other items that are similar to the public benefit costs you just
16 discussed?**

17 A. Yes. To alleviate the transition to having separate charges for stormwater service, PWSA
18 has proposed that approximately one-third of stormwater costs should continue to be paid
19 by sanitary wastewater customers. Similar to public benefit costs, charging wastewater
20 customers for stormwater service is not consistent with principles of cost causation; but a
21 short-term subsidy can help to transition to a more accurate system of cost recovery. I

1 discussed in my direct testimony how the burden on wastewater customers should be
2 lessened.

3 **Q. How did PWSA propose to allocate the wastewater-stormwater subsidy among the**
4 **customer classes?**

5 A. PWSA proposed to allocate the subsidy among wastewater classes in proportion to each
6 class's wastewater cost of service.

7 **Q. Did you recommend any changes in this method of allocation?**

8 A. No, I found PWSA's proposed allocation method to be a reasonable way to socialize the
9 costs of the transition across all customers (similar to other public benefits discussed
10 above), so I did not propose any change.

11 **Q. Did OSBA witness Kalcic propose any change in how the subsidy should be**
12 **allocated among wastewater customer classes?**

13 A. Yes. Mr. Kalcic proposes to have each wastewater customer class pay the revenues
14 foregone by the corresponding stormwater class.

15 **Q. In theory, do you agree with Mr. Kalcic's approach?**

16 A. I agree with Mr. Kalcic's approach in theory. In fact, I have supported this approach to
17 the payment of wastewater subsidies by water customers in various rate cases. Given the
18 specific facts of this case, however, I do not agree that it is proper to use this method for
19 PWSA at this time.

1 **Q. Before you discuss your reasons for opposing Mr. Kalcic's proposal, can you**
2 **quantify the difference between PWSA's allocation of the subsidy and Mr. Kalcic's**
3 **proposed allocation of the subsidy?**

4 A. Yes. There is some confusion in the record on this point. Mr. Kalcic shows numbers
5 based on his modified COSS including changing the allocation of low-income program
6 costs (which, as I explained above, is not appropriate). I believe his calculations also
7 include the effects of other adjustments that tend to mask some of the differences in
8 subsidy payments.

9 Pittsburgh United witness Adams has a different calculation in Table 1 of her
10 testimony (Pittsburgh United St. 2, p. 20) that appears to include the effects of other
11 adjustments unrelated to the subsidy payment itself. Thus, Mr. Kalcic shows that the
12 Residential class is receiving a greater subsidy than it is paying, but Ms. Adams shows
13 that the same class is actually receiving less of a stormwater subsidy that it is paying
14 through wastewater rates.

15 To try to clear up the confusion, I prepared Table 1-R which shows PWSA's
16 actual proposed receipt of subsidy payments by stormwater customers and the payment of
17 subsidies by wastewater customer classes.

18

1

Table 1-R: PWSA and OSBA Proposed Stormwater Subsidies by Customer Class Under PWSA’s Cost-of-Service Studies¹						
	PWSA Proposed			OSBA Proposed		
	<i>Subsidy Received (Storm)</i>	<i>Subsidy Paid (Sewer)</i>	<i>Net Subsidy</i>	<i>Subsidy Received (Storm)</i>	<i>Subsidy Paid (Sewer)</i>	<i>Net Subsidy</i>
Residential	5,198,852	5,687,536	(488,684)	5,198,852	5,198,852	-0-
Commercial	5,688,515	4,629,067	1,059,448	5,688,515	5,688,515	-0-
Industrial	77,285	279,450	(202,165)	77,285	77,285	-0-
Health / Educ.	578,798	1,517,864	(939,066)	578,798	578,798	-0-
Municipal	285,189	286,084	(895)	285,189	285,189	-0-
Other	571,359	N/A	571,359	571,359	571,359	-0-
Total	12,400,000	12,400,000	-0-	12,400,000	12,400,000	-0-

2

3 **Q. What does Table 1-R show?**

4 A. Table 1-R, using data directly from PWSA’s COSS Model, shows that under PWSA’s
 5 proposal the Residential and Health/Education classes would be providing a substantial
 6 subsidy to the Commercial class. Under Mr. Kalcic’s proposal, all such subsidies would
 7 be eliminated and each class’s reduction in stormwater rates would be paid through a
 8 concomitant increase in the class’s wastewater rates.

9 **Q. Mr. Kalcic’s proposal would benefit the Residential class. Why do you oppose it?**

10 A. I oppose his proposal because of the particular facts of this case. Specifically, rather than
 11 being a straightforward subsidy (as we have seen in combined water/wastewater rate
 12 cases), in this case there are thousands of stormwater-only customers (most of which are

¹ PWSA’s COSS Model, WW>RateDesign table, row 77; SW>RateDesign tab, row 59.

1 non-residential).² Partially subsidizing stormwater rates by wastewater customers
2 provides a benefit not only to customers who receive both services, but also to customers
3 who only receive stormwater service from PWSA. This is directly analogous to the other
4 types of public benefit programs I discussed above. There is no one-to-one (or cost-
5 causative) relationship between stormwater-only customers and any class of wastewater
6 customers, so we must develop a fair way to allocate the costs of the subsidy among
7 customer classes.

8 PWSA proposed to allocate the subsidy in a manner similar to the allocation of
9 other public benefit costs; that is, based on each class's total cost of service. Mr. Kalcic,
10 however, proposed to allocate the subsidy on a class-by-class basis, which has the effect
11 of requiring Commercial wastewater customers to provide nearly all of the subsidy for
12 stormwater-only customers. I do not consider that to be reasonable public policy. As I
13 explained above, these types of public benefits should be shared by all customers.

14 **Q. What do you recommend?**

15 A. I recommend that the Commission reject OSBA's proposal and allocate any stormwater
16 subsidy among wastewater customer classes in proportion to each class's total cost of
17 service, as PWSA proposed. I would emphasize that this recommendation is based on the
18 specific facts of this case, which includes a large number of stormwater-only customers.

² Of the more than 30,000 ERUs associated with stormwater-only customers, only about 1,000 (approximately 3%) are for residential customers. PWSA COSS Model, SW>COS tab, rows 134-145.

1 **Stormwater Cost Allocation (Measured vs. Billable Impervious Area)**

2 **Q. On pages 36-37 of his testimony, Mr. Kalcic proposes to use measured impervious**
3 **area to allocate stormwater costs among customer classes, rather than billable**
4 **impervious area. First, can you explain the difference between these calculations?**

5 **A. Yes. PWSA used billable impervious area to allocate stormwater costs among customer**
6 **classes. As I explained in my direct testimony, there is an inherent level of inaccuracy in**
7 **measuring estimated impervious area from satellite imagery. For example, property lines**
8 **may not precisely match up with satellite imagery, the images may have trees**
9 **overhanging portions of a property, and so on. Based on these factors, PWSA**
10 **determined that it is reasonable to exclude properties with impervious area estimates of**
11 **less than 400 square feet. PWSA used calculations excluding properties with less than**
12 **400 square feet of impervious area, not just in designing rates, but also in allocating costs**
13 **among customer classes.**

14 Mr. Kalcic does not oppose the exclusion of properties with less than 400 square
15 feet from having to pay for stormwater service, but he objects to removing those
16 properties (and their impervious area) from the allocation of stormwater costs. Thus, he
17 would include all impervious area -- including the area on properties with small measured
18 areas -- in the allocation calculations.

19 **Q. Do you agree with Mr. Kalcic's proposed change in the allocation calculation?**

20 **A. No, I do not. As I explained above and in my direct testimony, there is a good reason to**
21 **exclude properties with small impervious area. The measurements may be anomalies or**
22 **errors and may not accurately represent the actual condition of the properties. In my**

1 opinion, there is good reason for excluding these very small properties for all purposes --
2 both billing and cost allocation. While I understand the general rationale behind Mr.
3 Kalcic's recommendation, in my opinion it is unreasonable to ignore the underlying
4 reasons why small properties are excluded.

5 **Q. What do you recommend?**

6 A. I recommend the Commission reject OSBA's recommendation and adopt PWSA's cost
7 allocation method for stormwater costs.

8 **Conclusion**

9 **Q. In conclusion, does Mr. Kalcic's testimony cause you to change any of your**
10 **conclusions or recommendations?**

11 A. No. I continue to support the use of PWSA's COSS in this case (with the minor
12 corrections I discussed in my direct testimony) as an important input to class revenue
13 allocation and rate design decisions. I also continue to support PWSA's methodology to
14 allocate the stormwater subsidy, and all other public benefit costs, among customer
15 classes.

16 **Q. Does this conclude your rebuttal testimony?**

17 A. Yes, it does.

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Schedule SJR-8

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)
to the Interrogatories of the Office of Small Business Advocate (“OSBA”), Set II in
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)
and R-2021-3024779 (stormwater)**

SUPPLEMENTAL

Request: OSBA-II-5 Reference the *Assets* tab in PWSA’s Cost of Service Study Model 4.13.21. Please breakout the asset value of PWSA-owned water service lines from the Authority’s total claimed water assets of \$452.8 million. Note that the requested breakout should separately identify the asset value of PWSA-owned water service lines that were (i) installed as part of PWSA’s LSLR program and (ii) not otherwise related to PWSA’s LSLR program. Include a copy of all associated workpapers.

Response:

Please see cell D37 in OSBA-II-5 Attach A Depreciation Study for the total value of the transmission and distribution mains. This file is from the workpapers of the most recent Depreciation Study completed by Gannett Fleming.

See OSBA-II-5 Attach B LSLR for the value of transmission and distribution mains that were installed as part of the LSLR program.

Supplemental Response: See OSBA-II Attach B v. 2 for the following:

- Tab A asset values for service lines associated with the lead service line program only.
- Tab B asset values for service lines excluding the lead service line program, transmission mains, and distribution mains.

The service line-only asset value acquisition cost is \$193,306,971.47 (\$67,448,909.77 + 125,858,061.70) and the current net book value is \$148,931,574.16 (\$64,957,822.01 + 83,973,752.15).

Response Provided by: Edward Barca, Director of Finance
The Pittsburgh Water and Sewer Authority

Dated: July 7, 2021

Asset ID	Asset Description	Extended Asset Desc	Asset Class ID	Acquisition Date	Acquisition Cost	LTD Depr Amount	Net Book Value
34000886	72 Ft Service Lines 2018	2016-325-104-0 2017 LSLR Demo	WDIST-STR-70	12/31/2018	214,500.27	6,141.04	208,359.23
34000883	3912 Ft Service Lines 2018	2016-325-105-0 2017 LSLR Zottola	WDIST-STR-70	12/31/2018	1,519,734.79	43,509.30	1,476,225.49
34000884	3343 Ft Service Lines 2018	2016-325-105-1 2017 LSLR Independent	WDIST-STR-70	12/31/2018	1,276,200.72	36,537.03	1,239,663.69
34000885	1120 Ft Service Lines 2018	2016-325-105-2 2017 LSLR Exceedances	WDIST-STR-70	12/31/2018	497,450.73	14,241.79	483,208.94
34001032	984 Ft Service Lines 2019	2018-325-100-1 LSLR Folinio	WDIST-STR-70	12/31/2019	495,972.55	7,119.13	488,853.42
34001033	5247 Ft Service Lines 2019	2018-325-100-2 LSLR Zottola	WDIST-STR-70	12/31/2019	2,965,324.23	42,563.91	2,922,760.32
34001034	3763 Ft Service Lines 2019	2018-325-100-3 LSLR Independent	WDIST-STR-70	12/31/2019	2,039,698.57	29,277.59	2,010,420.98
34001035	6437 Ft Service Lines 2019	2018-325-100-4 LSLR Petrakis	WDIST-STR-70	12/31/2019	3,749,367.50	53,817.97	3,695,549.53
34001036	4233 Ft Service Lines 2019	2018-325-100-5 LSLR Merante	WDIST-STR-70	12/31/2019	2,496,784.66	2,255,838.54	240,946.12
34001333	3564 FT Service Lines 2020	2018-325-100-6 ILSLR Folino	WDIST-STR-70	12/31/2020	3,609,497.80	141.18	3,609,356.62
34001279	77 1IN or Less Service Line	2018-325-101-0 Briarcliff Rd	WDIST-STR-70	12/31/2020	21,730.23	0.85	21,729.38
34001275	247.5 PEXa Service Lines	2018-325-101-0 Fox Way	WDIST-STR-70	12/31/2020	62,396.79	2.44	62,394.35
34001280	18 1IN or Less Service Line	2018-325-101-0 Plum Way	WDIST-STR-70	12/31/2020	5,079.79	0.20	5,079.59
34001276	89 PEXa Service Lines	2018-325-101-0 Plum Way	WDIST-STR-70	12/31/2020	22,437.63	0.88	22,436.75
34001277	530 PEXa Service Lines	2018-325-101-0 Wharton St	WDIST-STR-70	12/31/2020	133,617.38	5.23	133,612.15
34001278	185 PEXa Service Lines	2018-325-101-0 Wrights Way	WDIST-STR-70	12/31/2020	46,640.03	1.82	46,638.21
34001330	34264 FT Service Lines 2020	WSI9-325-100-1 LSLR Independent	WDIST-STR-70	12/31/2020	21,319,110.52	833.85	21,318,276.67
34001331	20795 FT Service Lines 2020	WSI9-325-100-2 LSLR Petrakis	WDIST-STR-70	12/31/2020	13,594,930.93	531.74	13,594,399.19
34001332	21088 FT Service Lines 2020	WSI9-325-100-3 LSLR Zottola	WDIST-STR-70	12/31/2020	13,378,434.65	523.27	13,377,911.38
					67,448,909.77	2,491,087.76	64,957,822.01

OSBA-II-5 Attach B v.2 Asset Values For Service Lines for LSLR and Excluding LSLR, Transmission Distro Mains

Asset ID	Asset Description	Extended Asset Desc	Asset Class ID	Acquisition Date	Acquisition Cost	LTD Depr Amount	Net Book Value
99UNIDPR90H	WATER LINES.6IN-DI	CAPITAL INT-1986.87.88.99 & PHASE1 BAL	ZWDISTSTR4042	7/1/1989	17,585,949.69	13,282,103.08	4,303,846.61
99UNID1990H	WATER LINES.8IN-DI	CAPITALIZED INT-1990 & PHASE2 BALANCE	ZWDISTSTR7074	3/1/1990	5,003,376.75	2,935,050.58	2,068,326.17
34000005	WATER LINES.8IN-DI	CURCIBLE/LORENZE RD	ZWDISTSTR4042	7/1/1991	26,184.27	18,185.96	7,998.31
34000062	WATER LINES.8IN-DI	BRADDOCK AVE	ZWDISTSTR7074	7/1/1993	2,412,427.00	1,234,623.93	1,177,803.07
34000084	WATER LINES.8IN-DI	LIBERTY - 30 TO 31 ST.	ZWDISTSTR4042	10/1/1994	27,520.31	17,483.07	10,037.24
99UNID1995H	WATER LINES.6IN-DI	WATER & SEWER SYSTEM ASSETS	ZWDISTSTR5963	8/1/1995	27,584,893.17	13,726,583.37	13,858,309.80
34000121	WATER LINES.8IN-DI	SMALLMAN ST. - EMER.	ZWDISTSTR4042	4/1/1996	27,950.34	16,689.88	11,260.46
34000160	WATER LINES.2IN-COPPER	BLOOMFIELD BRIDGE	ZWDISTSTR4042	10/1/1997	28,804.24	16,316.35	12,487.89
34000188	WATER LINES.2IN-COPPER	GRANDVIEW CREST - URA	ZWDISTSTR4042	7/1/1998	26,706.97	14,586.52	12,120.45
34000212	WATER LINES.4IN-DI	HARKER STREET	ZWDISTSTR7075	10/1/1999	186,435.00	69,574.89	116,860.11
34000240	WATER LINES.8IN-DI	FIRST AVENUE	ZWDISTSTR4042	7/1/2000	44,038.16	21,945.77	22,092.39
34000258	WATER LINES.8IN-DI	NEW PENNLEY PLACE (BROAD ST.)	ZWDISTSTR4042	1/1/2001	56,264.66	26,949.27	29,315.39
34000276	WATER LINES.8IN-DI	NO. SHORE DEVELOPMENT-S&EA (95&98)	ZWDISTSTR7075	10/1/2001	4,927,105.42	1,615,690.13	3,311,415.29
34000296	WATER LINES.6IN-DI	S.S. INDUST. DEV. -URA (15-95)	ZWDISTSTR7075	7/1/2002	2,844,704.26	883,982.32	1,960,721.94
34000348	WATER LINES.8IN-DI	PENNVEST - WATER SYS PHASE I (02)	ZWDISTSTR7075	10/1/2002	3,515,884.13	1,072,972.07	2,442,912.06
34000355	WATER LINES.4IN-DI	S.S. INDUSTRIAL DEVELOPMENT (02)	ZWDISTSTR7075	1/1/2003	200,299.37	59,985.46	140,313.91
34000370	WATER LINES.8IN-DI	FRANKSTOWN COURT (95)	ZWDISTSTR4043	1/1/2003	15,859.08	6,802.01	9,057.07
34000385	WATER LINES.4IN-DI	S.S. INDUSTRIAL DEVELOPMENT (02)	ZWDISTSTR7075	4/1/2003	200,874.53	59,014.11	141,860.42
34000465	WATER LINES.8IN-DI	NINE MILE RUN REDEVELOPMENT	ZWDISTSTR7075	2/4/2004	1,843,673.18	439,804.62	1,403,868.56
34000453	WATER LINES.3IN-COPPER	PURCHASE CITY ASPHALT	ZWDISTSTR4043	3/31/2004	24,621.14	9,746.41	14,874.73
34000459	WATER LINES.2IN-COPPER	WATERLINE REPAIR CONTRACT	ZWDISTSTR4043	3/31/2004	30,382.64	12,423.57	17,959.07
34000466	WATER LINES.6IN-DI	PENNVEST WSI PHASE II	ZWDISTSTR7075	10/11/2004	5,499,692.31	1,447,760.58	4,051,931.73
34000467	WATER LINES.6IN-DI	PENNVEST WSI PHASE III	ZWDISTSTR7075	10/14/2004	5,010,952.38	1,309,811.56	3,701,140.82
34000511	WATER LINES.4IN-DI	SOUTHSIDE RIVERFRONT HOUSING	ZWDISTSTR7075	12/31/2007	212,777.19	39,407.37	173,369.82
34000517	WATER LINES.4IN-DI	TEMPORARY STAFFING - KIMBALL	ZWDISTSTR4043	12/31/2007	285,177.02	86,442.94	198,734.08
34000518	WATER LINES.4IN-DI	TEMPORARY STAFFING - URS	ZWDISTSTR4043	12/31/2007	293,156.09	89,249.54	203,906.55
34000525	WATER LINES.8IN-DI	LOU MASON APARTMENTS W&S CONSTRUCTION	ZWDISTSTR4043	12/31/2007	34,927.68	10,741.33	24,186.35
34000527	WATER LINES.3IN-COPPER	BELLEFONTE ST SURVEY	ZWDISTSTR4043	12/31/2007	21,953.92	6,751.51	15,202.41
34000532	WATER LINES.8IN-DI	BUENA VISTA ST SURVEY	ZWDISTSTR4043	12/31/2007	29,449.48	9,056.62	20,392.86
34000537	WATER LINES.4IN-DI	4TH AVENUE 12IN WATER LINE RELAY	ZWDISTSTR7075	12/31/2007	209,158.85	39,017.90	170,140.95
34000576	WATER LINES.8IN-DI	NORTH SHORE CONNECTOR - (PAT)	ZWDISTSTR7076	12/1/2009	2,654,218.00	389,935.28	2,264,282.72
34000562	WATER SYSTEMS ACQUIRED.8IN-DI	MILLVALE WS DISTRIB PURCHASE '09	ZWDISTSTR7076	12/31/2009	2,968,233.04	435,640.42	2,532,592.62
34000607	WATER LINES.1IN-COPPER	DONATED PROP-CENTREAVE&WASHINGTON PL HYD	ZWDISTSTR7076	7/31/2010	16,769.55	2,316.00	14,453.55
34000625	WATER LINES.4IN-DI	DONATED PROP-CLIFFVIEW ST (CITY LINE-700	ZWDISTSTR6570	7/31/2010	202,742.58	30,477.52	172,265.06
32000036	WATER LINES.8IN-DI	PENNVEST WATER SYS IMPROVEMENT	ZWDISTSTR7076	12/31/2010	28,548.53	3,786.57	24,761.96
34000595	WATER LINES.8IN-DI	2010 WATER RELAYS	ZWDISTSTR7076	12/31/2010	3,804,429.19	504,602.40	3,299,826.79
34000682	BIGELOW BLVD WATERLINE-CONSTRUCTION		WDIST-STR-70	12/1/2011	767,868.00	99,677.47	668,190.53
35000231	Market Square Waterline-CM		WDIST-STR-70	1/1/2012	67,620.26	8,695.83	58,924.43
34000699	08103 BatesStWaterline 15&25	2008-325-20-4	WDIST-STR-70	12/31/2012	2,634,932.87	301,244.14	2,333,688.73
34000701	08145-21 MillvaleSrvLnMatrl	2008-325-23-0	WDIST-STR-70	12/31/2012	34,556.72	3,950.77	30,605.95
34000702	08147 BrackenrideStWtrln 11&21	2008-325-24-0	WDIST-STR-70	12/31/2012	1,184,367.38	135,405.22	1,048,962.16
34000711	Squirrel Hill Tunnel Rehab W/L	2008-930-82-8	WDIST-STR-70	12/31/2012	44,403.75	5,076.56	39,327.19
34000739	2012 DISC Water Relays		WDIST-STR-70	12/31/2012	840,163.48	96,053.42	744,110.06
34000744	Bates Street Waterline - Construction	2008-325-20-4	WDIST-STR-70	12/31/2013	369,237.73	36,942.56	332,295.17
34000745	Bates Street Waterline - CM	2008-325-20-5	WDIST-STR-70	12/31/2013	14,203.99	1,421.12	12,782.87
34000746	2010-2011 Waterline Replacement - CM	2008-325-25-0	WDIST-STR-70	12/31/2013	206,154.14	20,625.88	185,528.26
34000747	2010-2011 Waterline Replacement-Const	2008-325-25-0	WDIST-STR-70	12/31/2013	798,421.42	79,882.75	718,538.67
34000753	Rt 28 Waterline Material - Contract 2	2008-325-34-2	WDIST-MISC-70	12/31/2013	106,499.84	10,655.38	95,844.46
34000790	South Highland Bridge Water Lines		WDIST-STR-70	12/31/2013	44,500.00	4,452.25	40,047.75
34000792	2013 DISC Water Relays		WDIST-STR-70	12/31/2013	2,277,899.58	227,905.79	2,049,993.79

OSBA-II-5 Attach B v.2 Asset Values For Service Lines for LSLR and Excluding LSLR, Transmission Distro Mains

Asset ID	Asset Description	Extended Asset Desc	Asset Class ID	Acquisition Date	Acquisition Cost	LTD Depr Amount	Net Book Value
34000793	Bates Street Waterline - Construction	2008-325-20-4	WDIST-STR-70	12/31/2014	23,427.75	2,009.44	21,418.31
34000794	Bates Street Waterline - CM	2008-325-20-5	WDIST-STR-70	12/31/2014	3,364.50	288.57	3,075.93
34000795	2010-2011 Waterline Replacement-Const	2008-325-25-0	WDIST-STR-70	12/31/2014	20,000.00	1,715.42	18,284.58
34000805	SR28 Reconstruction - Waterline Reloc	2008-325-22-0	WDIST-STR-70	12/31/2014	18,807.11	1,613.10	17,194.01
34000810	2014 DISC Water Relays		WDIST-STR-70	12/31/2014	2,775,798.37	238,083.79	2,537,714.58
34000832	2015 DISC Water Relays		WDIST-STR-70	12/31/2015	1,183,777.66	84,634.90	1,099,142.76
34000836	Waterline replacementLigonier St @ 34th	Ligonier St @ 34th St	WDIST-STR-70	12/31/2016	54,503.25	3,116.66	51,386.59
34000838	Waterline replacementSecond Avenue	Second Avenue	WDIST-STR-70	12/31/2016	100,662.70	5,756.20	94,906.50
34000850	2014 Waterline Relay Contract		WDIST-STR-70	12/31/2016	3,235,646.50	185,024.27	3,050,622.23
34000860	Waterline Relay - Oliver Avenue	Oliver Avenue	WDIST-STR-70	12/31/2017	10,310.00	442.37	9,867.63
34000861	Waterline Relay - Camelia/Price Way	Camelia/Price Way	WDIST-STR-70	12/31/2017	141,092.98	6,053.85	135,039.13
34000862	Waterline Relay - Heinz St	Heinz St	WDIST-STR-70	12/31/2017	12,807.27	549.52	12,257.75
34000863	Waterline Relay - Smithfield St at 4th A	Smithfield St at 4th Ave	WDIST-STR-70	12/31/2017	36,938.50	1,584.91	35,353.59
34000864	Waterline Relay - Cecil Pl near McCrea W	Cecil Pl near McCrea Way	WDIST-STR-70	12/31/2017	43,656.26	1,873.16	41,783.10
34000865	Waterline Relay - Bigelow Blvd near Herr	Bigelow Blvd near Herron Ave	WDIST-STR-70	12/31/2017	41,268.52	1,770.70	39,497.82
34000869	Lothrop & Darrah Waterline Relays		WDIST-STR-70	12/31/2017	2,074,861.98	89,025.84	1,985,836.14
34000872	Water Relay-6In-21LF	7745 FORBES AVE @ PEEBLES ST	WDIST-STR-70	12/31/2018	46,358.28	1,327.22	45,031.06
34000873	Water Relay-6In-124.35LF	List St near Buente St	WDIST-STR-70	12/31/2018	91,874.60	2,630.32	89,244.28
34000874	Water Relay-6In-34LF	2607 Murray Avenue	WDIST-STR-70	12/31/2018	10,527.26	301.39	10,225.87
34000875	Water Relay-6In-73LF	Henry St at Utica Way near S Dithridge	WDIST-STR-70	12/31/2018	53,859.45	1,541.98	52,317.47
34000876	Water Relay-6In-76LF	5636 Forbes Ave	WDIST-STR-70	12/31/2018	58,902.23	1,686.34	57,215.89
34000877	Water Relay-8In-215LF/6In-43LF	Murray Ave at Forward Ave	WDIST-STR-70	12/31/2018	93,610.60	2,680.02	90,930.58
34000878	Water Relay-8In-32LF	Angle St & Balfour Street	WDIST-STR-70	12/31/2018	24,250.80	694.29	23,556.51
34000889	Water Relays 2017	2017-325-101-0	WDIST-STR-70	12/31/2018	1,067,669.58	30,566.88	1,037,102.70
34000892	Water Relays 2016	2016-325-102-0	WDIST-STR-70	12/31/2018	1,238,000.17	35,443.38	1,202,556.79
34000894	12In Waterline Pipe-2500 Ft Ellsworth	2013-325-165-0 S.Negley to GreenBriar	WDIST-STR-70	12/31/2018	1,441,882.38	41,280.42	1,400,601.96
34000917	Water Relay - 6in-29.2 LF	Bigelow Boulevard at Herron Avenue	WDIST-STR-70	12/31/2019	56,358.10	808.95	55,549.15
34000918	Water Relay - 6in-39.16 LF	45 Simicir Street	WDIST-STR-70	12/31/2019	68,341.80	980.97	67,360.83
34000920	Water Relay - 8in-21.5 LF	772 Greenfield Avenue	WDIST-STR-70	12/31/2019	27,469.23	394.29	27,074.94
34000922	Water Relay - 6in-40.5 LF & 8in-253.5 LF	40th Street at Willow Street	WDIST-STR-70	12/31/2019	143,498.27	2,059.75	141,438.52
34000923	Water Relay - 4in-44 LF	Howe Street at Osterburg Way	WDIST-STR-70	12/31/2019	6,540.20	93.88	6,446.32
34000924	Water Relay - 6in-54.3 LF	Butler Street and 42nd Street	WDIST-STR-70	12/31/2019	125,898.29	1,807.12	124,091.17
34000925	Water Relay - 6in-29 LF 12in-77 LF & 36i	Smallman Street - 36in Relay	WDIST-STR-70	12/31/2019	1,042,059.93	14,957.61	1,027,102.32
34000926	Water Relay - 6in-71 LF & 8in-886 LF	Herron Avenue Relay	WDIST-STR-70	12/31/2019	1,008,621.73	14,477.64	994,144.09
34000927	Water Relay - 6in-23.5 LF	1400 Smallman Street @ 15th Street	WDIST-STR-70	12/31/2019	112,954.05	1,621.33	111,332.72
34000928	Water Relay - 8in-96 LF	420-427 Ella St	WDIST-STR-70	12/31/2019	90,401.73	1,297.62	89,104.11
34000931	Water Relay - 8in-30.78 LF	1447 Sandusky Street	WDIST-STR-70	12/31/2019	7,588.60	108.93	7,479.67
34001022	Ductile Iron Class 52 - 43.75 LF 4IN	2017-424-113-0 Iron Pipe Class 52	WDIST-STR-70	12/31/2019	11,446.87	164.31	11,282.56
34001023	Ductile Iron Class 52 - 208.75 LF 6IN	2017-424-113-0 Iron Pipe Class 52	WDIST-STR-70	12/31/2019	133,216.99	1,912.18	131,304.81
34001024	Ductile Iron Class 52 - 16 LF 8IN	2017-424-113-0 Iron Pipe Class 52	WDIST-STR-70	12/31/2019	7,973.37	114.45	7,858.92
34001037	2008 Waterlines	2008 Waterlines	WDIST-STR-60	12/31/2019	7,413,038.84	124,142.60	7,288,896.24
34001058	20.46 LF of 8IN DIP Water Relay	6555 Penn Ave	WDIST-STR-70	12/31/2020	93,155.55	3.64	93,151.91
34001059	22.6 LF of 6IN DIP Water Relay	Lime St at W. Saw Mill Run Blvd	WDIST-STR-70	12/31/2020	13,220.00	0.52	13,219.48
34001060	22.75 LF of 6IN DIP Water Relay	1055 Morewood Ave	WDIST-STR-70	12/31/2020	38,216.20	1.49	38,214.71
34001061	22.8 LF of 8IN DIP Water Relay	List St	WDIST-STR-70	12/31/2020	8,366.00	0.33	8,365.67
34001062	23.25 LF of 6IN DIP Water Relay	5649 2nd Ave	WDIST-STR-70	12/31/2020	30,898.95	1.21	30,897.74
34001063	24.5 LF of 8IN DIP Water Relay	Hatteras St at Tinsbury St	WDIST-STR-70	12/31/2020	7,758.80	0.30	7,758.50
34001065	300 LF of 6IN DIP Water Relay	Edgerton Ave at Selkirk Way	WDIST-STR-70	12/31/2020	81,864.10	3.20	81,860.90
34001066	83 LF of 6IN DIP Water Relay	49 Roanoke St	WDIST-STR-70	12/31/2020	21,666.23	0.85	21,665.38
34001073	44 LF IN Ductile Iron Pipe Class 52	2017-325-103-0 Hamilton Avenue	WDIST-STR-70	12/31/2020	8,985.01	0.35	8,984.66

Asset ID	Asset Description	Extended Asset Desc	Asset Class ID	Acquisition Date	Acquisition Cost	LTD Depr Amount	Net Book Value
34001074	183 LF IN Ductile Iron Pipe Class 52	2017-325-103-0 Hamilton Avenue	WDIST-STR-70	12/31/2020	36,743.41	1.44	36,741.97
34001076	2195 LF 12IN Ductile Iron Pipe Class 52	2017-325-103-0 Hamilton Avenue	WDIST-STR-70	12/31/2020	1,133,696.49	44.34	1,133,652.15
34001114	Public Water Service Lines	2017-325-103-0 Hamilton Avenue	WDIST-STR-70	12/31/2020	483,166.26	18.90	483,147.36
34001115	38 LF 4IN Ductile Iron PC 54 zinc	2017-325-103-0 South Millvale Avenue	WDIST-STR-70	12/31/2020	6,725.81	0.26	6,725.55
34001116	81 LF 6IN Ductile Iron PC 54 zinc	2017-325-103-0 South Millvale Avenue	WDIST-STR-70	12/31/2020	16,837.57	0.66	16,836.91
34001263	4LF 4IN Ductile Iron Pipe Class 52	2018-325-101-0 Plum Way	WDIST-STR-70	12/31/2020	1,827.58	0.07	1,827.51
34001264	14.6LF 4IN Ductile Iron Pipe Class 52	2018-325-101-0 Wharton St	WDIST-STR-70	12/31/2020	6,670.68	0.26	6,670.42
34001265	8LF 4IN Ductile Iron Pipe Class 52	2018-325-101-0 Wrights Way	WDIST-STR-70	12/31/2020	3,655.17	0.14	3,655.03
34001266	134.5LF 6IN Ductile Iron Pipe Class 52	2018-325-101-0 Briarcliff Rd	WDIST-STR-70	12/31/2020	136,852.24	5.35	136,846.89
34001267	85.5LF 6IN Ductile Iron Pipe Class 53	2018-325-101-0 Fox Way	WDIST-STR-70	12/31/2020	64,995.15	2.54	64,992.61
34001268	41LF 6IN Ductile Iron Pipe Class 54	2018-325-101-0 Plum Way	WDIST-STR-70	12/31/2020	41,316.62	1.62	41,315.00
34001269	54.5LF 6IN Ductile Iron Pipe Class 55	2018-325-101-0 Wharton St	WDIST-STR-70	12/31/2020	19,812.65	0.77	19,811.88
34001270	LF 6IN Ductile Iron Pipe Class 56	2018-325-101-0 Wrights Way	WDIST-STR-70	12/31/2020	26,336.32	1.03	26,335.29
34001271	1470.8LF 8IN Ductile Iron Pipe Class 52	2018-325-101-0 Fox Way	WDIST-STR-70	12/31/2020	764,783.49	29.91	764,753.58
34001272	501LF 8IN Ductile Iron Pipe Class 53	2018-325-101-0 Plum Way	WDIST-STR-70	12/31/2020	799,291.95	31.26	799,260.69
34001273	502LF 8IN Ductile Iron Pipe Class 54	2018-325-101-0 Wharton St	WDIST-STR-70	12/31/2020	272,263.57	10.65	272,252.92
34001274	LF 8IN Ductile Iron Pipe Class 55	2018-325-101-0 Wrights Way	WDIST-STR-70	12/31/2020	272,807.02	10.67	272,796.35
34001334	240 LF 8IN Class 52 Ductile Iron Pipe	2019-DEV-001 NUVO Carson St.	WDIST-STR-70	12/31/2020	28,181.33	1.10	28,180.23
34001342	10 LF 8IN Class 52 Ductile Iron Pipe	2019-DEV-002 The Riviera	WDIST-STR-70	12/31/2020	1,731.57	0.07	1,731.50
					125,858,061.70	41,884,309.55	83,973,752.15

Schedule SJR-9

Projects with Identifiable Locations and Value of \$1 Million or More from Schedule SJR-8

Asset ID	Asset Description	Extended Asset Desc	Asset Class ID	Acquisition Date	Acquisition Cost	LTD Depr Amount	Net Book Value
34000062	WATER LINES.8IN-DI	BRADDOCK AVE	ZWDISTSTR7074	7/1/1993	2,412,427.00	1,234,623.93	1,177,803.07
34000276	WATER LINES.8IN-DI	NO. SHORE DEVELOPMENT-S&EA (95&98)	ZWDISTSTR7075	10/1/2001	4,927,105.42	1,615,690.13	3,311,415.29
34000296	WATER LINES.6IN-DI	S.S. INDUST. DEV. -URA (15-95)	ZWDISTSTR7075	7/1/2002	2,844,704.26	883,982.32	1,960,721.94
34000465	WATER LINES.8IN-DI	NINE MILE RUN REDEVELOPMENT	ZWDISTSTR7075	2/4/2004	1,843,673.18	439,804.62	1,403,868.56
34000576	WATER LINES.8IN-DI	NORTH SHORE CONNECTOR - (PAT)	ZWDISTSTR7076	12/1/2009	2,654,218.00	389,935.28	2,264,282.72
34000562	WATER SYSTEMS ACQUIRED.8IN-DI	MILLVALE WS DISTRIB PURCHASE '09	ZWDISTSTR7076	12/31/2009	2,968,233.04	435,640.42	2,532,592.62
34000699	08103 BatesStWaterline 15&25	2008-325-20-4	WDIST-STR-70	12/31/2012	2,634,932.87	301,244.14	2,333,688.73
34000702	08147 BrackenrideStWtrln 11&21	2008-325-24-0	WDIST-STR-70	12/31/2012	1,184,367.38	135,405.22	1,048,962.16
34000869	Lothrop & Darrah Waterline Relays		WDIST-STR-70	12/31/2017	2,074,861.98	89,025.84	1,985,836.14
34000894	12In Waterline Pipe-2500 Ft Ellsworth	2013-325-165-0 S.Negley to GreenBriar	WDIST-STR-70	12/31/2018	1,441,882.38	41,280.42	1,400,601.96
34000925	Water Relay - 6in-29 LF 12in-77 LF & 36i	Smallman Street - 36in Relay	WDIST-STR-70	12/31/2019	1,042,059.93	14,957.61	1,027,102.32
34001076	2195 LF 12IN Ductile Iron Pipe Class 52	2017-325-103-0 Hamilton Avenue	WDIST-STR-70	12/31/2020	1,133,696.49	44.34	1,133,652.15

Schedule SJR-10

Pittsburgh to buy Millvale water system



MARTINE POWERS
Pittsburgh Post-Gazette

JUL 9, 2009

12:00 AM

The Pittsburgh Water and Sewer Authority is set to purchase the Millvale water system for \$1.55 million in an effort to cut the costs of upcoming infrastructure improvements. Mayor Luke Ravenstahl and Millvale council President James Porter made the announcement at a press conference in the Millvale council chambers yesterday.

Mr. Ravenstahl said the acquisition is part of his mission to promote collaboration between municipalities. PWSA, with its size and expertise, he said, would be able to undertake major construction projects in Millvale's system for less money than Millvale could. Millvale council is expected to approve the takeover Tuesday, and the city water authority will accept the agreement July 31. After that, the sale should be completed in 90 days, PWSA Executive Director Michael Kenney said.

Discuss this issue

Would you like to see Pittsburgh take over your town's water system? Visit our [community forum and share your comments about this issue.](#)

The buyout will bring 1,800 customers and \$700,000 in revenue per year to the city authority. Mr. Kenney said he expects the city to start making a profit on the system in five years.

But Pittsburgh's purchase of the Millvale water system is expected to increase costs for Millvale residents, at least initially. The average Millvale resident now pays \$27.50 per month for water; after the sale they will pay,

on average, \$5 more per month. Still, Mr. Kenney said, the rate increase would be higher if Millvale had to pay for its own construction projects.

The agreement was about 10 years in the making, officials said. Mr. Kenney said the city water authority is considering purchasing other water systems in communities surrounding Pittsburgh. Right now, though, the authority is only "communicating" with officials from these other towns, he said.

First Published July 9, 2009, 12:00am

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

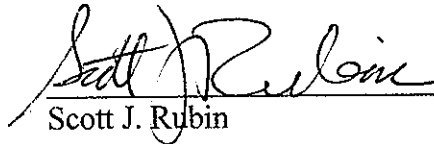
Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Scott J. Rubin, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 3-R, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 29, 2021
*314180

Signature:



Scott J. Rubin

Consultant Address: 4627 Chandlers Forde
Sarasota, FL 34235-7118

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3024773 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	
	:	

Rebuttal Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement 4R

July 29, 2021

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

3

4 **Q. ARE YOU THE SAME ROGER COLTON WHO PREVIOUSLY PREPARED**
5 **DIRECT TESTIMONY ON BEHALF OF THE OFFICE OF CONSUMER**
6 **ADVOCATE IN THIS PROCEEDING?**

7 A. Yes, I am.

8

9 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

10 A. The purpose of my rebuttal testimony is to respond to the Direct Testimony of OSBA
11 witness Brian Kalcic regarding the Pittsburgh Water and Sewer Authority (PWSA)
12 allocation of universal service costs to all customer classes.

13

14 **Part 1. Long-Standing Precedent.**

15 **Q. PLEASE RESPOND TO MR. KALCIC’S COMMENTS ON PREVIOUS**
16 **COMMISSION DECISIONS REGARDING THE ALLOCATION OF**
17 **UNIVERSAL SERVICE COSTS.**

18 A. Mr. Kalcic testifies that he was informed by Counsel that “the Commission has had a
19 long-standing policy that directs utilities to recover CAP-related costs solely from
20 residential customers.” (OSBA St. 1, at 13). As “evidence” of what he claims as a “long-
21 standing policy,” Mr. Kalcic provides a list of cases evidently provided by OSBA counsel
22 in support of his proposition.

23

1 **Q. DOES MR. KALCIC OFFER SIMILAR ARGUMENTS WITH RESPECT TO**
2 **WATER, WASTEWATER AND STORMWATER SERVICE?**

3 A. Yes. Similarly, my references to “water” below are intended to address Mr. Kalcic’s
4 arguments for all three services: water, wastewater and stormwater.
5

6 **Q. IS THERE LONG-STANDING COMMISSION PRECEDENT REGARDING THE**
7 **ALLOCATION OF UNIVERSAL SERVICE COSTS BY A REGULATED**
8 **MUNICIPAL UTILITY THAT MR. KALCIC FAILED TO MENTION?**

9 A. PGW’s universal service costs have been allocated among all customer classes since the
10 Customer Responsibility Program (CRP) program (PGW’s CAP) was first created in 1993.¹
11 Even since the regulation of PGW was transferred to the PUC, the PUC has maintained this
12 cost allocation policy for PGW through an interim base rate proceeding,² two emergency
13 rate proceedings,³ three full base rate cases,⁴ and the PGW restructuring proceeding.⁵ The
14 last time this cost allocation decision was raised (in PGW’s 2010 base rate case), the case
15 was resolved by settlement.
16

17 **Q. AS A MUNICIPAL UTILITY, WOULD IT BE PARTICULARLY INEQUITABLE**
18 **FOR PWSA TO CHANGE THE COST ALLOCATION SO THAT UNIVERSAL**

¹ Recommended Decision in the Matter of Proposed Changes to PGW’s Customer Service Regulations (Sept. 22, 1993), affirmed, Order and Resolution of the Philadelphia Gas Commission (November 9, 1993).

² Pa. PUC v. Philadelphia Gas Works, Docket No. R-00005654 (Order Entered February 21, 2001).

³ Petition of Philadelphia Gas Works for Extraordinary Rate Relief Pursuant to 66 Pa. C.S. § 1308(e), Docket No. R-00017034 (Emergency Order Entered April 12, 2002); Pa. PUC v. Philadelphia Gas Works - Petition for Emergency Rate Relief, Docket No. R-2008-2073938 (Order Entered December 19, 2008).

⁴ Pa. PUC v. Philadelphia Gas Works, Docket No. R-00006042 (Order Entered October 4, 2001); Pa. PUC v. Philadelphia Gas Works, Docket No. R-00017034 (Order Entered August 8, 2002); Pa. PUC v. Philadelphia Gas Works, Docket No. R-00061931 (Order Entered September 28, 2007).

⁵ Pa. PUC v. Philadelphia Gas Works, Docket No. M-00021612 (Order Entered April 17, 2003).

1 **SERVICE CHARGES ARE ALLOCATED ONLY TO THE RESIDENTIAL**
2 **CUSTOMER CLASS?**

3 A. Yes. To allocate all universal service costs exclusively to the residential customer class
4 today would further operate to remake the bargain that the City of Pittsburgh has made
5 with its utility customers. As with PGW, the offer of programs in support of universal
6 service for all customers is a *quid pro quo* that was exacted in exchange for substantial --and
7 continuing-- public perquisites provided to PWSA.⁶ So long as all customer classes enjoy
8 the fruits of that exchange, they should also contribute to paying for the obligations that
9 were bargained for as part of the exchange.

10
11 As with PGW, as a municipal utility, PWSA was granted two sets of public perquisites on
12 behalf of all of its customers: (1) the right to exercise eminent domain, and (2) the right to
13 use the public's streets, alleys and public ways as transportation corridors. The bargain that
14 was made in consideration of these two public perquisites is continuing. In accepting and
15 exercising the power of eminent domain, and the right to use public streets and ways, an

⁶ The Texas courts, for example, have recognized this exchange. A public utility, Texas statutes say, includes owning or operating or managing a pipeline "if any part of the right of way for said line has been acquired, or is hereafter acquired, by the exercise of the right of eminent domain." The court held: "If a corporation, acting within its corporate powers, acquires land for a pipeline to be owned by it for the transport of natural gas, through an exercise of the power of eminent domain (set forth) in (Texas statutes), it thereby submits to the regulatory provisions (of statute) so that its ownership of the pipeline, under regulation, is a "public use" by legislative declaration."

The court concluded: "In the present case, it is undisputed that (the natural gas company) was acting within its corporate powers under a resolution of its board of directors, that the easement across Loesch's land was necessary for the public interest and that it relies upon the power of eminent domain given in article 1436. In acquiring the easement under authority of that statute, (the natural gas company) submits to regulation by the State of Texas and thereby becomes charged with numerous statutory duties to the public." *Loesch v. Oasis Pipeline Company*, 665 S.W.2d 595, 598 - 599 (Tx. App. 1984). See also, Colton (1997). "The 'Obligation to Serve' and a Competitive Electric Industry, prepared for U.S. Department of Energy, Office of Economic, Electricity and Natural Gas Analysis, Oak Ridge National Laboratory, Report No. ORNL/Con-459 (documenting analogy of non-profit hospitals who, in exchange for public perquisites, bear the burden of providing indigent care).

1 exchange has occurred. PWSA’s customers have received the two perquisites and, as
2 compensation for those benefits, have agreed to “pay” through the support of universal
3 service.

4
5 In the health care industry, the same exchange of public perquisites for universal service has
6 been made. “The concept of tax exemption as an exchange originated in the common law
7 of charitable trusts and is frequently restated in contemporary court decisions considering
8 charitable hospitals' exemption from various taxes. The cases do not indicate that
9 charitable exemptions turn on an exact accounting of the costs of public services
10 provided in comparison with tax revenues foregone. Exemption has not, at least
11 historically, been conceived as a negotiated transaction between the tax authorities and
12 the exempt organization. The task of such an accounting would be beyond the
13 institutional capacities of the courts. Instead, the exchange concept appears to function as
14 one of the underlying assumptions that lead (*sic*) a legislature to grant exempt status to a
15 class of organizations.”⁷

16
17 **Q. HOW DOES THIS RELATE TO THE ALLOCATION OF PWSA’S UNIVERSAL**
18 **SERVICE COSTS?**

⁷ James Simpson and Sarah Strum, "How Good a Samaritan? Federal Income Tax Exemption for Charitable Hospitals Reconsidered," 14 U. Puget Sound L. Rev. 633, 655 - 656 (1991); see also, Barry Furrow, "Forcing Rescue: The Landscape of Health Care Provider Obligations to Treat Patients," 3 Health Matrix 31 (1993). The connection between the obligation to serve the indigent and the grant of federal, state and local tax subsidies is not merely implicit. When subsidies were challenged in court, judicial decisions: “were reached in the context of reviewing the validity of charitable trusts for hospital purposes, or the entitlement of charitable hospitals to exemption from various state and local taxes. The decisions rejected the idea that charity demanded exclusive attention to the indigent, but made the accessibility of the hospital to all without regard to ability to pay an important consideration.” How Good a Samaritan, *supra*, at 642.

1 A. As with PGW, this discussion supports the conclusion that all customer classes should help
2 fund universal service programs. The public perquisites that have been provided to all
3 PWSA customers have a substantial value. If PWSA could *not* use eminent domain, in other
4 words, or if it could not use the streets and public ways as transportation corridors for its
5 lines or pipelines, the increased costs associated with acquiring its distribution system would
6 be borne by all ratepayers. Providing PWSA’s customers these public perquisites, therefore,
7 conveys substantial financial benefits to all customers.

8
9 As with PGW, having received the financial benefits of the bargain, all PWSA customers
10 should thus pay the financial compensation to the public for having provided those benefits
11 in the first place. With all end users having taken their share of the benefits of the bargain,
12 all end users should also be required to pay their fair share of the responsibility part of the
13 bargain. To allow otherwise would be to grant the benefit while forgiving the costs.

14
15 **Q. HAS THE COMMISSION EVER RECOGNIZED THE BENEFITS TO THE CITY**
16 **AS A WHOLE, INCLUDING COMMERCIAL CUSTOMERS, ARISING FROM A**
17 **BILL AFFORDABILITY PROGRAM BY A MUNICIPAL UTILITY?**

18 A. Yes. The PUC noted in its 2014 Universal Service Plan Order regarding PGW’s
19 universal service programs that PGW differs from other Pennsylvania natural gas utilities
20 in that PGW does not have stockholders. Instead, PGW is owned and operated by the
21 City of Philadelphia.

22
23 The City of Philadelphia also owns its own water distribution system, the Philadelphia
24 Water Department. On November 19, 2015, the Philadelphia City Council unanimously

1 adopted a percentage of income bill affordability program for the Philadelphia Water
2 Department (Philadelphia City Council Bill 140607-AA). That program, called IWRAP
3 (Income-based Water Rate Affordability Program), was modeled on the percentage of
4 income program operated by PGW, the City's municipally-owned gas system. The City
5 Council legislation provided that:

6 Monthly IWRAP bills shall be affordable for low-income households, based on a
7 percentage of the household's income and a schedule of different percentage rates
8 for (i) households with income up to fifty percent (50%) of FPL, (ii) households with
9 income from fifty percent (50%) to (100%) of FPL, and (iii) households with income
10 from one hundred percent (100%) to one hundred fifty percent (150%) of FPL, and
11 shall be charged in lieu of the Department's service, usage, and stormwater charges.
12

13 Even more importantly for purposes here, however, is that, because the purpose of the
14 program was not simply to provide benefits to low-income customers, but to provide
15 benefits to the entire City, including commercial establishments throughout the City, the
16 costs of the Philadelphia Water Department bill affordability program were spread over
17 all customer classes.

18
19 The PWSA universal service programs serve the same municipal functions for the City of
20 Pittsburgh, and provide the same benefits to all entities in the City of Pittsburgh, as does
21 the recently-adopted affordability program for PWSA's sister municipally-owned utility
22 in Philadelphia. To recognize those widespread benefits accruing to all customers,
23 including commercial customers, would not involve a change in PUC policy. It would
24 instead simply *continue* the same policy that has been in effect since PGW's program was
25 first begun.
26

1 Finally, Mr. Kalcic did not discuss the fact that OSBA specifically litigated the allocation
2 of universal service costs for a municipal utility in PGW’s 2017 base rate proceeding.
3 (Pennsylvania PUC v. Philadelphia Gas Works, Docket Nos. R-2017-2586783, Opinion
4 and Order, November 8, 2017). OSBA even cited the same cases in that PGW litigation
5 that counsel provided to Mr. Kalcic to cite in his testimony here.

6
7 Just as the Commission rejected that precedent in the 2017 proceeding regarding PGW, it
8 should do so for PWSA as a municipal utility in this proceeding. Instead, the
9 Commission can (and should) reach the same findings for PWSA.

10
11 Moreover, the Commission should reach the same further conclusion with respect to
12 PWSA, in its capacity as a water utility, that it reached with respect to PGW in its
13 capacity as a natural gas utility. “We agree with the conclusion of the ALJ that there is
14 nothing within PGW’s allocation of universal service costs to all firm customers that
15 violates the Code or our Regulations.” (Id., at 73).

16
17 In short, Mr. Kalcic has not presented any compelling evidence to demonstrate that
18 nearly 30 years of the historic practice for a City-owned utility should be changed.

19
20 **Q. ARE RECENT COMMISSION DECISIONS REGARDING PECO GAS OR**
21 **COLUMBIA GAS CONTRARY TO THE PRINCIPLE OF ALLOCATING**
22 **UNIVERSAL SERVICE COSTS TO ALL CUSTOMER CLASSES?**

1 A. No. Even setting aside the differences I explained immediately above between PWSA
2 and these two investor-owned utilities (PECO and Columbia Gas), Mr. Kalcic
3 erroneously cites recent decisions for PECO Gas and Columbia Gas as establishing the
4 principle that universal costs should be allocated exclusively to the residential class. In
5 reaching this conclusion, I acknowledge that the PUC rejected an OCA proposal to
6 allocate universal service costs to all customer classes in a recent Columbia Gas decision.
7 (Opinion and Order, *Pa. P.U.C. v. Columbia Gas of Pa., Inc.*, Docket No. R-2020-
8 3018835 (Order entered Feb. 19, 2021), pp. 258-261). The PUC explicitly stated in that
9 Order that its decision was limited to the facts presented in that proceeding. (*Id.*, at 261).
10 For example, the Commission observed that OCA did “not propose a specific recovery
11 rate design method.” (*Id.*) That decision, in other words, is not precedential, and
12 certainly not controlling, of this proceeding. The Joint Statement of Chairman Gladys
13 Brown Dutrieuille and Vice Chairman David Sweet further indicated that the Columbia
14 Gas decision was limited to the facts of that case.

15
16 In the recent PECO Gas rate case decision (Docket No. R-2020-3018929), the PUC
17 reached a similar decision. (Opinion and Order, at 265, June 22, 2021). Similarly, a Joint
18 Statement of Chairman Gladys Brown Dutrieuille and Vice Chairman David Sweet was
19 issued noting that its decision was limited to the facts of the PECO Gas case. It thus
20 cannot be precedential.

21

1 **Part 2. The Positive Impacts of Universal Service to the Entire Pittsburgh Community.**

2 **Q. WHAT IS THE COMMISSION’S MOST RECENT POLICY ON THE ISSUE OF**
3 **THE ALLOCATION OF UNIVERSAL SERVICE COSTS?**

4 A. In its 2019 Revised CAP Policy Statement in the PUC’s generic investigation into energy
5 affordability in Pennsylvania (Docket M-2019-3012599) (hereafter, “Final CAP Policy
6 Statement”),⁸ the Commission explicitly acknowledged that, historically, it allocated
7 universal service costs exclusively to residential customers, but then stated that “our
8 review of Pennsylvania’s current universal service model in the *Review and Energy*
9 *Affordability* proceedings has provided reasons to reconsider this position. (Final CAP
10 Policy Statement, at 92) (emphasis added). The Commission observed that “[t]he current
11 cost-recovery method for universal services, including CAP costs, is putting a significant
12 burden on residential customer bills. . .” (Id.).

13
14 I agree with these observations. There is a substantial population of PWSA customers
15 who have difficulties in paying their utility bills without being sufficiently “low-income”
16 to qualify for CAP. The current CAP costs could prove to be a problem for these
17 customers, and those costs will increase in the future, both for the reasons identified in
18 the Commission’s Final CAP Policy Statement (pages 94 – 95).

19
20 The Commission stated in its Final CAP Policy Statement that “the Commission finds it
21 appropriate to consider recovery of the costs of CAP costs from all ratepayer classes.

⁸ http://www.puc.pa.gov/about_puc/consolidated_case_view.aspx?Docket=M-2019-3012599 (November 5, 2019)
(last accessed July22, 2021).

1 Utilities and stakeholders are advised to be prepared to address CAP cost recovery in
2 utility-specific rate cases consistent with the understanding that the Commission will no
3 longer routinely exempt non-residential classes from universal service obligations. . .”
4 (Id., at 99, notes omitted). (emphasis added).⁹ The discussion below is consistent with
5 this Commission guidance.

6
7 **Q. DID THE COMMISSION ARTICULATE SPECIFIC FACTORS TO CONSIDER**
8 **IN DECIDING HOW TO ALLOCATE UNIVERSAL SERVICE COSTS?**

9 A. Yes. Mr. Kalcic states that he was advised by his Counsel that the exclusive reason the
10 Commission “expressed concern” was because “the anticipated increases in universal
11 spending (sic) on the part of electric and natural gas distribution companies would make
12 electric and/or natural gas bills ‘increasingly unaffordable’ for non-CAP customers, if
13 universal service costs were continued to be recovered solely from residential
14 customers.” (OSBA St. 1, at 15). Based on his counsel’s advice, Mr. Kalcic addresses
15 only that question.

16
17 That discussion, however, is too narrow, and does not capture the full range of the
18 Commission’s decision when the Commission decided that it “will no longer routinely
19 exempt non-residential classes from universal service obligations.” In addition to the
20 limited issue which Mr. Kalcic says he was told served as the basis for universal service

⁹ The Commission observed that it was not making “a final precedential decision regarding cost recovery in this docket. We are merely providing that the recovery of CAP costs in particular can be fully explored in utility rate cases henceforth.” (Id., at note 150).

1 cost allocation decisions, the PUC was correct when it found in its 2019 Final CAP
2 Policy Statement that:

- 3 ➤ poverty and its impacts are “not just residential class problems” (Final CAP
4 Policy Statement, at 96);
- 5
6 ➤ several factors “contribute to households struggling to afford utility service” and
7 that, amongst those factors are “poverty, poor housing stock, and other factors”
8 (Id., at 96)
- 9
10 ➤ poverty is a broad-based social problem not associated with any particular
11 customer class, including specifically not being associated with the residential
12 class exclusively. (Id., citing 1992 *Final Report on The Investigation of*
13 *Uncollectible Balances*¹⁰ at Docket No. I-00900002, at 157 – 158).
- 14
15 ➤ “Helping low-income families maintain utility service and remain in their homes
16 is also a benefit to the economic climate of a community.” (Id., at 96, *Pa. PUC,*
17 *et al. v. PGW*, Docket No. R-2017-2586783 (order entered on November 8,
18 2017), at 75).
- 19
20 ➤ “Clearly, there is a persuasive argument to be made that home heating and energy
21 assistance for low-income households serves a public good whose responsibility
22 is not merely other residential ratepayers.” (Id., at 96 – 97),
- 23
24 ➤ “While there are strong arguments to be made that non-residential classes do
25 benefit from universal services, there are also strong arguments to be made in
26 favor of multi-class allocation even if one discounts any non-residential benefits.”
27 (Id., at 97).
- 28
29 ➤ “In approving PGW’s practice of recovering such costs across all ratepayer
30 classes, we noted that ‘all firm customers, including commercial and industrial
31 customers, benefit indirectly from PGW’s extensive low-income assistance
32 programs.’” (Id., at 96, citing *Pa. PUC, et al. v. PGW*, Docket No. R-2017-
33 2586783 (order entered on November 8, 2017), at 75). (internal note
34 omitted).
- 35

¹⁰ <http://www.puc.pa.gov/pdocs/1524987.pdf>. This docket number is sometimes cited as Docket No. I-900002.

1 The Commission favorably noted that in the 2017 PGW rate case proceeding, “PGW
2 argued that all non-residential customers indirectly benefit from universal service
3 programs by keeping low income customers in their homes and allowing them to
4 contribute to Philadelphia’s economic activity. PGW contended ‘the portion of universal
5 service costs paid by non-residential customers is offset by the substantial positive
6 economic impact in Philadelphia on those non-residential customers created by PGW’s
7 universal service programs.’” (Final CAP Policy Statement, at note 144, page 96, citing
8 *Pa. PUC, et al. v. PGW* at 63).

9
10 While the PUC’s Revised CAP Policy Statement refers to “energy,” the Commission’s
11 decisions hold equally true for water bills as well.

12
13 **Q. IS THERE REASON FOR THE COMMISSION TO REACH THESE SAME**
14 **CONCLUSIONS FOR PWSA?**

15 A. Yes. First, the Commission found that poverty and its impacts are “not just residential
16 class problems” (Final CAP Policy Statement, at 96). Moreover, the Commission found
17 that low-income bill payment assistance is “a public good whose responsibility is not
18 merely other residential ratepayers.” (Id.) That is as true in Pittsburgh as it was for the
19 state as a whole. One reason that customers income-qualify for PWSA’s universal
20 service programs is because a substantial number of people throughout the PWSA service
21 territory are working at Poverty wages.¹¹ As the Economic Policy Institute (EPI) reports:

¹¹ Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates
Pittsburgh, PA, https://www.bls.gov/oes/current/oes_38300.htm (last accessed July 22, 2021).

1 [G]iven rising costs of necessities such as child care, housing, and health
2 care, many families’ ability to achieve a modest but adequate standard of
3 living requires resources earned on the job *and* assistance from government
4 programs. (internal citation omitted).
5

6 However, *for many workers in certain sectors, wages are so low that even*
7 *those who work full time must rely heavily on government assistance to make*
8 *ends meet.* This suggests that *low pay by many employers.* . . is placing
9 unwarranted demands on public resources.¹²
10

11 (emphasis added). As this research finds, the cause of the public expenditures –PWSA’s
12 BDP in the case at hand—is not the individual receiving the benefits. It is “caused,” at
13 least in part, by the economic entities providing the low wages which require a public
14 subsidy.
15

16 Second, the Commission found that several factors “contribute to households struggling
17 to afford utility service” and that, amongst those factors are “poor housing stock.” (Id., at
18 96). Pittsburgh’s recent housing needs assessment concluded that “Because rehabilitation
19 costs of many older units would exceed the value of the house itself, *housing quality is a*
20 *significant concern.* This is particularly true in Pittsburgh’s weaker housing markets,
21 where home values are particularly low.”¹³ Moreover, in Pittsburgh’s most recent
22 “Consolidated Plan” prepared by the City for submission to the U.S. Department of

¹² Cooper (2016). Balancing paychecks and public assistance: How higher wages would strengthen what government can do, Economic Policy Institute: Washington D.C. , available at <https://www.epi.org/publication/wages-and-transfers/> (last accessed June 8, 2021);

¹³ Mullin and Lonergan Associates (2016). Housing Needs Assessment, presented to the City of Pittsburgh Affordable Housing Task Force, at 5. available at https://apps.pittsburghpa.gov/dcp/Pittsburgh_Housing_Needs_Assessment.pdf (last accessed July 22, 2021).

1 Housing and Urban Development, the first priority stated was that “There is a need to
2 improve the quality of the housing stock in the City. . .”¹⁴
3
4 Third, the Commission found that “helping low-income families maintain utility service. .
5 .is also a benefit to the economic climate of a community.” (Id., at 96). Such programs
6 not only improve the competitiveness of business and industry in a community,¹⁵ it
7 supports future economic growth as well. The provision of a strong social safety-net so that
8 individuals and households do not face the deprivation of basic household necessities is a
9 strong and growing factor in businesses making locational decisions. These locational
10 factors are particularly important for high technology firms, which represent a particularly
11 strong future growth potential for the economy.¹⁶ Businesses focus on quality of life

¹⁴ City of Pittsburgh, Office of Management and Budget (June 30, 2020). FY 2020-2024 Five Year Consolidated Plan and FY 2020 Annual Action Plan, at 22, 147.

¹⁵ CFPB (August 2014). Financial wellness at work: A review of promising practices and policies. <https://www.consumerfinance.gov/data-research/research-reports/financial-wellness-at-work/> (last accessed June 9, 2021); *citing*, Garman et al., Financial Stress Among American Workers: Final report: 30 Million Workers in America –One in Four—Are Seriously Financially Distressed and Dissatisfied Causing Negative Impacts on Individuals, Families, and Employers, 17 2005); *citing also*, MetLife, Inc., 10th Annual Study of Employee Benefits Trends: Seeing Opportunity in Shifting Tides 51 (2012), available at [http://www.winonaagency.com/img/~www.winonaagency.com/10th annual met life study of benefits trends.pdf](http://www.winonaagency.com/img/~www.winonaagency.com/10th%20annual%20met%20life%20study%20of%20benefits%20trends.pdf) (last accessed June 9, 2021). (“22% of employees admit that they have taken unexpected time off in the past 12 months to deal with a financial issue and/or spent more time than they think they should at work on personal financial issues . . .”). 15% of Gen Y respondents, 10% of Gen X respondents, 5% of Younger Boomer respondents, and 1% of Older Boomer respondents admitted to the same; PricewaterhouseCoopers, LLC, Employee Financial Wellness Survey 10,11 (2014), available at http://www.pwc.com/en_US/us/private-company-services/publications/assets/pwc-employee-financial-wellness-survey-2014-results.pdf (last accessed June 9, 2021).

¹⁶ Gertler (2002). Competing on Creativity: Placing Ontario’s Cities in North American Context, report produced for the Ontario Ministry of Enterprise, Opportunity and Innovation and the Institute for Competitiveness and Prosperity (available at http://webarchive.urban.org/UploadedPDF/410889_Competing_on_Creativity.pdf, last accessed June 8, 2021). In this sense, affordable home energy can be viewed in the same way that health and education are viewed. “There are numerous empirical studies that demonstrate the links between education, health and competitiveness. In particular, both health and education are correlated with superior economic outcomes such as higher productivity, higher per capita incomes, and faster growth.” Burstein (2004). Developing the Business Case for Multiculturalism, at 8, Multiculturalism and Human Rights Branch, Department of Canadian Heritage (available at

1 considerations when making location decisions because they are relevant for attracting a
2 high quality workforce.¹⁷

3
4 Finally, the Commission found that “In approving PGW’s practice of recovering such
5 costs across all ratepayer classes, we noted that ‘all firm customers, including commercial
6 and industrial customers, benefit indirectly from PGW’s extensive low-income assistance
7 programs.’” Just as PGW’s universal service program helps keep people in their homes
8 and contribute the local economic activity, as the Commission favorably noted in the
9 2017 PGW rate case proceeding (Final CAP Policy Statement, at note 144, page 96,
10 citing *Pa. PUC, et al. v. PGW* at 63), the same is true in Pittsburgh. The Pittsburgh
11 Foundation has long studied the relationship between “housing insecurity” and the ability
12 of residents to participate in the local economy.¹⁸ Other research has documented not
13 only this conclusion, but also how keeping people in affordable housing is necessary for
14 employers to be able to recruit attract and retain their workforce.¹⁹ When people lose

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.132.7196&rep=rep1&type=pdf>, last accessed June 8, 2021).

¹⁷ Taylor, *et al.* (2006). A Cost-Benefit Analysis of Universally-Accessible Pre-Kindergarten Education in Texas, Bush School of Government and Public Service, Texas A&M University: College Station (TX) (available at <https://oaktrust.library.tamu.edu/handle/1969.1/97006>, last accessed June 8, 2021).

¹⁸ See, e.g., Pittsburgh Foundation. Deconstructing the Housing Dilemma. available at <https://pittsburghfoundation.org/deconstructing-housing-dilemma> (last accessed July 22, 2021).

¹⁹ Shroyer and Gaitdn (September 11, 2019). Four Reasons Why Employers Should Care About Housing, Urban Institute: Washington D.C. <https://housingmatters.urban.org/articles/four-reasons-why-employers-should-care-about-housing> (last accessed July 22, 2021).

1 their housing, as PGW has noted happens due to unaffordable utility bills, the financial
2 health of cities and their economics unquestionably suffers.²⁰

3

4 **Q. DOES YOUR DISCUSSION ABOVE APPLY TO MORE THAN PWSA WATER**
5 **BILLS?**

6 A. Yes. My discussion above is intended to apply equally to Mr. Kalcic’s discussion of the
7 allocation of universal service costs for water, for wastewater, and for stormwater.

8

9 **Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?**

10 A. Yes, it does.

²⁰ Chernick, Newman and Reschovsky (July 21, 2021). What’s the link between housing markets and the financial health of cities, available at <https://housingmatters.urban.org/research-summary/whats-link-between-housing-markets-and-financial-health-cities>, (last accessed July 22, 2021).

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Rebuttal Testimony, OCA Statement 4-R, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: July 29, 2021
*313857

Signature:



Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Pennsylvania Public Utility Commission) Docket Nos. R-2021-3024773 (Water)
v.) R-2021-3024774 (Wastewater)
Pittsburgh Water and Sewer Authority) R-2021-3024779 (Stormwater)

SURREBUTTAL TESTIMONY OF

DANTE MUGRACE

**ON BEHALF OF THE
COMMONWEALTH OF PENNSYLVANIA
OFFICE OF CONSUMER ADVOCATE**

August 6, 2021

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1 **I. PURPOSE OF SURREBUTTAL TESTIMONY**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 **A.** My name is Dante Mugrace. My business address is 22 Brooks Avenue,
4 Gaithersburg, MD 20877.

5 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS DOCKET?**

6 **A.** Yes. I submitted Direct Testimony on July 8, 2021, which was marked as
7 OCA Statement 1. My qualifications and experience are attached to my
8 Direct Testimony.

9 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

10 **A.** The purpose of my Surrebuttal Testimony is to address the Rebuttal
11 Testimony of Authority witnesses Barca (PWSA St. No. 2-R). To the extent
12 that I do not respond to or address a particular issue or argument, I defer to
13 my Direct Testimony on those issues.

14 **Q. DO YOU HAVE ANY ADJUSTMENTS TO YOUR DIRECT TESTIMONY?**

15 **A.** No, I do not.

16 **Q. DID MR. BARCA UPDATE THE AUTHORITY'S COST OF SERVICE
17 MODEL REGARDING THE FPPTY REVENUE REQUIREMENT
18 INCREASE?**

19 **A.** Yes. On page 4 of Mr. Barca's rebuttal testimony (PWSA St. No. 2-R), the
20 updated revenue requirement is \$232,770,841 compared to the
21 \$232,690,043 that was originally filed. (PWSA Statement No. 2-R at 4).

22
23 **II. REVENUE REQUIREMENT ISSUES**

24 **A. Direct Operating Expenses**

25 **Q. WHAT DID AUTHORITY WITNESS MR. BARCA STATE REGARDING YOUR
26 ADJUSTMENTS TO DIRECT OPERATING EXPENSES?**

1 **A.** Mr. Barca disagrees with my adjustments to the Authority’s operating and
2 maintenance (O&M) expenses on the basis that application of “business as usual”
3 ratemaking methodologies is unreasonable and incorrect in this case. (PWSA St.
4 No.2-R at 6). Mr. Barca stated that I claimed the Authority’s level of expenses
5 aren’t reasonable. Mr. Barca noted that my review of three years in which full year
6 actual data is available were less than the amounts authorized in the Authority’s
7 operating budget. (PWSA Statement No. 2-R at 6). Mr. Barca stated that given
8 the Authority’s inability to fill all of the positions for which it had budgeted, the
9 Authority should adjust downward the level of expenditures and vacancies that it
10 had experienced in the past. (PWSA Statement No. 2-R at 6). Mr. Barca stated
11 that using expense and hiring levels for the last three years will skew the results.
12 Mr. Barca stated that because of the pandemic, the Authority experienced
13 operational delays across the business and found it impossible to hire for all
14 budgeted positions. Mr. Barca disagrees with my utilization of calendar year 2020
15 in calculating average or normalized amounts. (PWSA Statement No. 2-R at 6-7).
16 Further, Mr. Barca stated that 2018 and 2019 are not valid years by which to judge
17 the reasonableness of the Authority’s budgeting because, as Mr. Barca notes, the
18 Authority had just ramped up construction expenditures and operations to comply
19 with regulatory requirements. (PWSA Statement No. 2-R at 7).

20 **Q. WHAT IS YOUR RESPONSE?**

21 **A.** Setting rates under a cash flow method is not unique. Applying the same basic
22 ratemaking principles of known and measurable, prudent, and used and useful is
23 still required. In reviewing projected and prospective costs, one must review
24 historic costs to determine whether the Authority’s projections are reasonable in
25 nature and prudent. Mr. Barca stated that 2020 was not a typical year because of
26 the COVID-19 pandemic. However, in Mr. Barca’s direct testimony (PWSA
27 Statement No. 1 at 31), he stated that COVID-19 did not cause the Authority to
28 change its infrastructure projects in 2020. The Authority stated, in response to
29 OCA-II-12, that it was well-positioned to significantly invest in the various
30 engineering and construction projects necessary to modernize and update the

1 water supply, water distribution and wastewater conveyance infrastructure.
2 Further, the Authority stated that FY 2020 was a record level of capital investments
3 amounting to over \$127 million. The Authority received a revenue requirement
4 increase in 2020 in the amount of \$19 million.¹ The Authority received a revenue
5 requirement increase in 2018 in the amount of \$21 million.² Given that the
6 Authority was “well-positioned,” it is my opinion that the year 2020 was a typical
7 year, as the Authority navigated its way to make over \$127 million in capital
8 investments. This is the third base rate case proceeding the Authority has filed
9 with the Commission since 2018. The Authority received revenue requirement
10 increases in the past two years, and it is likely that the Authority will receive a
11 revenue requirement increase in this instant proceeding. Mr. Barca’s assertion
12 that 2018 and 2019 are not valid years is not supported as the Authority should
13 have shown a ramping up of operating expenses and employee hiring. I believe
14 past occurrence of costs is a sound and reliable indication of what costs will be
15 prospectively. Had the Authority shown a ramping up of expenditures this would
16 have been reflected in the Authority’s COSS Model and its direct operating
17 expenses.

18 **Q. WHAT IS YOUR RESPONSE WITH RESPECT TO MR. BARCA’S ASSERTIONS**
19 **THAT THE AUTHORITY WAS HAVING DIFFICULTY FINDING AND**
20 **ATTRACTING QUALIFIED PERSONNEL TO FILL THE LARGE NUMBER OF**
21 **NEW POSITIONS?**

22 **A.** The Authority should have been hiring personnel all the while. It is apparent that
23 the Authority had been understaffed in the past given the vacancy rates shown in
24 response to OCA-II-22. Mr. Barca stated that the Authority has learned from its
25 experience in the initial “ramp up” years of 2018 and 2019 and has incorporated a
26 more realistic understanding of what can and cannot be accomplished with its 2021
27 and 2022 Budgets. (PWSA Statement No. 2-R at 9). However, the Authority
28 received \$40 million of additional revenue requirement for 2020, and despite a

¹ Commission Decision dated October 29, 2020 in Docket No. R-2020-3017951 and R-2020-3017970.

² Commission Decision dated January 17, 2019 in Docket No. R-2018-3002645 and R-2018-3002647.

1 temporary hiring freeze during a one month period of 2020, it is not readily
2 understandable why there was no ensuing increase in staff. If the Authority was
3 in a learning curve, then the variations and fluctuations of its 2018-2020
4 expenditure levels reflect this learning curve.

5 **Q. HAS THE AUTHORITY PROVIDED ADEQUATE EVIDENCE REGARDING THE**
6 **REASONABLE AND APPROPRIATE EXPENSES THAT SHOULD BE USED TO**
7 **SET FORWARD LOOKING RATES?**

8 **A.** Not really. In certain data responses, the Authority indicated that the increases
9 related to certain expenses and expenditure categories were anticipated or
10 estimated increases (I&E RE-3-D through 21-D). The Authority has not identified
11 specific increases in costs. The Authority utilized inflation related cost adjustments
12 to support the need for certain increased expenses (OCA-II-31). This is an
13 unsupported approach to setting rates. Setting rates for service should be
14 supported by costs that are known, measurable and prudent in nature. In the
15 Authority's COSS Model 2021, PWSA presented a category of expenses broken
16 down by Salary and Benefits, Inventory, Operating Expenses and General and
17 Administrative Expenses, for the years 2018 through the FPFTY period 2022.
18 However, PWSA provided no detail regarding the actual and projected balances
19 on which the Authority has based its claim for its proposed revenue requirement
20 increase. I reviewed the Company's PWSA COSS 2021 Rate Model tabs for each
21 of the Authority's Operating Expense categories, which amounts to almost 4,000
22 line items of costs categories, reviewed prior historical balances, and used
23 judgment and my ratemaking experience to evaluate whether the cost adjustments
24 from the FTY 2021 budget balance to the FPFTY 2022 budget balance were
25 reasonable adjustments, reliable in nature, and prudent. In these various tabs to
26 the PWSA COSS 2021 Rate Model, the Authority has not provided any further
27 information regarding the absence of prior costs, the fluctuations of certain costs
28 from year to year, and the need to ramp up these costs in the FPFTY period.
29 Review, examination and analysis is needed to support its claims, but the Authority
30 has not provided that support.

1 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR USE OF NORMALIZING**
2 **DATA AND THE USE OF HISTORICAL DATA?**

3 **A.** Mr. Barca opined that this approach is reasonable when it is applied to an investor-
4 owned utility that is regulated on a rate of return/rate base basis, but for several
5 reasons, it is not reasonable for PWSA. (PWSA Statement No. 2-R at 11). Mr.
6 Barca stated that the Authority is in a ramp up mode and the use of historical data
7 does not recognize the Authority's efforts to repair the neglect and inadequacies
8 of the past. According to Mr. Barca, if PWSA is held to historic spending for
9 ratemaking purposes, it will be required to reduce its level of expenditures to those
10 levels and will not be able to accomplish projects and initiatives to which it has
11 agreed or has been ordered to do. (PWSA Statement No. 2-R at 11).

12 **Q. WHAT IS YOUR RESPONSE?**

13 **A.** The Authority has the opportunity to recover all of its prudent and known costs to
14 provide safe and reliable utility service. It is not guaranteed to recover all of its
15 costs based on a capital plan or budget for ratemaking purposes. In PWSA
16 Statement No. 5 at 3, Authority witness Mr. King stated that in the past 30 years,
17 there was little or no investment in the water, sewer and wastewater system. In
18 his opinion, it will take several rate case proceedings to ramp up to what the
19 Authority should have been accomplishing in the past. Even during a ramp up
20 period, it remains reasonable and appropriate to use normalization and to review
21 historical data in the development of rates going forward. In this regard, there is
22 no difference whether Rate Base / Rate of Return or Cash Flow Methodology is
23 being applied. Using either Methodology, it is not appropriate for PWSA to recover
24 all prior deferred maintenance cost in the instant proceeding. This approach
25 creates an unnecessary burden on ratepayers. The Commission should also take
26 into consideration the ratemaking principle of gradualism in permitting PWSA to
27 recover increased costs over a number of years.

28

1 **1. Financial Metrics**

2 **Q. DO YOU HAVE ANY ADJUSTMENTS WITH RESPECT TO MR. BARCA'S**
3 **COMMENT ON FINANCIAL METRICS – DAYS OF CASH ON HAND?**

4 **A.** Yes. Mr. Barca indicated that my Days of Cash on hand was 134.07 days as
5 shown on my Schedule DM-20. After a review, I found an error. My corrected
6 Days of Cash on hand is now 211.86, and my year end cash is \$60,031,149.

7
8 **2. Expenses in the FPFTY**

9 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR USE OF A THREE-YEAR**
10 **AVERAGE OR NORMALIZATION METHODOLOGY?**

11 **A.** Mr. Barca stated that the use of these methods placed extensive reliance on past
12 results without any consideration of future needs. He claimed that this method
13 does not account for future inflation and market conditions. Mr. Barca stated that
14 normalization is contrary to the Legislative's express indication that the FPFTY
15 may include projections of costs and expenses. (PWSA Statement No. 2-R at 18).
16 Mr. Barca believes that my recommendation is to reduce projected future
17 expenses to past spending levels which is at odds with information presented by
18 the Authority regarding the expenses that should be used in setting forward-looking
19 rates and is inconsistent with the fully projected future test year concept. (PWSA
20 Statement No. 2-R at 18-19). Mr. Barca stated that 2020 was a unique year due to
21 the COVID-19 pandemic and the Authority was forced to implement O&M budget
22 restrictions to off-set revenue and cash declines and did not meet its 2020 O&M
23 budget amounts due to management decisions. (PWSA Statement No. 2-R at 19).
24 Mr. Barca stated that in 2021 the Authority was able to ramp up operations to meet
25 its 2021 O&M Budget amounts.

26 **Q. WHAT IS YOUR RESPONSE?**

27 **A.** The Authority stated that FY 2020 represented a period of record levels of capital
28 investments, in which the Authority invested over \$127 million in its system (OCA-

1 II-12). This appears contrary to what Mr. Barca stated regarding the Authority
2 being forced to implement budget restrictions to offset revenue and cash decline.
3 In response to OCA-II-25, the Authority was able to continue making infrastructure
4 investments despite construction delays. The use of normalizing and averaging
5 certain expense adjustments is an appropriate method to set rates prospectively,
6 including the HY 2020 period. Past spending trends are a good indicator of future
7 needs and requirements. Abnormalities, fluctuations and variations are among the
8 reasons to normalize costs because it smooths out costs and provides for a
9 consistent and steady recovery. In periods where the Authority has not booked
10 costs nor documented any prior expense, it is difficult to measure or assess what
11 level should be considered reasonable. Costs must be incurred continuously and
12 be recurring going forward, and the Authority has not provided any specific reason
13 why certain accounts did not have costs in prior periods but will have costs in future
14 periods.

15 16 **3. Inflation Factors**

17 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR REMOVAL OF**
18 **INFLATION FACTORS?**

19 **A.** Mr. Barca stated that my removal of inflation factors is inconsistent with the FPFTY
20 concept as a FPFTY reflects a projection of the costs that an entity is going to
21 experience in a future period and, therefore, cannot be known and measurable.
22 (PWSA Statement No. 2-R at 22).

23 **Q. WHAT IS YOUR RESPONSE?**

24 **A.** In setting rates for utility service, costs should be prudently incurred, and known
25 and measurable, regardless of the test period utilized. In my opinion, I believe that
26 inflationary type expense adjustments do not provide a true picture of cost
27 increases (or decreases) because these types of general adjustments apply to a
28 general basket of goods and services and may or may not be accurate adjustments
29 for the costs of the specific goods and services incurred by the Authority. While

1 these types of cost adjustments are appropriate for economic data, they should
2 not be used to set rates under a ratemaking methodology, for ratemaking
3 purposes. Inflationary cost adjustments cannot be precisely determined because
4 there is no way to pinpoint a particular cost and determine whether that particular
5 cost has been affected by the use of a Consumer Price Index (CPI) adjustment.
6 The Authority has not provided any reason to adjust its O&M expenses by \$2.789
7 million based upon a blanket inflationary adjustment. My response is also in
8 response to Mr. Barca's statement regarding Chemical Expense adjustments
9 (PWSA Statement No. 2-R at 30), where he stated that I ignored the cost of doing
10 business and market conditions. The Authority has not provided any further
11 information related to cost increases beyond its response to OCA-II-31. My
12 recommendations remain the same.

13 14 **4. Rate Case Expenses**

15 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENT TO THE**
16 **AUTHORITY'S RATE CASE EXPENSES?**

17 **A.** Mr. Barca stated that my normalization of rate case expenses is not appropriate
18 since the Authority is a cash based utility, and that the Authority must have
19 sufficient funds to pay for all expenses incurred within the year. (PWSA Statement
20 No. 2-R at 25).

21 **Q. WHAT IS YOUR RESPONSE?**

22 **A.** Under PAPUC practice, it is appropriate to normalize rate case expenses, whether
23 the utility operates under a Rate Base/Rate of Return methodology or under a
24 Cash Flow Methodology. It is also appropriate to normalize these types of costs
25 over a period of time and not solely within a current period, as these costs benefits
26 future periods. My recommendations remain the same.

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5. Payroll and Employee Benefits

Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENTS TO PAYROLL AND EMPLOYEE BENEFITS?

A. Mr. Barca did not agree with my adjustments to Payroll and Employee Benefits because the PWSA had implemented a temporary hiring freeze in March of 2020 due to COVID-19. (PWSA Statement No. 2-R at 27). He claims that the use of a three-year historic average artificially lowers the payroll and employee expenses and is inconsistent with how the Authority is operating the utility. (PWA Statement No. 2-R at 27). Mr. Barca stated that between January 1, 2021 and June 30, 2021, payroll and employee benefits have increased by a combined amount of \$2,102,441 or 14.61% compared to the same period in the prior year, which has increased employee count by 19 to 366. Mr. Barca stated that this will accelerate through the remainder of 2021 and into future years. (PWSA Statement No. 2-R at 27).

Q. WHAT IS YOUR RESPONSE?

A. If Mr. Barca’s statement is correct in that the Authority has increased employees between January 1, 2021 and June 30, 2021, it should update its response to OCA-II-22 which shows the level of employees for the years 2019 through 2021. Given the prior levels of vacancy rates due to the Authority’s inability to maintain and attract qualified personnel to fill new positions, it is appropriate to normalize or average out the level of employees from year to year, and historic levels of vacancy rates provide a trend of future employment levels. As I stated previously in my testimony, the Authority received \$40 million of revenue requirement increases in its most recent rate proceedings, and this is third rate proceeding the Authority has filed since 2018, when it became regulated by the Commission. The Authority has the resources to enhance and improve its employee levels. Given this new information, the Authority should update its level of employees hired to date in its

1 response to OCA-II-22. If the updated response support an increased employee
2 count for 2021, I will adjust my recommendation accordingly.

3 **6. Equipment Expenses**

4 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENT TO**
5 **EQUIPMENT EXPENSES?**

6 **A.** Mr. Barca stated that he did not agree with my use of normalization since actual
7 expenses in 2020 were lower than a typical year due to COVID-19, which artificially
8 lowered equipment expense reductions. (PWSA Statement No. 2-R at 33). He
9 further stated that I was incorrect in stating that the Authority did not purchase any
10 vehicles in 2018 and 2019 and very few in 2020. (PWSA Statement No. 2-R at 34).

11 **Q. WHAT IS YOUR RESPONSE?**

12 **A.** In reviewing prior years' costs that are shown on the Authority's COSS Model 2021
13 along with the various tabs that reflect prior years' expenditures, I relied on this
14 documentation to determine that the Authority has not purchased vehicles in 2018
15 and 2019. The table depicted on Mr. Barca's rebuttal testimony page 34 is new
16 information for which I was not aware. If the Authority shows where these costs
17 are accounted for in the Authority's COSS Model 2021, I will adjust my
18 recommendation accordingly. With respect to the other expenses, the Authority
19 has accounted for these costs in its COSS Model 2021, which show that small
20 dollars were expended in prior years (prior to COVID-19). In these expense
21 categories, the Authority stated that increases were due to estimated or anticipated
22 costs but provided no further information. Without more definitive information it is
23 difficult to assess further costs adjustments. Thus, at this point, my
24 recommendations remain the same.

25 26 **7. Operating Contracts**

27 **Q. WHAT HAS MR. BARCA STATED REGARDING YOUR ADJUSTMENTS TO**
28 **OPERATING CONTRACTS?**

1 **A.** Mr. Barca stated that I did not provide for increases in landscaping costs and the
2 inflationary increases for Sewer Operations. (PWSA Statement No. 2-R at 36).

3 **Q. WHAT IS YOUR RESPONSE?**

4 **A.** As I previously testified, the Authority has expended little dollars (prior to COVID-
5 19). Also, as I stated previously, the inclusion of inflationary cost adjustments are
6 not a known and measurable adjustment and, therefore, should not be part of
7 setting rates. The Company had the opportunity to expend more dollars in 2018
8 and 2019 which would have adjusted these expenses upward and affected cost
9 adjustments in 2021 and during the FPFTY period. My recommendation remains
10 the same.

11

12 **8. Debris Removal**

13 **Q. WHAT DID MR. BARCA STATE WITH REGARDS TO YOUR ADJUSTMENT TO**
14 **DEBRIS REMOVAL?**

15 **A.** Mr. Barca opposed my increase to the Authority's Debris Removal solely on the
16 basis of my use of normalization. He stated that determining expenditure levels
17 by looking exclusively to what the Authority has expended in the past is not valid
18 for PWSA as it is modernizing and expanding its operations. (PWSA Statement
19 No. 2-R at 37).

20 **Q. WHAT IS YOUR RESPONSE?**

21 **A.** My response is in response to this issue and all other instances where the Authority
22 argues that historical spending levels should not be used. The Authority should
23 have been modernizing and expanding its operations continuously and not just
24 during the beginning period in which the Authority became regulated by the
25 Commission. The Authority stated in response to OCA-II-54 that pre-2018 it was
26 completing minimal replacement and maintenance of its water, wastewater and
27 stormwater systems. The poor financial performance was a result of the Authority
28 ramping up its operations and capital programs starting in 2018 in order to deal

1 with the deferred maintenance while it proposed to increase rates to support the
2 work. It is my opinion that modernizing and expanding operations is not a one-
3 time adjustment but rather a multiple step (and gradual rate increase) approach to
4 achieve the level of expenditures to provide safe, adequate and reliable service.
5

6 **9. Repairs and Maintenance/Concrete Repairs/Machinery Repairs**

7 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENTS TO THE**
8 **VARIOUS REPAIRS AND MAINTENANCE, CONCRETE AND MACHINERY**
9 **ADJUSTMENTS?**

10 **A.** Mr. Barca stated that my use of averaging expenses is not valid, in that FY 2020
11 does not represent a typical year. Mr. Barca stated that the Authority had to make
12 substantial cuts to concrete repairs in 2021 due to the significant revenue reduction
13 in the last base rate case. (PWSA Statement No. 2-R at 38). Mr. Barca stated that
14 normalizing costs is a backward looking approach, and the Authority will increase
15 operations resulting in claims being higher than in prior years since more work is
16 being completed. (PWSA Statement No. 2-R at 39).

17 **Q. WHAT IS YOUR RESPONSE?**

18 **A.** Although FY2020 was impacted by the pandemic, as I testified to previously, and
19 in response to OCA-II-12, the Authority was able to work through the pandemic
20 and invest significant dollars in the water and wastewater systems. This
21 demonstrates that FY 2020 was not as atypical for PWSA as Mr. Barca claims.
22 The use of my normalization to include FY 2020 is therefore, totally appropriate.
23

24 **10. Lease and Rent**

25 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENT TO THE**
26 **LEASE AND RENT CLAIMS?**

1 **A.** Mr. Barca stated that normalizing these expenses is not appropriate as the
2 Authority pays for a fixed amount annually per the lease agreement. He stated
3 that the Authority has included funds in the FPFTY for another facility to
4 consolidate field staff and the central warehouse. (PWSA Statement No. 2-R at
5 40).

6 **Q. WHAT IS YOUR RESPONSE?**

7 **A.** The Authority stated that the need for additional office space was for anticipated
8 space needed for its operations but provided no further information. Mr. Barca
9 now stated that the need is for another facility to consolidate field staff and the
10 central warehouse. As far as I am aware, the Authority has not provided any other
11 documentation as to the location, agreements, or in-service dates regarding the
12 additional facilities, nor specifically identified the expense adjustments for the
13 additional facilities. My recommendation remains the same.

14

15 **11. Professional Services**

16 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENT TO**
17 **PROFESSIONAL SERVICES?**

18 **A.** Mr. Barca did not agree with my three-year average adjustment or normalization
19 of these costs. Mr. Barca stated that I did not request the specific information to
20 justify the costs. (PWSA Statement No. 2-R at 42-43).

21 **Q. WHAT IS YOUR RESPONSE?**

22 **A.** In response to IE-RE-17-D, the Authority was asked to provide, in detail, the
23 increases and decreases in several cost categories and supporting documentation
24 for the expense projections. The responses provided stated that these cost
25 adjustments were for anticipated increases. The Authority was asked for specific
26 information, but it did not provide it. The Company has the burden of proof and to
27 that end, should respond to discovery in a manner that supports its revenue
28 requirement increase. I evaluated my adjustment based upon what I received.

1 The Authority has not provided any other support for its proposed increase. My
2 recommendations remain the same.

3

4 **12. Advertising**

5 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENT TO**
6 **ADVERTISING?**

7 **A.** Mr. Barca stated that my adjustment was not supported and that I failed to request
8 additional information if I wanted a more detailed justification. (PWSA Statement
9 No. 2-R at 43).

10 **Q. WHAT IS YOUR RESPONSE?**

11 **A.** In response to IE-RE-17-D, the Authority was asked to provide, in detail, the
12 adjustments to Advertising Expense. The response given was due to anticipated
13 costs for community outreach and for current and future capital projects. No further
14 information was given. The Company has the burden of proof to respond to
15 discovery in a manner which supports its provided increases and adjustments. My
16 recommendation remains the same.

17

18 **13. Consultants**

19 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENTS TO**
20 **CONSULTANTS?**

21 **A.** Mr. Barca stated that he did not agree with my normalization method since FY
22 2020 does not represent a typical year and that normalization is an impossible
23 business practice for the Authority. (PWSA Statement No. 2-R at 43). He also
24 stated that the claims for Consultants are justified and include very important
25 initiatives such as the EPA wet weather consultant and water quality compliance.
26 Mr. Barca stated that I failed to request the additional information that I felt was

1 necessary to support these costs from my perspective. (PWSA Statement No. 2-
2 R at 43-44).

3 **Q. WHAT IS YOUR RESPONSE?**

4 **A.** The Authority was asked in response to IE-RE-17-D to provide detail and the basis
5 supporting the Authority's adjustments to Consultants. The response included that
6 these costs were anticipated for environmental compliance. No other information
7 was provided. The Authority has the burden of proof to support its requested
8 revenue requirement increase. The Bureau of I&E requested the information in
9 detail. I am not sure what additional information the Authority would have provided
10 if asked for further support. Normalizing these costs provides for a consistent and
11 reliable balance based upon actual historical expenditures, absent more detailed
12 information and supporting documentation for which the Authority has not
13 provided. My recommendation remains the same.

14

15 **14. Contingencies**

16 **Q. WHAT HAS MR. BARCA STATED WITH RESPECT TO YOUR REMOVAL OF**
17 **CONTINGENCIES?**

18 **A.** Mr. Barca stated my removal of Contingency costs would hinder the benefits to
19 ratepayers to either increase efficiencies or enhance the Authority's level of
20 service. (PWSA Statement No. 2-R at 44).

21 **Q. WHAT IS YOUR RESPONSE?**

22 **A.** Contingencies should be treated as Inflation Factors, as these cost adjustments
23 are uncertain and not known and measurable. I do not know what Mr. Barca
24 means when he compares Contingencies with increasing efficiencies or enhancing
25 the Authority's level of service. I do not see a nexus between Contingencies and
26 the Authority's enhancement of services. My recommendations remain the same.

27

1 **15. Consultant Engineer**

2 **Q. WHAT DID MR. BARCA STATE WITH RESPECT TO YOUR ADJUSTMENT TO**
3 **CONSULTANT ENGINEER EXPENSE?**

4 **A.** Mr. Barca did not agree with my normalization adjustment which reduced this cost.
5 Mr. Barca stated that these costs are required per the Authority's amended and
6 restated bond indenture and PWSA must have sufficient funds to pay for this report
7 or it will be in non-compliance with its bond indenture requirements. (PWSA
8 Statement No. 2-R at 44). Mr. Barca stated that these costs were previously
9 accounted for under the Engineering and Construction department (930). (PWSA
10 Statement No. 2-R at 44).

11 **Q. WHAT IS YOUR RESPONSE?**

12 **A.** Without prior cost balances there is no justifiable way to set future costs and to
13 determine if such adjustments are reasonable. The Authority spent no dollars in
14 Account 9332 in 2018-2019 and only started expending these costs in 2020 and
15 in the FPFTY 2022. With respect to the Authority accounting for these costs under
16 the Engineering and Construction department, I did not adjust any operating and
17 maintenance or general and administrative expenses; I accepted these balances,
18 with the exception of my adjustments to Salary and Employee Benefits. The
19 Authority has not provided any further detail in discovery. If the Authority provides
20 information showing the amount related to Consulting Engineer costs that was
21 claimed under Engineering and Construction in 2018 and 2019 and removed in
22 2020 (and reclassified under Consulting Engineer), I will review and adjust my
23 recommendation, accordingly. Absent such, it is appropriate to normalize these
24 expenses. My recommendation remains the same.

25
26 **16. Non-Cap Miscellaneous**

27 **Q. WHAT HAS MR. BARCA STATED WITH RESPECT TO YOUR ADJUSTMENT**
28 **TO NON-CAP MISCELLANEOUS COSTS?**

1 **A.** Mr. Barca stated that my normalization method is not feasible for the Authority and
2 sufficient funding must be obtained to pay for the full amount of costs in the period
3 they are incurred or else the Authority would have no means to pay for costs at all.
4 (PWSA Statement No. 2-R at 45).

5 **Q. WHAT IS YOUR RESPONSE?**

6 **A.** These costs were minimal in prior years. The Authority's proposed balance for
7 recovery of \$1,410,000 was not supported (IE-RE-17-D), and absent any detail,
8 normalizing these costs is appropriate. The Authority stated that these increased
9 costs were anticipated, but no further breakdown of this adjusted increase was
10 provided. In my opinion, the Authority is basing the full request of \$1,410,000 on
11 its position that 100% of the requested revenue requirement should be awarded.
12 As I stated previously, the Authority has the opportunity to recover all known and
13 prudent costs it needs to provide safe and reliable service; it is not guaranteed full
14 recovery of its projected expenses, particularly where those projections are not
15 supported by recent historic spending. My recommendation remains the same.

16

17 **17. Fees**

18 **Q. WHAT DID MR. BARCA STATE REGARDING YOUR ADJUSTMENT TO FEES?**

19 **A.** Mr. Barca stated that he does not agree with my normalization methodology and
20 that this approach is not feasible for the Authority. (PWSA Statement No. 2-R at
21 47). He stated that these types of fees are a legitimate expense that allows the
22 Authority to collaborate and learn from other utilities and professionals. He further
23 stated that I understate the number of employees that PWSA currently employs
24 which inappropriately reduces membership costs. (PWSA Statement No. 2-R at
25 47).

26 **Q. WHAT IS YOUR RESPONSE?**

27 **A.** I disagree with Mr. Barca's assertion. I believe that my recommended adjustment
28 to employee levels is appropriate, and therefore, a reduction in Membership fees

1 is also appropriate across all departments. The Authority spent little dollars in prior
2 years. It is my opinion that the Authority was not able to increase these costs due
3 to budget constraints. I am willing to reconsider my recommendation if the
4 Authority provides updated information related to this expense category.

6 18. Postage

7 **Q. WHAT HAS MR. BARCA STATED WITH RESPECT TO YOUR ADJUSTMENT**
8 **TO POSTAGE?**

9 **A.** Mr. Barca stated that he does not agree with my adjustment, and the increase in
10 postage is justified since the Authority will be required to send out additional billings
11 to stormwater only customers once the fee is implemented.

12 **Q. WHAT IS YOUR RESPONSE?**

13 **A.** If the Authority provides a schedule showing the number of additional billings
14 related to stormwater only customers, and other related postage expense which
15 supports its request, I would be willing to make an adjustment to Postage.

17 19. Supplies

18 **Q. WHAT HAS MR. BARCA STATED REGARDING YOUR ADJUSTMENT TO**
19 **SUPPLIES?**

20 **A.** Mr. Barca did not agree with my adjustments by the use of a three-year average.
21 Mr. Barca stated that part of the transition away from a consultant who provided
22 lab assistance and equipment to the Authority included buying the necessary lab
23 equipment to fully bring the lab operations in house. (PWSA Statement No. 3-R
24 at 48). According to Mr. Barca, this is the reason that little dollars were spent in
25 prior years. He stated that outfitting the lab in house will be cheaper than paying a
26 lab consultant for their services. (PWSA Statement No. 2-R at 48-49). Mr. Barca
27 stated that he does not agree with my adjustments related to ground and

1 maintenance in that the Authority provided adequate support for its expense.
2 (PWSA Statement No. 2-R at 49).

3 **Q. WHAT IS YOUR RESPONSE?**

4 **A.** With respect to lab expenses, I am willing to re-adjust my calculations if the
5 Authority provides a schedule that shows the detailed breakdown of its proposed
6 lab expense, comparing this proposal to what the Authority currently spends with
7 respect to its outside lab consultant. With respect to grounds and maintenance, I
8 am inclined to maintain my adjustments which reduces the Authority's proposal by
9 \$12,710. In reviewing the response to IE-RE-18-D, the Authority did not
10 specifically explain the need for the increase to grounds and maintenance. The
11 Authority stated that these cost increases were related to anticipated increases,
12 without further explanation. At this time, my recommendation remains the same
13 for this expense category.

14

15 **20. City Services**

16 **Q. WHAT HAS MR. BARCA STATED WITH RESPECT TO YOUR ADJUSTMENT**
17 **TO CITY SERVICES?**

18 **A.** Mr. Barca stated that he did not agree with my adjustment, in that the Authority is
19 required by the Cooperation Agreement to make payments to the City for these
20 costs in the year incurred. Normalizing these costs would not provide the funds
21 sufficient to make these payments, which would result in non-compliance with the
22 Cooperation Agreement as well as Act 2000-70. (PWSA Statement No. 2-R at
23 49).

24 **Q. WHAT IS YOUR RESPONSE?**

25 **A.** The cost adjustments for which I am recommending normalization relate to
26 Pension, Vehicle Repairs and Fleet Management Charges. These costs do
27 fluctuate from year to year, especially Pension which has a lot of variability
28 depending on various factors such as employee level, age, return on investments

1 and funding levels. It is, therefore, appropriate to normalize these costs based
2 upon historic spending levels. As shown in response to OCA-II-18, Pension costs
3 were as low as \$879,849 in 2019, to a high of \$5,631,980 in 2020. In 2021 the
4 Pension costs were shown as \$2,678,000. Given this variability it is appropriate
5 to normalize these costs going forward. The same holds true for Vehicle Repairs,
6 Fleet Management and Fuel. It is not usual for these types of costs to fluctuate
7 from year to year. My recommendation remains the same.

8
9 **21. COVID-19**

10 **Q. WHAT HAS MR. BARCA STATED WITH RESPECT TO THE AUTHORITY'S**
11 **POSITION ON THE COVID-19 ISSUE?**

12 **A.** Mr. Barca stated that consistent with the Commission's Secretarial letter of May
13 13, 2020 and its related Orders on COVID-19, the Authority continues to defer
14 incremental COVID-19 related expenses into a regulatory asset since the start of
15 the pandemic through a point in the future. (PWSA Statement No. 2-R at 56). Mr.
16 Barca's interpretation of the July 15 Order indicates that this recovery is preserved
17 until a future proceeding and is an indefinite deferral so that the Authority can claim
18 this recovery at some unspecified time in the future. (PWSA Statement No. 2-R at
19 56-57).

20 **Q. WHAT IS YOUR RESPONSE?**

21 **A.** My recommendation remains the same. The May 13, 2020 Secretarial Letter and
22 related COVID-19 decisions thus far indicate that a utility must seek recovery of
23 deferred COVID-19 expenses no later than in its next base rate proceeding. The
24 Authority is not seeking recovery of COVID-19 pandemic costs in this proceeding.
25 At a minimum, PWSA should have made a claim through a date certain in this case
26 and then, based on its claim that it continues to accrue costs, requested approval
27 to continue to put them in the deferred asset. There is nothing in the Secretarial
28 Letter which permits a utility to defer costs indefinitely. I will defer to counsel from
29 the OCA as to whether the Commission directive and interpretation of such permits

1 recovery of these costs indefinitely. In the next rate filing, however, I recommend
2 that if PWSA seeks to recover of deferred costs, it make a claim for costs through
3 at least the end of this case's FPFTY. In that filing, PWSA should also identify and
4 reflect any cost savings as credits (i.e. offsets) to the corresponding categories of
5 deferred costs in that case.

6 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

7 **A.** Yes, it does. I reserve the right to supplement this testimony either in writing or
8 orally if additional relevant information is received.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Dante Mugrace, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 1SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314843

Signature: *Dante Mugrace*
Dante Mugrace

Consultant Address: PCMG and Associates
90 Moonlight Court
Toms River, NJ 08753

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
	:	Docket Nos.
v.	:	R-2021-3024773 (Water)
	:	R-2021-3024774 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	
	:	

SURREBUTTAL TESTIMONY OF
DR. DAVID S. HABR
ON BEHALF OF THE
OFFICE OF CONSUMER ADVOCATE

August 6, 2021

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

2 A: David S. Habr, 213 Cornuta Way, Nipomo, CA.

3 **Q: Are you the same David S. Habr who previously filed direct testimony in this**
4 **proceeding?**

5 A: Yes, I am.

6 **Q: What is the purpose of your surrebuttal testimony?**

7 A: I am responding to comments made by Mr. Barca concerning my PAYGO versus
8 debt financing cost/benefit analysis and comments made by Mr. Huestis
9 concerning the adequacy of my year-end debt service coverage and the related
10 year-end cash level.

11 **Q: At page 53, lines 16-19, Mr. Barca claims that your PAYGO analysis assumes**
12 **that “ratepayers would have to pay in rates not only the \$100 million each**
13 **year but an additional 25%, presumably to match the debt service coverage**
14 **requirement of PWSA’s bonds.” Is this statement correct?**

15 A: No, it is not. An additional 25% would be an additional \$25 million per year. It is
16 clear on Page 1 of OCA Exhibit DSH-5 that I do not add an additional \$25 million
17 per year to the \$100 million PAYGO expenditures.

18 What I do add to the PAYGO expenditures is the difference between the
19 annual debt service coverage requirement and the actual debt service. This debt
20 service coverage “surplus” cash is needed by cash-flow utilities to cover cash
21 outflows including those that do not necessarily appear on the income statement.
22 I added this “surplus” to the PAYGO amounts because this need is independent of

1 whether or not capital expenditures are PAYGO or debt financed and must be
2 collected somehow.

3 **Q: Does Mr. Barca discuss the generational inequities generated by PAYGO**
4 **financing in place of debt financing?**

5 A: No, he does not.

6 **Q: Turning now to Mr. Huestis' testimony, do you agree with his opinion**
7 **expressed at Page 3, lines 3-10 that the OCA's recommended rate increase**
8 **does not provide the PWSA with a debt service coverage ratio "that would**
9 **permit the firm to maintain and attract capital?"**

10 A: No, I do not. OCA Exhibit DSH-3 clearly shows that my recommended 1.18x
11 debt service ratio when combined with other OCA financial metrics (Days of
12 Operating Revenues and Debt-to-Operating Revenues) yields financial metrics
13 consistent with an A3 bond rating, a rating that is sufficiently strong enough to
14 allow PWSA to attract capital on reasonable terms.

15 **Q: Does this conclude your surrebuttal testimony?**

16 A: Yes, it does.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
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	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, David S. Habr, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 2SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314844

Signature: 
David S. Habr

Consultant Address: Habr Economics
213 Cornuta Way
Nipomo, CA 93444-5020

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pa. Public Utility Commission	:	Docket Numbers
v.	:	R-2021-3024773
Pittsburgh Water and Sewer Authority	:	R-2021-3024774
	:	P-2021-3024779

Surrebuttal Testimony of
Scott J. Rubin

on Behalf of
the Pennsylvania Office of Consumer Advocate

August 6, 2021

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Introduction

1

2 **Q. Please state your name.**

3 A. My name is Scott J. Rubin. I previously submitted direct testimony and rebuttal
4 testimony in this proceeding on behalf of the Office of Consumer Advocate (“OCA”)
5 which are identified as OCA Statements 3 and 3R, respectively.

6 **Q. What is the purpose of your surrebuttal testimony?**

7 A. I have been asked by the OCA to review and critique (if necessary) the rebuttal
8 testimonies and exhibits submitted by Pittsburgh Water and Sewer Authority’s (“PWSA”
9 or “Authority”) witnesses relating to the cost-of-service studies (“COSS”), proposed rate
10 design for residential customers, and PWSA’s proposal to transition to separate
11 stormwater rates.

12 **Q. Whose testimony did you review?**

13 A. I reviewed the rebuttal testimony and exhibits submitted by PWSA witnesses Harold
14 Smith (PWSA Statement 4-R), Julie Quigley (PWSA Statement 6-R), and Keith Reading
15 (PWSA Statement 8-R).

16 **Q. Do you disagree with any portions of the rebuttal testimonies submitted by any of
17 those witnesses?**

18 A. For the most part, my direct testimony adequately addresses the arguments raised by
19 these witnesses in their rebuttal, and I will not reiterate my direct testimony here. Thus,
20 while I do not agree with everything said by these witnesses about issues I raised, I will

1 confine this surrebuttal testimony to two issues where the witnesses make arguments that
2 had not been made during their earlier testimony or discovery responses.

3 In particular, I will respond to (1) the dishonored payment fee testimony
4 submitted by Ms. Quigley, and (2) Mr. Readling’s criticisms of my proposed change in
5 the Residential stormwater tier breakpoints.

6 **Response to PWSA Witness Quigley (PWSA Statement 6-R)**

7 **Q. On page 96 of her rebuttal testimony, Ms. Quigley states: “Mr. Rubin starts from**
8 **the assumption that the dishonored payment fee should be based on costs and then**
9 **presents his analysis of those specific costs. However, PWSA does not view this as a**
10 **cost-based fee but rather a measure intended to discourage dishonored payments.**
11 **As such, the specific amount of the fee is not tied to costs but rather intended to be**
12 **set at a level to discourage the practice.” How do you respond?**

13 **A.** I strongly disagree with Ms. Quigley’s statement. Fees charged by a public utility should
14 bear a reasonable relationship to the utility’s cost of providing the service. A utility
15 should not be in the business of “discouraging” lawful conduct by imposing penalties on
16 customers that are well in excess of the utility’s costs.

17 Moreover, PWSA has not presented any evidence suggesting that customers lack
18 an incentive to avoid dishonored payments. Indeed, it is very likely that customers are
19 subjected to substantial fees from their banks for issuing a check that does not clear. For
20 example, one of the largest banks in PWSA’s service area, PNC Bank, charges

1 consumers an overdraft fee of \$36.00 for each dishonored check.¹ It is difficult to
2 imagine that customers need any further “incentive” or “penalty” to avoid issuing a
3 dishonored payment. Indeed, under my proposed cost-based charge of \$14.00, the PNC
4 customer issuing a dishonored check would pay \$50.00 in fees. This represents a penalty
5 of more than 50% on top of the typical Residential bill (under PWSA’s proposed rates) of
6 approximately \$91 per month.² In my opinion, this is more than sufficient incentive for a
7 customer to avoid issuing a dishonored check. There is no reason to artificially increase
8 the cost to the customer by an additional \$26 (under PWSA’s proposed \$40 charge) and
9 to allow PWSA to collect revenues greatly in excess of its processing costs.

10 **Q. On that same page of her rebuttal testimony, Ms. Quigley also states: “I would note**
11 **that the proposed fee is consistent with similar fees charged by other utilities. For**
12 **example, PPL Electric Utilities Corporation, Aqua Pennsylvania, Inc., and**
13 **Pennsylvania American Water Company all impose a \$20.00 dishonored payment**
14 **fee/returned check charge, plus any and all charges assessed by the bank.” Do you**
15 **agree with Ms. Quigley?**

16 A. No, I do not agree with Ms. Quigley. The charges assessed by banks to utilities that
17 process dishonored payments are relatively small, as demonstrated by data provided by
18 PWSA. As I explained in my direct testimony, PWSA’s bank charges it a fee of \$3.50 to
19 process a returned check and \$0.25 to process an electronic (direct debit) return. OCA
20 Statement 3, Schedule SJR-7. PWSA has not provided any justification for having a

¹ PNC Bank, Consumer Schedules of Service Charges and Fees, Regular Checking, <https://www.pnc.com/content/dam/pnc-com/pdf/personal/Checking/service-charges-standard-checking-A.pdf>.

² PWSA Rate Filing, Customer Notice, p. 1.

1 returned payment fee that is twice as high as the fee levied by other Commission-
2 regulated water utilities.

3 **Q. Does your proposed fee of \$14 include compensation to PWSA for the fee charged**
4 **by its bank?**

5 A. Yes, it does.

6 **Q. Does anything in Ms. Quigley’s rebuttal testimony cause you to change any of your**
7 **conclusions or recommendations?**

8 A. No.

9 **Response to PWSA Witness Readling (PWSA Statement 8-R)**

10 **Q. On page 3 of his rebuttal testimony, Mr. Readling states that under your proposed**
11 **tier breakpoints for Residential stormwater charges “the ratio of medians from the**
12 **data set would no longer result in 0.5, 1 and 2. In other words, if Mr. Rubin’s**
13 **breakpoints were used, the relative rates between tiers would need to be adjusted to**
14 **account for the new ratios of median impervious area that result from the**
15 **breakpoints.” Do you agree with these statements?**

16 A. No, I do not agree with Mr. Readling. First, and most importantly, he has not presented
17 any compelling reason why the ratio of the median impervious area should be used as a
18 guide to designing Residential stormwater rates. While the median impervious surface
19 area is a useful piece of information that can guide decisions, it is by no means the only
20 relevant data point. In my opinion, and especially when setting stormwater rates for the
21 first time, it also is important to try to minimize the number of properties that differ from

1 the typical property, provide a logical basis for rates that differ from the typical property,
2 and appropriately account for the margin of error inherent in measuring impervious
3 surface area.

4 Second, Mr. Readling does not provide any numbers to support his assertion.
5 Using the data for all Residential properties provided by the Authority in response to
6 OCA V-14, I prepared Table 1-SR to compare the median impervious area in the rate
7 tiers proposed by PWSA and me.

Table 1-SR: Comparison of Median Impervious Surface Area by Tier under PWSA and OCA Proposed Residential Stormwater Rate Designs						
	PWSA Proposed			OCA Proposed		
Tier	Maximum Area	Median Area	Ratio to Tier 2	Maximum Area	Median Area	Ratio to Tier 2
1	1,015	832	0.51	925	769	0.46
2	2,710	1,643		3,400	1,680	
3		3,355	2.04		4,122	2.45

8 **Q. What do you conclude from the data in Table 1-SR?**

9 A. I conclude that, even if one were to place great weight on the ratio of the median property
10 size, there is very little practical difference in those ratios between my proposal and
11 PWSA's proposal. PWSA proposed that the ratio of the Tier 1 median to the Tier 2
12 median should be 0.51 and my proposed ratio is 0.46. Both of these results would round
13 to 0.5, which apparently is Mr. Readling's target value.

14 The results for the comparison of the Tier 3 median property size to the Tier 2
15 median are somewhat more disparate, but I do not consider the difference to be
16 meaningful from a public policy standpoint. PWSA's proposal would result in a ratio of
17 2.04 times the Tier 2 median and my proposal results in a ratio of 2.45 times. Both of

1 these results would suggest that the typical Tier 3 property is about twice as large as the
2 typical Tier 2 property, which appears to be Mr. Readling's point.

3 **Q. You stated that the difference between a ratio of 2.04 times and a ratio of 2.45 times**
4 **is not meaningful from a public policy standpoint. What do you mean?**

5 A. Utility ratesetting is a process that is based on averages, central tendencies,
6 approximations, and other methods to try to develop appropriate groupings. We do not
7 attempt to set rates that precisely collect the actual cost to serve each customer. Rather,
8 we develop customer classes -- often with hundreds of thousands of customers -- who
9 share particular characteristics with one another, fully recognizing that there will be
10 customers on the margin and exceptions to the general characteristics of a customer (or
11 rate) class.

12 For example, typically commercial customers are larger than residential
13 customers and use utility services differently (at different times of day and for different
14 reasons). But there are exceptions to those general tendencies -- there are residential
15 customers who use more water (or gas or electricity) than some commercial customers;
16 there are some commercial customers who use utility services during the same times of
17 day as some residential customers, and so on. In other words, utility ratemaking is based
18 on approximations to try to balance numerous goals, such as fairness, ease of
19 administration, and ease of customer understanding.

20 In my opinion as a matter of ratesetting policy, there is little practical difference
21 for utility ratesetting between a ratio of tier medians that is 2.04 times or one that is 2.45

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION


Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
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	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Scott J. Rubin, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 3SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314845

Signature:



Scott J. Rubin

Consultant Address: 4627 Chandlers Forde
Sarasota, FL 34235-7118

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	Docket Nos. R-2021-3024773 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	
	:	

Surrebuttal Testimony of
Roger D. Colton

On Behalf of:
Office of Consumer Advocate
Statement 4SR

August 6, 2021

1 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

2 A. My name is Roger Colton. My address is 34 Warwick Road, Belmont, MA 02478.

3

4 **Q. ARE YOU THE SAME ROGER COLTON WHO HAS PREPARED DIRECT AND**
5 **REBUTTAL TESTIMONY ON BEHALF OF THE OFFICE OF CONSUMER**
6 **ADVOCATE IN THIS PROCEEDING?**

7 A. Yes, I am.

8

9 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

10 A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of
11 PWSA Witness Julie Quigley regarding certain issues involving the design and operation
12 of the Pittsburgh Water and Sewer Authority (PWSA) low-income bill assistance
13 programs. The bill assistance programs I address involve PWSA's Bill Discount Program
14 (BDP) and PWSA's Arrearage Forgiveness Program (AFP).

15

16 **Q. PLEASE STATE YOUR RECOMMENDATION REGARDING PWSA'S**
17 **PROPOSED CHANGES TO ITS BILL DISCOUNT PROGRAM.**

18 A. In my Direct Testimony, I state that despite the affordability shortcomings I identify with
19 respect to PWSA's existing BDP, "I recommend that the BDP modifications proposed by
20 PWSA in this proceeding be approved as an interim step. My agreement to the adoption
21 of the changes proposed by PWSA in this proceeding should not be construed as an
22 agreement that PWSA's BDP, as so modified, adequately addresses the affordability
23 needs of its low-income customers. I would reserve the right to address what

1 modifications PWSA would need to make to its BDP to adequately address affordability,
2 including the modification of the BDP to become a Percentage of Income Plan (PIP).”
3 (OCA St. 4, at 11 – 12) (internal notes omitted).

4
5 **Q. PLEASE RESPOND TO MS. QUIGLEY’S REBUTAL TESTIMONY**
6 **REGARDING THAT RECOMMENDATION.**

7 A. Ms. Quigley responds to my recommendation by stating that she believes “wholesale
8 revisions to our existing programs or policy decisions about what is or is not affordable
9 and what is the optimal program design for water and wastewater utilities are better
10 evaluated by the Commission on a statewide basis. Such evaluation would better inform
11 program design and ensure that PWSA is designing programs consistent with
12 Commission determined policy directions. Until such time, I believe the course we have
13 set for our low-income customer assistance programs, which is to evaluate and enhance
14 when deemed appropriate based on our experiences, is the most reasonable one for
15 PWSA and its ratepayers.” (PWSA St. 6-R, at 66).

16
17 It would appear to me that my Direct Testimony and Ms. Quigley’s Rebuttal Testimony
18 say, in essence, the same thing. We both have agreed that PWSA should continue to
19 make incremental improvements in its BDP.

20
21 **Q. PLEASE RESPOND TO MS. QUIGLEY’S DISCUSSION OF WHETHER**
22 **PWSA’S RATES ARE AFFORDABLE OR NOT?**

1 A. Ms. Quigley confirms that PWSA has not considered affordability in its filing for this
2 rate case. She conceded that her “direct testimony did not state that because of our low-
3 income customer assistance programs, PWSA’s low-income customers would be able to
4 ‘afford’ the proposed rate changes.” (PWSA St. 6-R, at 69). Rather than seeking to
5 achieve some level of affordability, Ms. Quigley says that the most PWSA does is to
6 implement a series of “rate mitigation measures. . .in consideration of our customer’s
7 (sic) circumstances.” (PWSA St. 6-R, at 69).

8
9 Despite Ms. Quigley’s affirmation that her testimony did not address affordability, and
10 that the Authority’s proposals are designed simply as “rate mitigation measures” rather
11 than mechanisms or strategies to achieve affordability, Ms. Quigley criticizes my
12 observation that PWSA rates remain unaffordable even after those “rate mitigation
13 measures.”

14
15 Ms. Quigley states that I use my observation that PWSA rates remain unaffordable “to
16 recommend either rejection of our rate proposals and/or significantly costly revisions to
17 our existing programs.” (PWSA St. 6-R, at 70). It is not clear what she is referencing,
18 given that my recommendation with respect to the BDP is, as I note above, that “I
19 recommend that the BDP modifications proposed by PWSA in this proceeding be
20 approved as an interim step.” (OCA St. 4, at 11 – 12) (Emphasis added).

21
22 **Q. IS IT NECESSARY TO RESOLVE THE CONFLICT BETWEEN YOUR DIRECT**
23 **TESTIMONY AND MS. QUIGLEY’S REBUTTAL TESTIMONY ON HOW TO**

1 **DEFINE AFFORDABILITY IN ORDER TO APPROVE THE BDP**

2 **MODIFICATIONS PROPOSED BY PWSA IN THIS PROCEEDING?**

3 A. A conflict does not necessarily exist. My testimony is that PWSA bills remain
4 unaffordable to PWSA low-income customers even after adoption of the BDP. (OCA St.
5 4, at 8, 10-11). Ms. Quigley’s testimony does not dispute that. Instead, Ms. Quigley
6 acknowledges that her “direct testimony did not state that because of our low-income
7 customer assistance programs, PWSA’s low-income customers would be able to ‘afford’
8 the proposed rate changes.” (PWSA St. 6-R, at 69). My Direct Testimony stated that
9 PWSA’s proposed modifications should be approved “as an interim step” toward
10 developing a full BDP program. (OCA St. 4, at 11-12). Ms. Quigley’s Rebuttal
11 Testimony stated that “without clear regulatory direction (as the Commission has
12 provided to electric and gas distribution companies) on what is affordable¹. . .the focus
13 on our programs should be whether they are reasonably designed to provide financial
14 assistance to those in need. . .” (PWSA St. 6-R, at 70). I see no conflict that necessarily
15 needs to be resolved in reaching a conclusion that PWSA’s proposed revisions to its BDP
16 should be approved in this proceeding. I propose no revisions to the PWSA BDP, let
17 alone “significantly costly revisions” as urged by Ms. Quigley.

18
19 **Q. IS THERE ANY PLACE WHERE MS. QUIGLEY’S REBUTTAL TESTIMONY**
20 **DOES IDENTIFY A CONFLICT OR DISAGREEMENT WITH THE**
21 **RECOMMENDATIONS OF YOUR DIRECT TESTIMONY?**

¹ This reference to “clear regulatory direction (as the Commission has provided to electric and gas distribution companies). . .” is a reference to the Commission’s CAP Policy Statement.

1 A. Yes. The point of disagreement, however, does not involve the structure of the BDP, but
2 rather involves the operation of the BDP. While Ms. Quigley argues that my
3 recommendations regarding the operation of the BDP are unreasonable, she does not
4 identify which of those recommendations she finds to be unreasonable: (1) establishing a
5 three-year outreach plan;² (2) identifying specific activities specifically directed toward
6 customers with income at or below 50% of Poverty;³ (3) identifying community groups
7 with which it proposed to work;⁴ (4) reporting on its performance;⁵ or (5) establishing “a
8 responsible action plan” in the event that PWSA fails to meet its enrollment goals.⁶

² Establishing three year plans is analogous to the Commission policy that each electric and natural gas utility shall develop a Universal Service and Energy Conservation Plan (USECP) and revise that plan on a three-year cycle. See, Final Policy Statement and Order, Docket M-2019-3012599, at 3 (“EDCs and NGDCs are required to offer these universal service programs in each distribution territory and to submit updated USECPs every three years for Commission approval.”) While I recommend that PWSA seek BCS “review,” I do not recommend the same sort of “approval” process to which electric and gas distribution utilities are subject.

³ This recommendation is analogous to the Commission’s direction to natural gas and electric distribution utilities. “Utilities should develop enhanced Consumer Education and Outreach Plans. . . While utilities have flexibility as to the contents of their plans. . . In particular, these plans should identify efforts to educate and enroll eligible and interested customers at or below 50% of the FPIG.” Final Revised CAP Policy Statement, at 79.

⁴ This recommendation is analogous to the Commission’s direction to natural gas and electric distribution utilities. Revised CAP Policy Statement, Section 69.265(8) (“CAP Design Elements”) (“If feasible, the utility should include nonprofit [community based organizations] CBOs in the operation of the CAP. . . A utility should develop and incorporate a Consumer Education and Outreach Plan as part of its USECP. Education and outreach may be conducted by nonprofit [community-based organizations] CBOs and should be targeted to low-income customers.”)

⁵ This recommendation is analogous to the Commission’s universal service data reporting requirements. USR Requirements, 52 Pa. Code §§ 62.1–62.8 (natural gas) and 54.71–54.78 (electric). The difference is that rather than asking the Commission to prescribe the data to be reported, I recommend that PWSA simply be directed to develop the metrics it will follow and the data necessary to do so.

⁶ This recommendation is analogous to the Commission’s requirements for natural gas and electric distribution utilities that their universal service programs be subject to a periodic third-party evaluation. Section 69.265(13) (“The utility should thoroughly and objectively evaluate its CAP. . . The evaluation should include both process and impact components. The process evaluation should focus on whether CAP implementation conforms to the program design and should assess the degree to which the program operates efficiently. The impact evaluation should focus on the degree to which the program achieves the continuation of utility service to CAP participants at reasonable cost levels”). The difference between that requirement and my recommendation is that my recommendation does not prescribe a periodic evaluation and does not provide for the formal submission of any evaluation to the

1 Ms. Quigley says that PWSA’s goal “is to increase enrollment in the customer assistance
2 programs.” (PWSA St. 6-R, at 75). But she doesn’t want to establish performance goals
3 on what that enrollment should be. Ms. Quigley says that PWSA’s goal is to
4 “establish[...] relationships with community-based organizations,” (PWSA St. 6-R, at
5 75), but she doesn’t want PWSA to be required to identify which community groups it
6 proposes to work with. Ms. Quigley says that PWSA will “continu[e] to track the
7 success of outreach efforts” (PWSA St. 6-R, at 75), but she does not want PWSA to be
8 required to report any of the data on that success (or lack thereof) to anyone. Ms. Quigley
9 says that PWSA is committed to “continue to evolve” its outreach tools (PWSA St. 6-R,
10 at 75), but she doesn’t want PWSA to be required to “establish a responsible action plan”
11 if PWSA’s efforts do not generate successful results.

12
13 **Q. WHAT IS MS. QUIGLEY’S OBJECTION?**

14 A. Ms. Quigley notes that my recommendation is that PWSA be directed to: “(1) set
15 quantitative goals for enrollment; (2) develop metrics to measure enrollment, (3) report
16 the data to BCS, (4) develop a responsive action plan; (5) report to the parties and BCS
17 affirmative steps to increase enrollments; (6) create a detailed three-year outreach plan
18 with specific quantitative outcome goals; and, (7) develop a detailed description of
19 community-based organizations.” (PWSA St. 6-R, at 76). Ms. Quigley objects that
20 having PWSA tasked with these steps is “too prescriptive at this time.” (PWSA St. 6-R,
21 at 76). But, nothing in this list is prescriptive at all, other than PWSA being directed to

Commission or to BCS, but rather provides for PWSA to use its ongoing assessment of shortcomings, if any, in program operation, and develop responsive actions should such shortcomings be identified.

1 undertake these basic program implementation steps. What Ms. Quigley does not
2 acknowledge is that my recommendation is not to have the Commission set goals,
3 establish metrics, dictate outreach strategies, and specify which community organizations
4 to use, but rather to have PWSA guide each of these program planning and
5 implementation steps.

6
7 Ms. Quigley states that rather than setting goals, developing metrics to determine whether
8 those goals are being achieved, reporting data on those metrics, and developing a
9 responsive action plan should the goals not be achieved, “the CARES team should be
10 given the flexibility to continue to pursue their mission. . .” (PWSA St. 6-R, at 76).

11
12 There is nothing inconsistent with having PWSA being “given the flexibility to continue
13 to pursue their mission” and having PWSA be directed that it has to engage in a
14 reasonable planning and review process in exercising that “flexibility.” In this regard,
15 when Ms. Quigley characterizes my testimony as “seeking to impose arbitrary
16 requirements,” she fundamentally mischaracterizes my recommendation. To establish
17 objective outcomes for your program, measure your progress toward those outcomes,
18 develop and report data on that progress, and develop responsive actions should your
19 outcomes not be achieved, are not “arbitrary requirements.” No one is proposing to
20 establish any requirements other than for PWSA to engage in responsible program
21 planning and implementation.

1 **Q. PLEASE RESPOND TO MS. QUIGLEY’S COMMENTS ABOUT THE DATA**
2 **DIFFERENCES YOU IDENTIFY IN YOUR DIRECT TESTIMONY.**

3 A. Ms. Quigley notes that I testified that PWSA provided substantially different numbers on
4 BDP participation rates when identical questions were presented in discovery. (PWSA St.
5 6-R, at 77). She explains that “the current system also makes data retrieval difficult and,
6 unfortunately, oftentimes unreliable.” (PWSA St. 6-R, at 78). I accept her explanation
7 that data provided to parties in this proceeding is “oftentimes unreliable.” I accept her
8 observation that PWSA hopes to have its “ability to pull and track data. . .be more
9 automated and reliable” in the future. Given that data as fundamental as how many low-
10 income customers are participating in BDP is “oftentimes unreliable” according to Ms.
11 Quigley, it is even more important for PWSA to identify which metrics it is proposing to
12 measure; what data it proposes to develop in assessing those metrics; and to report that
13 data for other stakeholders to be able to review to the extent to which, if at all, PWSA’s
14 data appears to be reliable.

15
16 **Q. PLEASE RESPOND TO MS. QUIGLEY’S REBUTTAL REGARDING THE BILL**
17 **DESIGN ISSUES IDENTIFIED BY OCA WITNESS ALEXANDER AS THEY**
18 **RELATE TO THE BDP AND AFP.**

19 A. In her Direct Testimony, OCA Witness Alexander identified certain bill design issues
20 that she testified would create confusion to participants in both the BDP and the AFP
21 offered by PWSA. (OCA St. 5, at 19-20). Ms. Quigley argues that no confusion will
22 arise, stating that “The previous balance, less the received payment, plus the current
23 charges, less the credit due to participation in the Bill Discount Program as well as the

1 forgiveness program are all clearly displayed on page 2 of the bill.” (PWSA St. 6-R, at
2 16-17). As Ms. Alexander notes, however, the bill does not clearly reflect these labels or
3 these calculations. It is critical for PWSA’s bills to accurately inform customers of the
4 bill discounts and arrearage forgiveness credits that program participants are receiving
5 through the BDP and AFP. Accurately and completely communicating the benefits
6 offered through the two programs (i.e., the BDP; the AFP) not only provides a further
7 incentive for program participants to fulfill their own payment obligations under the
8 programs, but it is critical for encouraging program participants to take those steps
9 necessary to maintain their program participation when the time arises for income
10 reverification to occur. The benefits in the form of bill discounts and arrearage
11 forgiveness credits must not only be provided, but they must also be clearly *seen* to be
12 provided. The recommendations of Ms. Alexander regarding improvements to bill
13 design should be considered as important steps not merely in providing consumer
14 information, but important steps, also, in ensuring that the low-income programs operate
15 as intended.

16
17 **Q. PLEASE RESPOND TO MS. QUIGLEY’S OPPOSITION TO YOUR**
18 **RECOMMENDED CHANGES TO PWSA’S ARREARAGE FORGIVENESS**
19 **PROGRAM.**

20 A. Ms. Quigley opposed each proposed modification to PWSA’s Arrearage Forgiveness
21 Program (AFP) offered in my Direct Testimony. More specifically, Ms. Quigley
22 opposed my recommendation that “low-income customers newly enrolled in PWSA’s
23 BDP should be automatically enrolled in the AFP.” (PWSA St. 6-R, at 86). She stated

1 that she does “not support automatic enrollment without the consent of the customer. . .”
2 My recommendation, however, was not to place customers in the AFP “without the
3 consent of the customer.” My recommendation was to make the enrollment in the BDP
4 and the AFP the same process. At present, PWSA requires a low-income customers to
5 enroll in BDP and then to require that customer to separately apply for AFP. That two-
6 step enrollment process is neither effective nor efficient, as is evidenced by the low
7 enrollment of new BDP participants into the AFP as I cited in my Direct Testimony.

8
9 In addition, Ms. Quigley opposes my recommendation that the AFP should be modified
10 such that rather than receiving a \$15 credit for making each payment on a payment plan,
11 customers be provided a credit of sufficient size that the combination of payments and
12 credits reduce the outstanding balance to \$0 in three years. She states that PWSA’s
13 current data system “cannot accommodate the changes from a technical perspective.”
14 (PWSA St. 6-R, at 87). What Ms. Quigley does not address is that, as I documented in
15 my Direct Testimony, in October 2020, BDP customers newly entering the program
16 brought an average arrears of \$1,242.88 into the program; in January 2021, BDP
17 participants newly entering the program brought an average of \$1,011.79 into the
18 program; and in April 2021, BDP participants newly entering the program brought an
19 average arrears of \$1,150.54 into the program. (OCA St. 4, at 14). At an arrearage credit
20 of \$15 per month, therefore, it would take AFP participants between roughly six (68
21 months) and seven (83 months) years to earn sufficient arrears to bring those average
22 arrears down to a \$0 balance. In addition, that assumes that low-income customers will

1 make “timely” payments in every one of those months over a six to seven year period, a
2 result not likely to occur.

3
4 I continue to recommend that the combination of payments and credits should eliminate
5 the arrearage within three years. Ms. Quigley’s concerns about the technological
6 limitations of the current system could be addressed by simply changing the dollar
7 amount of the credit such that the three-year result would be achieved as a practical
8 result.

9
10 I summarized the calculation of an arrearage forgiveness credit in my summary of
11 recommendations (OCA St. 4, at 4; see also, OCA St. 4, at 15). At that point, I state:
12 “Arrearage Forgiveness Credits should be expanded such that any pre-existing arrearage
13 exceeding \$180 at the time of enrollment in the BDP will be reduced to zero by the third
14 year of participation. . .The first \$180 of arrears remains the responsibility of the enrollee
15 to pay over a three year payment plan.” Accordingly, if a pre-program arrearage is less
16 than \$180, there is no forgiveness. If a pre-program arrears is more than \$180, the first
17 \$180 is spread over a three-year payment plan. For each payment made, a credit is
18 provided such that the arrearage will be reduced to zero by the third year of participation.
19 I recommend, in other words, that 1/36th of the pre-existing arrears be forgiven for each
20 payment made on the payment plan for arrears exceeding \$180.

21
22 Ms. Quigley also opposes granting arrearage forgiveness for each complete payment as it
23 is made, rather than providing forgiveness only when a “timely” payment is made. “Any

1 other approach,” she asserts, would require PWSA “to cover the full costs of services
2 rendered without any incentives to customers to pay. . .” (PWSA St. 6-R, at 88). In
3 asserting that PWSA’s current process is reasonable, and that “*any other approach*”
4 (PWSA St. 6-R, at 88) is not, Ms. Quigley did not report that, my proposal was to exactly
5 mirror the Commission’s current CAP Policy Statement. (OCA Response to PWSA-1-4,
6 PWSA-1-9). In its Final Policy Statement and Order, Docket No. M-2019-3012599, the
7 Commission stated in relevant part:

8
9 Section 69.265(6)(ix) of the CAP Policy Statement recommends that
10 CAPs provide PPA forgiveness over “a 2- to 3-year period
11 contingent upon receipt of regular monthly payments by the CAP
12 participant.” *In 2014, the Commission began directing utilities in*
13 *their periodic USECP review proceedings to apply PPA forgiveness*
14 *for each timely and in-full CAP payment, regardless of existing in-*
15 *program debt. Some utilities have voluntarily adopted policies*
16 *allowing CAP customers to receive PPA forgiveness for any*
17 *monthly payments missed once the entire CAP balance (i.e., in-*
18 *program arrears) is paid in full.*

19
20 * * *

21 22 **Discussion**

23
24 As part of the CAP design, PPA forgiveness acts to both reduce
25 customer PPA debt over time and reward consistent payment habits.
26 CAP customers may be more likely to be consistent with monthly
27 payments – even if they fall behind – if there is a continuing
28 opportunity to reduce PPA debt. We find that granting PPA
29 forgiveness with each on-time and in-full monthly payment,
30 regardless of in-program arrears is appropriate and reasonable.
31 Offering retroactive PPA forgiveness can also provide a strong
32 incentive for customers to catch up on missed payments.

33
34 Final Policy Statement and Order, at 56 (emphasis added) (internal notes omitted).
35

1 **Q. PLEASE RESPOND TO MS. QUIGLEY’S OBJECTION TO YOUR**
2 **CALCULATION OF ARREARAGE FORGIVENESS COSTS.**

3 **A.** Ms. Quigley states that my “projections regarding costs of the credits appear to be
4 significantly underestimated” and that my “cost analysis appears to be a significant
5 underestimation of realistic costs of the proposal.’ (PWSA St. 6-R, at 87 -88). She does
6 not identify how, or why, or by how much, my cost projections “appear to be
7 significantly underestimated.”

8
9 My calculation of the arrearage forgiveness costs is entirely reasonable. For qualified
10 PWSA customers who participate in the arrearage forgiveness program, pre-program
11 arrears are frozen at the time of enrollment. Once enrolled in the program, PWSA no
12 longer pursues collection of the customers’ existing (or pre-program) arrears. Given that
13 even though the pre-program arrears remain part of the customer’s balance even though
14 they are not enforced upon, those arrearages are included in the PWSA billings against
15 which actual collections (i.e., receipts) will be compared to determine the total Company
16 collection factor. By definition, however, those pre-program arrearages are no longer
17 being subject to collection once the customer enrolls in the arrearage forgiveness
18 program. If they are not removed from the billings in the calculation of the total
19 Company collection factor, rates will be increased to reflect the resulting reduced
20 collection factor. Accordingly, an adjustment needs to be made, as I have done, to the
21 arrearage forgiveness credits that are allowed to be separately included in rates.

1 The 25% factor is designed to prevent PWSA from double-collecting a portion of the
2 Arrearage Forgiveness credits. It reflects the fact that, even in the absence of the
3 Arrearage Forgiveness program, PWSA would not collect 100% of its low-income
4 arrears. In discovery, OCA asked that PWSA provide, in Excel format, “any
5 collectability study prepared by or on behalf of PWSA regarding: (a) Customers as a
6 whole; (b) Residential customers as a whole; (c) CAP participants; (d) Arrears over 90
7 days old; (e) Arrears over 120 days old; and (f) Arrears over 180 days old.” PWSA
8 responded that “PWSA has not prepared or commissioned a collectability study.” (PWSA
9 Response to OCA-I-19). Without having prepared or commissioned a collectability study
10 as requested by OCA, it is not possible for PWSA to have adjusted rates to prevent a
11 double-collection.

12
13 The lost revenue adjustment I propose is based on the same principles articulated by the
14 Philadelphia Water Department (PWD) when it sought to adjust its rates in its 2021 rate
15 case. In its rate filing, PWD proposed to include the costs of its low-income (Tiered
16 Assistance Program, or TAP) arrearage forgiveness credits through its TAP Rate Rider.
17 PWD’s own consultant, Black and Veatch (PWD St. 7B, 2021 base rate case) stated that:
18 “The proposed AF-Factor is intended to allow the Water Department the ability to
19 recover a portion of the costs (in dollars) of providing arrearage forgiveness to eligible
20 TAP Customers.” (PWD St. 7B, at 10, emphasis added). Black and Veatch explained:
21 “At the time of the annual TAP-R reconciliation, AF will be determined based upon the
22 actual amount of arrears forgiven in accordance with Section 206.7 of the Water
23 Department’s regulations. The total amount of arrearage forgiveness included in

1 determining the TAP-R surcharge rates will be adjusted by applying a proposed TAP Lost
 2 Revenue Adjustment Factor of 9%.” (Id., at 10 – 11, emphasis added). The “lost revenue
 3 adjustment factor of 9%” is an acknowledgement of the fact that PWD would fail to
 4 collect 91% of the billed revenues included in the pre-program arrears even in the
 5 absence of the TAP arrearage forgiveness. Rather than using the same 91% used by
 6 PWD, I adjusted that figure downward to reflect the fact that the age of PWSA arrears
 7 subject to forgiveness, while substantial, are not nearly as substantial as the age of PWD
 8 arrears subject to forgiveness. Rather than applying a 9% Lost Revenue Adjustment
 9 Factor, therefore, I applied a 25% Lost Revenue Adjustment Factor (which is an
 10 acknowledgement that PWSA would fail to collect 75% of the arrears subject to
 11 forgiveness).

12
 13 The 75% factor has a basis in fact beyond being adjusted to reflect the differences
 14 between PWD and PWSA. In the absence of a PWSA collectability study of any sort,
 15 whether by income or by age of arrears, I draw upon my experience with other water
 16 utilities. For example, one of my clients, Toledo Water, establishes an allowance for
 17 uncollectible account balances based on the age of arrears. According to the 2020
 18 *Financial Overview* for Toledo’s Department of Public Utilities (December 2020),
 19 Toledo establishes its uncollectible expectations for Toledo Water:

Allowance for Uncollectible Accounts (2020 Financial Overview, Toledo Department of Public Utilities)					
	<30 days	<60 days	<90 days	<180 days	<365 days
Water	1%	5%	20%	40%	75%

1 As the dollars of arrears falling into older aging buckets increases, Toledo Water finds it
2 increasingly more difficult to collect the dollars that it bills. Thus, my recommended
3 25% lost revenue adjustment has both an empirical basis and is well within a range of
4 reasonableness.

5
6 **Q. IS THERE ANY FINAL ASPECT OF YOUR DIRECT TESTIMONY THAT MS.**
7 **QUIGLEY OPPOSED TO WHICH YOU WISH TO RESPOND?**

8 A. Yes. My Direct Testimony was that PWSA's arrearage forgiveness be portable between
9 service addresses if an AFP participant were to change addresses within the PWSA
10 service territory. Ms. Quigley opposed that recommendation, stating that "because of its
11 ability to pursue a lien, PWSA always keeps the debt at the property. As such, we could
12 not offer the forgiveness credit for consumers moving to another address." (PWSA St. 6-
13 R, at 88). Accepting Ms. Quigley's representation that "PWSA always keeps the debt at
14 the property," one conclusion to be reached is that when a PWSA customers moves
15 within the PWSA service territory, the debt will not follow that customer to the new
16 address.

17
18 PWSA, however, cannot have it both ways. PWSA cannot allow a debt to follow a
19 residential customer to a new service address for collection purposes when that customer
20 moves within the PWSA service territory, but then state that that it "always keeps the
21 debt at the property" for purposes of denying arrearage forgiveness. The Commission
22 should direct that, as a condition of denying the portability of arrearage forgiveness to
23 residential customers who move within the PWSA service territory, PWSA will refrain

1 from having any debt to such a customer move to the new service address for purposes of
2 collection.

3
4 **Q. DOES ANYTHING IN MS. QUIGLEY’S REBUTTAL TESTIMONY CAUSE YOU**
5 **TO CHANGE ANY OF YOUR CONCLUSIONS OR RECOMMENDATIONS**
6 **CONCERNING YOUR RECOMMENDATIONS FOR PWSA’S BDP OR AFP?**

7 A. No. Based on the data and analysis presented in my Direct, Rebuttal and Surrebuttal
8 Testimonies, I continue to recommend as follows:

- 9 ➤ I support the recommendation of OCA witness Scott Rubin that the residential
10 customer charge should collect customer-related costs from the COSS with no adder
11 to further inflate fixed-charge recovery from Residential customers.
- 12
13 ➤ I recommend that the BDP modifications proposed by PWSA in this proceeding be
14 approved as the next step toward developing a full BDP program.
- 15
16 ➤ Given that the Settlement of the last rate case provided that “all parties reserve the
17 right to address the issues of an arrearage forgiveness program in the next base rate
18 case,” I recommend that PWSA be directed to modify its pilot Arrearage Forgiveness
19 Program in the following ways:
 - 20
21 ○ Low-income customers newly enrolling in PWSA’s Bill Discount Program
22 should be automatically enrolled in the Pilot Arrearage Forgiveness Program.
 - 23
24 ○ Existing BDP participants should be contacted by both mail and outbound
25 telephone call from a community-based organization offering enrollment in
26 the Pilot Arrearage Forgiveness Program.
 - 27
28 ○ Arrearage Forgiveness Credits should be expanded such that any pre-existing
29 arrearage exceeding \$180 at the time of enrollment in the BDP will be
30 reduced to zero by the third year of participation. This should replace
31 PWSA’s current program which provides a \$15 credit for each timely
32 customer payment. (PWSA St. 6, at 24). The first \$180 of arrears remains the
33 responsibility of the enrollee to pay over a three year payment plan.
 - 34

1 ○ Arrearage Forgiveness Credits should be granted on a monthly basis for each
2 complete payment that has been successfully made by an Arrearage
3 Forgiveness participant. Consistent with the Commission’s prior decisions
4 regarding energy utility arrearage forgiveness, no requirement of “timeliness”
5 will be required for a complete payment to earn the corresponding Arrearage
6 Forgiveness Credit. PWSA’s current program requirement that “provides for
7 a \$15 reduction of a customer’s arrears for every on-time payment plan
8 payment” (PWSA St. 6, at 24) is inconsistent with Commission precedent.
9

10 ○ Arrearage Forgiveness Credits should be portable as between service
11 addresses, so long as a service address change for a program participant is
12 within the PWSA service territory. Customers who are making payments
13 should not be penalized simply because they move. Nor should customers be
14 faced with removal from the program in the event that they do not reapply
15 when they change addresses within the PWSA service territory.
16

17 ➤ PWSA was to be limited to a “pilot” arrearage forgiveness program in the Settlement
18 of PWSA’s last base rate case. The rationale for limiting arrearage forgiveness to a
19 “pilot” status no longer exists. Accordingly, I recommend that the arrearage
20 forgiveness program, along with enrollment and outreach, be adopted as one part of
21 PWSA’s low-income program without being deemed to be a pilot.
22

23 ➤ I recommend continuing the provisions of the PWSA Settlement of its last rate case
24 offering assistance to customers with income up to 300% of Poverty Level for one
25 additional year. PWSA agreed in its 2020 Settlement to provide protections for
26 customers at this income range (i.e., up to 300% of Poverty) until January 14, 2022.
27 My recommendation is to extend that agreement through January 1, 2023 (unless
28 PWSA or another party to this proceeding, petitions the Commission for a longer
29 extension).
30

31 ➤ PWSA should be specifically directed to set quantitative goals for BDP annual
32 enrollment. As part of establishing those goals, PWSA should also be directed to
33 develop measurable metrics by which to measure the success of achieving its BDP
34 enrollment goals and to periodically report to the Bureau of Consumer Service (BCS)
35 on the Company’s performance relative to those metrics. In the event that PWSA
36 does not fulfill its enrollment goals, it should be required to establish, within six
37 months of a finding of a shortfall in performance, a responsive action plan. Finally,
38 the Company should be directed to report to the parties and to BCS the affirmative
39 steps it will take to increase the enrollment of customers with income specifically at
40 or below 50% of Poverty.

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- As part of the immediately preceding recommendation, I recommend PWSA be directed to submit a detailed three-year outreach plan to the parties and to BCS within six months of a final order in this proceeding. This outreach plan should include specific quantitative outcome goals regarding (1) the expansion of the identification of Confirmed Low-Income customers; (2) the expansion of BDP enrollment; and (3) the expansion of BDP enrollment by customers with income at or below 50% of Poverty. The outreach plan should include specifically identified activities directed toward reaching customers with income at or below 50% of Poverty. The outreach plan should include a detailed description of community-based organizations with whom PWSA will work, including but not limited to, grassroots community-based organizations, food banks, schools, Head Start and other preschool programs.

15 I also support the recommendations of Ms. Alexander regarding improvements to bill
16 design relating to the BDP and the AFP.

17 **Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?**

18 A. Yes, it does.

19

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Roger D. Colton, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 4SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314846

Signature:


Roger D. Colton

Consultant Address: Fisher, Sheehan, & Colton
34 Warwick Road
Belmont, MA 02478

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission, et al.:	:	
v.	:	Docket Nos.
	:	
	:	R-2021-3024773 (Water)
Pittsburgh Water and Sewer Authority	:	R-2021-3024774 (Wastewater)
	:	R-2021-3024779 (Stormwater)

SURREBUTTAL TESTIMONY

OF

BARBARA R. ALEXANDER

Barbara Alexander Consulting LLC

ON BEHALF OF THE

OFFICE OF CONSUMER ADVOCATE

August 6, 2021

1 Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

2 A. My name is Barbara R. Alexander. I am the sole member of Barbara Alexander Consulting
3 LLC. My address is 83 Wedgewood Dr., Winthrop, ME 04364. I appear in this case as a
4 witness on behalf of the Office of Consumer Advocate (OCA).

5 Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

6 A. Yes. I filed Direct Testimony on behalf of the OCA on July 6, 2020.

7 Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

8 A. I am filing Surrebuttal Testimony in response to the Rebuttal Testimony of William
9 Pickering,¹ Julie Quigley,² Barry King,³ and Tony Igwe,⁴ on behalf of the Pittsburgh Water
10 and Sewer Authority (PWSA). I also address Mr. D.C. Patel's Rebuttal on behalf of the
11 Bureau of Investigation and Enforcement (I&E).⁵

12 Q. AS A PRELIMINARY MATTER, PLEASE ADDRESS THE PWSA STATEMENTS
13 THAT THE COMMISSION DOES NOT HAVE AUTHORITY TO IMPOSE
14 CUSTOMER SERVICE PERFORMANCE REQUIREMENTS AS A CONDITION OF
15 THIS RATE CASE FILING.

16 A. Several PWSA witnesses claim that based on their counsel's advice, "performance
17 standard measures cannot be required as a condition of approving a rate increase."⁶ I will
18 defer to OCA's counsel for a legal analysis of this statement. However, PWSA's witnesses,
19 including Mr. Pickering, have repeatedly sought to characterize PWSA's service quality

¹ PWSA St. No. 1-R.

² PWSA St. No. 6-R.

³ PWSA St. No. 5-R.

⁴ PWSA St. No. 7-R.

⁵ I&E St. No. 2-R.

⁶ PWSA St. No. 5-R at 16 (King); PWSA St. No. 6-R at 36 (Quigley).

1 and customer service performance as “best in class,” and reflecting “customer centric”
2 objectives.⁷ Mr. Pickering then appears to justify the proposed rate increase based on this
3 performance: “That PWSA has fully justified and is in serious need of a rate award that
4 grants all or substantially all of its request if PWSA is going to be able to continue its
5 progress and provide first rate service to its customers.”⁸ Ms. Quigley on behalf of PWSA
6 devoted most of her Direct Testimony to providing information on how PWSA has
7 improved and continues to improve its service quality and customer service performance
8 since coming under the Commission’s jurisdiction. By using such improvement and the
9 use of “best in class” standards and internal performance metrics to justify their rate
10 increase, PWSA recognizes the link between service quality and customer service
11 performance and rate setting. This approach is maned by the statutory provisions
12 governing public utility rate cases in which the Commission must evaluate the “efficiency,
13 effectiveness, and adequacy of service.”⁹ As such, the Commission requires rate case
14 filings to include information about service quality performance.¹⁰

15 Q. IS THERE AN ADDITIONAL ASPECT OF THIS RATE CASE THAT SUPPORTS
16 YOUR POSITION ON THE NEED FOR ACTUAL PERFORMANCE STANDARDS TO
17 ACCOMPANY ANY RATE INCREASE APPROVED BY THE COMMISSION?

18 A. Yes. As I described in my Direct Testimony, much of PWSA’s recent performance has
19 occurred during a period of the COVID-19 pandemic that resulted in a halt in termination
20 of service and the temporary halt to some in-person field work and other personal

⁷ See, e.g., PWSA St. No. 1-R at p. 8, lines 7-9 and p. 10, line 3.

⁸ Ibid., at p. 10, lines 6-8.

⁹ 66 Pa. C.S. § 523.

¹⁰ PWSA’s rate case filing included Tab 12, Filing Requirement IX, Quality of Service.

1 interactions with customers. As a result, PWSA's performance, particularly with respect
2 to its call center, has not been recently "tested" with the volume of calls and disputes that
3 would accompany a normal collection policy. This concern does not assume that PWSA
4 has any intention of seeking to perform or tolerating a lower level of actual performance if
5 a rate increase is granted. It is only an obvious consideration to include in my
6 recommendations to ensure the ongoing performance continues to improve or meet internal
7 standards established by PWSA when more normal operational circumstances will occur
8 during the rate effective year(s) in this rate case. Otherwise, the link between service
9 quality and customer service performance and increased rates has little meaning.

10 Q. AS A RESULT OF YOUR OPINION, DO YOU CONTINUE TO RECOMMEND THAT
11 THE COMMISSION REQUIRE PWSA TO MEET ITS OWN INTERNAL SERVICE
12 QUALITY AND CUSTOMER SERVICE PERFORMANCE STANDARDS AS A
13 CONDITION OF A RATE INCREASE?

14 A. Yes.

15 Q. HAVE YOU PROPOSED PENALTIES FOR PWSA'S FAILURE TO MEET ITS OWN
16 PERFORMANCE STANDARDS?

17 A. No. I have not proposed that PWSA incur penalties or suffer financial consequences for
18 the failure to perform based on its own internal standards, but my recommendations include
19 requirements that PWSA commit to such performance and take reasonable steps to correct
20 the failure to meet such standards on a regular basis.

21 Q. TURNING TO ANOTHER GENERIC ISSUE THAT PERMEATES PWSA'S
22 REBUTTAL TESTIMONY, PLEASE COMMENT ON THE ONGOING STAGE 2
23 COMPLIANCE PROCEEDING.

1 A. In her rebuttal testimony, Ms. Quigley on behalf of PWSA insists that some or most of my
2 recommendations relate to the issues listed as under the Stage 2 compliance proceeding
3 and that, therefore, they are not relevant and cannot be resolved in the rate case.¹¹ I am
4 fully aware of the list of issues deferred to Stage 2 and I have serious concerns about the
5 ongoing delays in resolving many of these important compliance issues relating to essential
6 consumer protections reflected in the Commission’s regulations and applicable to other
7 public utilities in the Commonwealth. PWSA came under the Commission’s jurisdiction
8 in 2018. This is the third rate case since that jurisdictional event. However, PWSA has
9 put most of these compliance issues into this rate case in Ms. Quigley’s Direct Testimony
10 in which she claims that PWSA complies with almost all of the consumer protection
11 requirements and attaches a list of provisions in Chapter 56 that she claims PWSA complies
12 with.¹² I do not agree with her conclusions. And I certainly do not agree with her
13 characterization of the remaining issues as likely to result in “tweaks” to PWSA’s current
14 policies and procedures as she states in her Rebuttal.¹³ As a result of these repeated claims,
15 it is entirely reasonable to focus on those issues that reflect, in my opinion, policies that do
16 not conform to required consumer protections and that should be reformed sooner rather
17 than later. My main concerns relate to PWSA’s ongoing refusal to comply with the plain
18 language of the obligation to seek personal contact with the customer immediately prior to
19 termination of service, the lack of an understandable presentation of the Bill Discount
20 program on its customer bills, and the lack of customer education on its unique authority
21 to seek collection via a lien on property. In all three areas, PWSA has responded with some

¹¹ PWSA Statement No. 6-R, at 8-15.

¹² PWSA St. No. 6.

¹³ PWSA St. No. 6-R, at 14, line 9.

1 changes and some alteration in their policies and procedures in recent years but declines to
2 implement my specific recommendations in this proceeding.

3 Q. WITH REGARD TO TERMINATION OF SERVICE, PLEASE DISCUSS YOUR
4 RESPONSE TO I&E AND PWSA REBUTTAL TESTIMONY.

5 A. Both Mr. Patel on behalf of I&E and Ms. Quigley on behalf of PWSA disagreed with my
6 recommendation that PWSA should halt termination of service to residential customers
7 until the Stage 2 compliance proceeding is completed.¹⁴ Both pointed out the potential for
8 adverse impact on PWSA's revenues if the utility cannot threaten or terminate service for
9 nonpayment or other authorized reasons for the length of time that Stage 2 may encompass.
10 I agree that my recommendation was overly comprehensive.

11 My primary concern is the longstanding refusal of PWSA to implement the plain
12 language directive of Chapter 56 that requires a public utility to attempt personal contact
13 immediately prior to termination of service and that sets forth specific reasons that would
14 require the utility to halt termination.¹⁵ This contact with the adult at the premises, should
15 it occur, is vital to ensuring that the customer's rights are recognized and responded to in
16 the event of (1) allegation of payment; (2) presence of medical emergency; and (3) assertion
17 of rights pursuant to victims of domestic violence or abuse. My discovery throughout these
18 and prior proceedings has documented that PWSA does not train its field personnel on
19 these rights or how to respond to these rights should they be encountered in the field.

20 Q. DOES PWSA NOW AGREE TO IMPLEMENT THE OBLIGATION TO ATTEMPT
21 PERSONAL CONTACT IMMEDIATELY PRIOR TO TERMINATION OF SERVICE?

¹⁴ I&E Statement No. 1-R, at 2-4; PWSA Statement No. 6-R, at 14.

¹⁵ 52 Pa. Code §§ 56.94, 56.334.

1 A. Yes. In her Rebuttal, Ms. Quigley appears to agree to implement the required policy and
2 describes an effort to solicit a third-party contractor to work as an agent of PWSA to
3 implement this requirement.¹⁶ As a result, my most serious concern with respect to
4 allowing PWSA to resume termination of service for residential customers is partially
5 resolved. The only remaining concern is the timing of PWSA's compliance with this
6 Chapter 56 requirement.

7 Q. DO YOU REVISE YOUR RECOMMENDATION IN YOUR DIRECT TESTIMOY
8 CONCERNING THE RESUMPTION OF TERMINATION OF SERVICE BY PWSA?

9 A. Yes. I revise my recommendation in this regard to require that PWSA implement the
10 obligation to attempt personal contact immediately prior to the termination of service for a
11 residential customer prior to resuming termination programs for residential customers. I
12 also would not oppose an exemption¹⁷ to this requirement where the customer has a large
13 overdue balance¹⁸ and has, after some form of documented contact has been achieved,
14 refused to enter a payment plan or abide by a PWSA or BCS-ordered payment plan. Thus,
15 the wholesale resumption of termination of service by PWSA until Stage 2 is fully resolved
16 is no longer an issue and the timing of such resumption is within PWSA's hands.

17 Q. TURNING TO THE BILL DESIGN ISSUE YOU RAISED, CAN THIS ISSUE BE
18 DEALT WITH IN THE STAGE 2 PROCEEDING?

19 A. It is entirely possible that the bill design issue I raised with respect to the Bill Discount Bill
20 in my Direct Testimony could be resolved informally or formally in the Stage 2 process. I
21 included that concern in my Direct because PWSA has gone through a good faith effort to

¹⁶ PWSA St. No. 6-R, at 26.

¹⁷ This exemption would apply only until the personal contact policy is fully resolved in the Stage 2 proceeding.

¹⁸ An amount that I defer to PWSA to recommend in response to this proposal.

1 redesign their bills and conform the bill content to the Chapter 56 requirements. The new
2 bill redesigns were only recently adopted and obviously any concerns about the new bill
3 formats and content were not possible to identify in the previous Compliance Plan orders.
4 PWSA's assumption may have been that the recently adopted bill design and content have
5 met the compliance requirements. However, my review of this specific bill sample
6 submitted in discovery by PWSA and attached to my Direct Testimony as Exhibit BA-2
7 identified a new issue that deserves PWSA's attention as soon as possible. Ms. Quigley's
8 Rebuttal on this matter does not reflect the obvious confusion as to how the Bill Discounts
9 have impacted the current bill or the amount owed. She states, "The previous balance, less
10 the received payment, plus the current charges, less the credit due to participation in the
11 Bill Discount Program as well as the forgiveness program are all clearly displayed on page
12 2 of the bill."¹⁹ However, page 2 of the bill does not clearly reflect these labels or
13 calculations. Ms. Quigley acknowledges customer feedback would be useful on PWSA's
14 bills and I urge PWSA to conduct a focus group of Bill Discount Program customers to
15 discuss the presentation of this program on their bills.

16 Q. WITH REGARD TO YOUR CONCERNS ABOUT THE PRESENTATION OF
17 ALCOSAN CHARGES ON PWSA'S BILL, PLEASE COMMENT ON MS. QUIGLEY'S
18 APPARENT REJECTION OF YOUR RECOMMENDATION.

19 A. Ms. Quigley's Rebuttal appears to assume that I am questioning PWSA's contract with and
20 collection practices concerning ALCOSAN charges.²⁰ I do not. I agree with PWSA's
21 policies to engage in discussions with PWSA's customers about how to pay for ALCOSAN

¹⁹ PWSA St. No. 6-R at 16-17.

²⁰ PWSA St. No. 6-R at 18-19.

1 charges and enter payment plans that include ALCOSAN charges. My recommendation is
2 not directed to PWSA's policies but to the statement on the PWSA bill. My concern is that
3 the bill issued by PWSA does not clearly inform customers of when to call PWSA and
4 when to call ALCOSAN; it appears to direct PWSA customers to call ALCOSAN to
5 discuss the ALCOSAN charges. I recommend that PWSA correct its standard bill message
6 to make clear that the charges are set by ALCOSAN and passed through by PWSA, but
7 that questions about collecting the charges should be directed to PWSA. Again, this bill
8 redesign was only recently adopted and was not contemplated specifically with the
9 adoption of the Compliance Plan proceedings.

10 Q. MS. QUIGLEY REJECTS YOUR RECOMMENDATION THAT PWSA INCLUDE
11 INFORMATION ABOUT ALCOSAN CHARGES IN ITS CUSTOMER NOTICES
12 ABOUT PROPOSED RATE CHANGES. PLEASE RESPOND.

13 A. I understand that PWSA does not establish the amount of the ALCOSAN charges even
14 though by contract PWSA bills and collects those charges. I also recognize Ms. Quigley's
15 concern about lengthening the customer notice by adding the ALCOSAN rates. However,
16 I continue to recommend that PWSA's rate increase notices plainly state that the proposed
17 total bill increases do not include ALCOSAN charges (or other charges billed and collected
18 for wastewater treatment), thus distinguishing those additional charges from PWSA's
19 proposed rates for "conveyance" of wastewater.

20 Q. DO YOU SEEK TO HAVE THE COMMISSION REGULATE PWSA'S AUTHORITY
21 TO USE A LIEN TO COLLECT PRIOR UNPAID DEBTS?

22 A. No.

1 Q. WHAT ASPECT OF PWSA'S MUNICIPAL LIEN AUTHORITY DO YOU
2 RECOMMEND THAT THE COMMISSION ADDRESS IN THIS RATE CASE?

3 A. My recommendation relates solely to PWSA's obligation under the Commission's
4 jurisdiction to issue correct customer information and communicate with customers in plain
5 language. PWSA has done a reasonable job of educating their customers about the
6 Commission-approved credit and collection procedures and customer rights and remedies.
7 However, the lack of information readily available to PWSA's customers about the lien
8 authority is a missing link. Ms. Quigley confuses my concern about educating customers
9 about a right that I am not questioning in this proceeding with the notion that somehow
10 agreeing to provide adequate customer education brings the Commission into a
11 "regulation" of PWSA's municipal lien rights. I do not agree that asking the Commission
12 to require PWSA to educate customers about this additional lien authority constitutes any
13 interference in PWSA's rights under the Municipal Lien Law.

14 Q. DO YOU AGREE WITH MS. QUIGLEY'S ATTEMPTS TO DOCUMENT HOW
15 CUSTOMERS ARE INFORMED OF THE LIEN LAW AND PWSA'S LIEN RIGHTS?

16 A. No. Her suggestion that, if the customer puts the word "lien" into a search box, information
17 on lien rights appears on the web portal is not a reasonable response to my
18 recommendation.²¹ I agree that there is a link to a page entitled, "liens." Once accessed,
19 the page²² states:

20 Unpaid water and/or wastewater charges are a lien on the property,
21 independent of whether the service is provided to a Tenant or other Non-
22 Owner Occupants. Any account with past due charges may be sent a
23 reminder notice which shall contain notification that unpaid water and/or
24 wastewater charges are a lien against the property. The Pittsburgh Water

²¹ PWSA St. No. 6-R, fn. 24.

²² <https://www.pgh2o.com/residential-commercial-customers/account-billing-info/liens>

1 and Sewer Authority may exercise its rights to file the lien on a property
2 where a delinquent balance accumulated.

3 This information is reasonably confusing to any customer who is also directed on
4 this same page to PWSA's "rules and regulations" that emphasize the customer's rights
5 and remedies under Chapter 56 and the Commission's jurisdiction.²³ A consumer would
6 be left wondering when Chapter 56 notices and other rights and remedies required by
7 Commission jurisdiction will occur in light of this legal statement that PWSA can issue a
8 notice of lien at any time after any bill is determined to be "delinquent."

9 Q. DO ANY OF PWSA'S BILLS, ROUTINE COLLECTION NOTICES OR
10 TERMINATION NOTICES INFORM CUSTOMERS ABOUT PWSA'S LIEN RIGHTS?

11 A. No.

12 Q. PLEASE RESPOND TO MS. QUIGLEY'S REBUTTAL CONCERNING PWSA'S
13 COMPLAINT TRENDS.

14 A. Ms. Quigley's Rebuttal on this issue is primarily directed to explaining why the complaint
15 trends I noted in my testimony are not appropriately viewed as comparable to prior
16 complaint trends.²⁴ I certainly agree that the Pandemic impacts on PWSA and Commission
17 personnel may impact the timing and volume of complaints identified in this database.
18 However, my testimony was primarily directed to the BCS findings of verified complaints
19 and infractions, the findings on which are not disputed. My recommendation to require
20 PWSA to conduct a root cause analysis of these complaint trends is a reasonable response
21 to the data I presented in my Direct Testimony.

²³ <https://www.pgh2o.com/about-us/rules-regulations>

²⁴ PWSA Statement No. 6-R, at 40-42.

1 Q. WITH REGARD TO COMPLAINTS ABOUT MAKE-UP BILLS IN PARTICULAR, DO
2 YOU HAVE A RESPONSE TO MS. QUIGLEY’S REBUTTAL?

3 A. Ms. Quigley is no doubt correct that the high volume of complaints relates in part to
4 PWSA’s recent actions to collect previously incurred bad debt associated with non-
5 registering meters or zero read meters. PWSA’s long-term approach to focus on replacing
6 or repairing the malfunctioning meters is entirely correct, to resolve the underlying
7 problem. I disagree, however, with her claim that the cause of these make-up bills is not
8 related to any actions being taken today by PWSA.²⁵ While the underlying problem may
9 be due to prior actions or inactions by PWSA, the complaints themselves appear tied to
10 PWSA’s recent action to seek payment in full of the four-years of prior usage that is
11 technically allowed under Chapter 56. The volume of complaints calls into question
12 whether that policy is reasonable in light of the circumstances, particularly since Ms.
13 Quigley agrees that the failure to address this long-standing problem is due to PWSA’s
14 previous lack of sufficient resources²⁶ (and not any malfeasance by customers). A deeper
15 look into these complaints as part of the root cause analysis discussed above should give
16 PWSA pause to reform their policy in this regard.

17 Q. PLEASE RESPOND TO PWSA’S REBUTTAL WITH RESPECT TO THE
18 IMPLEMENTATION OF THE NEW STORMWATER SERVICE RATE.

19 A. Ms. Quigley rejects my proposal that certain essential customer education materials be
20 resolved “in this rate case” prior to the implementation of the new Stormwater service
21 charge. She also claims that there is no mandate that requires PWSA’s materials to be pre-

²⁵ PWSA Statement No. 6-R, at 46.

²⁶ PWSA St. No. 6-R at 47.

1 approved before new rates go into effect.²⁷ She describes ongoing internal efforts to
2 develop the bill format, web portal, and call center training and education about customer
3 calls for this new charge that will apparently be developed later this fall.²⁸ My
4 recommendation that these issues be resolved “in this rate case” was perhaps poorly
5 worded. However, since PWSA has proposed to implement the new Stormwater Charge
6 with the effective date of the new water and wastewater rates, there is little opportunity for
7 review of these crucial documents and educational materials in the testimonial or a separate
8 compliance phase of this proceeding. And I do not agree that these essential materials can
9 be dealt with in the Stage 2 proceeding since PWSA seeks to implement the Stormwater
10 Charge prior to the completion of that proceeding and prior to any workshop discussion of
11 any of these draft materials. Finally, I am not recommending that PWSA’s implementation
12 materials be “pre-approved,” but only that PWSA engage in a good faith effort to consult
13 with stakeholders on these important aspects of their new proposed Stormwater Charge.
14 Therefore, I recommend that PWSA share its drafts bills, web portal, and training materials
15 with stakeholders this fall and prior to the implementation of the new Stormwater Charge.

16 Q. MS. QUIGLEY ALSO REJECTS REPORTING KEY INDICIA OF CUSTOMER
17 SERVICE ASSOCIATED WITH THE IMPLEMENTATION OF THE NEW
18 STORMWATER SERVICE CHARGE. DO YOU AGREE?

19 A. No. Ms. Quigley offers no specific reason why this information could not be available or
20 why it could not be provided as part of the ongoing Quarterly Compliance Plan Report. By
21 claiming that reporting this information would constitute an “additional burden,”²⁹ she

²⁷ PWSA St. No. 6-R, at 58.

²⁸ PWSA St. No. 6-R at 57-58.

²⁹ PWSA St. No. 6-R at 58.

1 does not apparently recognize that the entire program is one being proposed by PWSA and
2 is likely to result (however reasonable the PWSA customer education program) in
3 increased customer confusion, more calls to the call center, and additional disputes and
4 complaints, and complications to the collection of the unpaid bills by relying on the lien
5 authority. My recommendations to track actual implementation and the impact of this
6 program on PWSA's customer service performance is reasonable and should be accepted
7 by the Commission. Again, this is not a proposal to impose penalties, but a reporting
8 requirement to assist in the tracking of customer service performance that PWSA highlights
9 throughout its testimony.

10 Q. PLEASE RESPOND TO MS. QUIGLEY'S REBUTTAL CONCERNING YOUR
11 TESTIMONY ON PWSA'S TARIFFS, PARTICULARLY THE REVISED FEES.

12 A. First, I agree that my comments on some of the fee schedules attached to her testimony did
13 not properly reflect that they were being moved from the wastewater tariff to the new
14 stormwater tariff. Second, Ms. Quigley recites a "comprehensive examination of the
15 fees,"³⁰ and that some fees were increased, and others decreased. I did not see any evidence
16 of the basis for the hourly rates and costs assigned to the fee schedule attached to her
17 testimony. In particular, PWSA did not provide any support for the number of person-
18 hours or equipment-hours needed to perform each task and did not justify rounding up the
19 calculation of each fee to the next highest \$10 which results in the proposed fees being in
20 excess of cost, even before PWSA applies an annual inflation adjustment based on the
21 Consumer Price Index.³¹ Third, regarding the provision of the PWSA tariffs that allows

³⁰ PWSA St. No. 6-R at 95.

³¹ OCA witness Scott J. Rubin addresses his concerns regarding the lack of support for PWSA's proposed dishonored check fee, specifically, in OCA Statements 4 and 4S.

1 changes in fee structure based on the Consumer Price Index, I continue to strongly object.
2 Whether this provision was originally approved in a prior rate case or not, this provision is
3 not appropriate considering a public utility's obligation to justify all its rates and fees based
4 on actual costs. Finally, I accept Ms. Quigley's explanation³² that any fee would not be
5 charged to provide the listed documents to respond to a customer complaint.

6
7 Q. PLEASE SUMMARIZE YOUR REVISED RECOMMENDATIONS FOR PWSA'S
8 CUSTOMER SERVICE PERFORMANCE AS A CONDITION OF ANY RATE
9 INCREASE.

10 A. As a result of my consideration of PWSA's Rebuttal, I offer the following slightly revised
11 recommendations to be attached to any approval of new rates in this proceeding (shown in
12 redline format compared to my Direct Testimony):

- 13 • PWSA's call center should meet the following annual performance standards:
14 average speed of answer of no more than one minute and an abandonment rate of no more
15 than 3%. If these standards are not met during any one quarter (three-month period),
16 PWSA should be required to submit a compliance plan to achieve the required minimum
17 standards by the end of the next quarter.
- 18 • PWSA should be required to meet a performance standard for restoration of outages
19 that impact 2,000 or more customers within 6 hours.
- 20 • PWSA should be required to conduct a formal root cause analysis of its rising
21 customer informal and formal complaints, as well as the increasing number of justified

³² PWSA St. No. 6-R at 99.

1 complaints and verified infractions and identify and adopt reforms to reduce this disturbing
2 trend.

3 • PWSA should issue 98% of its customer bills based on actual meter readings within
4 one year and submit a compliance plan to achieve this objective if the standard is not met
5 in a reasonable manner. and seek to reach a 99% standard within a reasonable time.

6 • PWSA should revise the bill format and presentation for customers enrolled in the
7 Bill Discount Program to clearly identify how this program reduces otherwise applicable
8 current monthly charges and respond to the confusing presentation of the customer's bill.
9 PWSA should conduct a focus group of Bill Discount Program customers to discuss the
10 presentation of this program on their bills.

11 • If PWSA is responsible for billing and collecting ALCOSAN and other water
12 provider charges, PWSA should revise its bill ~~format notice~~ about ALCOSAN ~~or other~~
13 ~~water provider~~ charges to make clear that customers should call PWSA to discuss these
14 charges and respond to any questions, dispute amounts, as well as handling payment
15 arrangements and collection activity related communications. In addition, in future rate
16 case filings PWSA should be required to inform customers that the proposed rates and bill
17 impacts do not include ALCOSAN charges for wastewater treatment. Alternatively,
18 PWSA should treat these charges as “non-utility” charges and eliminate those charges from
19 collection activities.

20 • The Commission should investigate PWSA's use of “shut off” language in notices
21 issued to customers when there is no intent to pursue a shut off or termination of service.

22 • PWSA should provide clear and conspicuous customer education about its lien
23 authority and how this relates to and impacts the timing and rights associated with its

1 Chapter 56 consumer protections.

2 • PWSA should be directed not to resume termination of service for nonpayment for
3 residential customers until PWSA implements the requirement of Chapter 56 its policies
4 are brought into compliance with Chapter 56 requirements (including the obligation to
5 attempt personal contact with the customer “immediately prior” to termination of service).
6 in the Stage 2 proceeding. Until the personal contact policy is fully resolved in the Stage 2
7 proceeding, it would be appropriate to allow PWSA to pursue termination as an exception
8 to this policy for a customer with a very high balance owed who has refused to enter a
9 payment plan based on written, verbal, or personal contact documented by PWSA.

10 • PWSA should be required to provide notice and opportunity for review and
11 comment prior to any implementation of a third-party debt collector for PWSA’s overdue
12 bills.

13 • ~~Certain tariff provisions (including fees) should be eliminated or revised based on~~
14 ~~the concerns raised in my testimony.~~ The tariff provision that allows changes in PWSA’s
15 fees and charges based on the Consumer Price Index should be eliminated. Utility fees
16 should be cost based and not allowed to be linked to an external index that does not reflect
17 the actual costs incurred by the utility. ~~Any amount of increase related to the Consumer~~
18 ~~Price Index should be rejected.~~ Further, PWSA should be required to provide more detailed
19 cost-based support for its proposed fees in its next rate case. See OCA Statement No. 4 at
20 32, particularly since there is a significant number of new proposed charges. In addition,
21 PWSA should make clear that it will not charge ~~I question whether it is appropriate to~~
22 ~~charge~~ customers ~~at all~~ for access to data in the possession of PWSA that would be required
23 to respond to a customer dispute or complaint.

1 • PWSA should be required to provide the more detailed customer education
2 materials I identified above that are associated with its proposed implementation of the
3 new stormwater charge as they are developed by PWSA this fall, in this rate case, to allow
4 adequate stakeholder review of these important aspects prior to their ~~approval or~~
5 implementation.

6 • PWSA should include new reporting information I have identified above in its
7 Quarterly Compliance Report to monitor the impact of the stormwater charge program on
8 customer service performance.

9 Q. DOES THIS COMPLETE YOUR TESTIMONY AT THIS TIME?

10 A. Yes.


BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Barbara R. Alexander, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 5SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314847

Signature: 

Barbara R. Alexander

Consultant Address: Barbara Alexander Consulting, LLC
83 Wedgewood Drive
Winthrop, Maine 04364

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	Docket No. R-2021-3024773 (Water)
	:	
	:	
	:	Docket No. R-2021-3024774 (Wastewater)
v.	:	
	:	
	:	
PITTSBURGH WATER AND SEWER AUTHORITY	:	Docket No. R-2021-3024779 (Stormwater)
	:	

SURREBUTTAL TESTIMONY

OF

TERRY L. FOUGHT

ON BEHALF OF

PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 6, 2021

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE**
2 **RECORD.**

3 A. Terry L. Fought, 780 Cardinal Drive, Harrisburg, PA 17111.

4
5 **Q. MR. FOUGHT, DID YOU SUBMIT DIRECT TESTIMONY IN THIS**
6 **PROCEEDING ON BEHALF OF THE OFFICE OF CONSUMER**
7 **ADVOCATE?**

8 A. Yes.

9
10 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

11 A. The purpose of my surrebuttal testimony is to respond to portions of the
12 rebuttal testimony by Barry King, PWSA St. No. 5-R, regarding (1) Valve
13 Maintenance; (2) Pressures and Pressure Surveys; (3) Meter Testing and
14 Replacement; (4) Flushing the Distribution system; (5) Ownership and
15 Maintenance of Customer Laterals; and (6) Surface Restoration and
16 portions of the rebuttal testimony by Julie Quigley, PWSA St. No. 6-R,
17 regarding the (1) 2020 Customer Complaint/Call Log and (2) Party Service
18 Lines.

19
20 **Isolation Valve Maintenance**

21 **Q. WHAT IS MR. KING’S POSITION ON VALVE MAINTENANCE?**

22 A. In his Rebuttal Testimony, Mr. King responded to my recommendations on
23 valve maintenance and also the recommendations made by Investigation &

1 Enforcement (I&E) witness Mr. Gray.¹ Mr. King agrees with my
2 recommendation that exercising (i.e. attempting to exercise) one fifth of the
3 valves per year is acceptable²; however, he disagreed with my
4 recommendations that: (1) PWSA should increase the number exercised if
5 it determines that too many of the valves cannot be exercised and must
6 instead be repaired or replaced and (2) PWSA should annually submit a
7 schedule to OCA and the Commission for replacing or repairing those
8 isolation valves that could not be exercised.³

9
10 **Q. WHY DID YOU RECOMMEND THAT THE RATE OF EXERCISING THE**
11 **VALVES SHOULD BE INCREASED IF TOO MANY VALVES COULD**
12 **NOT BE EXERCISED?**

13 A. It is expensive to repair or replace isolation valves since most valves are
14 located within pavement and must be uncovered even for repairs. As I
15 explained in my Direct Testimony, exercising valves is needed to prevent
16 the valves from seizing up and getting stuck from corrosion or other deposits
17 adjacent to the valve. If a high percentage of valves are not working in the
18 1/5th of the Authority's system the rate of exercising should be increased
19 because that should reduce the total number that need to be replaced or
20 repaired. While increased exercising may increase costs, it should help

¹ I&E Statement No. 4.

² PWSA St. No. 5-R, p. 3. Later, I address Mr. King's update regarding the number of valves the Authority is required to inspect and exercise.

³ PWSA St. No. 5-R, p. 4.

1 avoid greater costs to repair or replace the valves because they were not
2 exercised frequently enough.

3
4 **Q. WHY SHOULD THE AUTHORITY SUBMIT A SCHEDULE TO OCA AND**
5 **THE COMMISSION FOR REPLACING OR REPAIRING THOSE**
6 **ISOLATION VALVES THAT COULD NOT BE EXERCISED?**

7 A. To provide reasonable oversight of the Authority's program to exercise
8 valves. It is important to know how many valves need replacing or repaired
9 and the Authority's schedule for doing so.

10
11 **Q. HAVE OTHER WATER UTILITIES UNDER THE JURISDICTION OF THE**
12 **PUC SUBMITTED SIMILAR SCHEDULES FOR REPLACING OR**
13 **REPAIRING ISOLATION VALVES?**

14 A. Yes, both municipal and private water utilities.

15
16 **Q. ARE THERE OTHER ISSUES IN MR. KING'S REBUTTAL TESTIMONY**
17 **THAT CONCERN MR. GRAY'S RECOMMENDATIONS THAT YOU**
18 **WOULD LIKE TO COMMENT ON?**

19 A. Yes. Mr. King testified to the following: (1) since submission of his
20 Supplemental Direct Testimony he has learned that 6,000 of the 26,000
21 valves on the PWSA's system are privately owned and not the responsibility
22 of the PWSA⁴; (2) PWSA is reducing its internal target to exercising 4,000

⁴ PWSA St. No. 5-R, p. 3.

1 valves per year⁵; and (3) that it is not feasible for PWSA to identify which
2 valves would be needed to isolate areas serving hospitals, schools, and
3 other critical locations with valves on water mains of diameter 16-inches or
4 greater⁶. I would also like to address that, in his discussion about record
5 keeping, Mr. King did not mention what type of records the Authority is
6 presently keeping regarding exercising isolation valves.⁷

7
8 **Q. WHAT ARE YOUR COMMENTS REGARDING THE ABOVE ISSUES?**

9 A. All of the above issues indicate that the Authority needs more, not less,
10 oversight. The fact that the Authority does not know where the valves are
11 to isolate hospitals, schools and other critical areas from water outages is
12 alarming and raises significant questions about the Authority's priorities.
13 Not knowing that 6,000 isolation valves connected to the Authority's system
14 are privately owned until just before submission of his rebuttal testimony
15 indicates a lack of planning for the exercise program. Since Mr. King did
16 not indicate what the Authority's present record keeping consists of, it is
17 possible that proper records are not currently being kept for the valves being
18 exercised during 2021.

19
20 **Q. DO YOU HAVE ANY COMMENTS CONCERNING MR. KING'S**
21 **RESPONSE TO COMMISSIONER YANORA'S DIRECTED QUESTIONS?**

⁵ Ibid.

⁶ PWSA St. No. 5-R, p. 7.

⁷ Ibid.

1 A. Yes. In response to Commissioner Yanora’s Directed Questions, Mr. King
2 stated that he “described PWSA’s plans to dedicate two crews to inspecting
3 and exercising isolation valves, which would allow PWSA to inspect one-
4 fifth of its system valves each year and complete exercising all the valves
5 in the system within a five-year period. (PWSA St. No. 5 at 17)⁸
6 Mr. King did not mention record keeping in his response to Commissioner
7 Yanora.

8
9 **Q. HAVE YOU CHANGED YOUR PREVIOUS RECOMMENDATIONS**
10 **BASED ON INFORMATION PROVIDED IN MR. KING’S REBUTTAL**
11 **TESTIMONY?**

12 A. Yes. I have added a recommendation. Because the Authority just started
13 to exercise its isolation valves this year and only exercised a total of 5,048
14 of its isolation valves during the five years preceding the 2018 rate case⁹, I
15 still recommend that the Authority: (1) continue to exercise 5,000 to 5,200
16 isolation valves annually; (2) increase the rate of exercising if is determined
17 that too many of the valves cannot be exercised and must be repaired or
18 replaced and (3) annually submit a schedule to OCA and the Commission
19 for replacing or repairing those isolation valves that could not be exercised.
20 I also recommend that the Authority submit for the year 2021 a record of its
21 isolation valve exercising program identifying each valve that it attempted
22 to exercise and whether it passed or failed.

⁸ PWSA St. No. 5-R, p. 3.

⁹ OCA St. 6, p. 12.

1 **Pressures and Pressure Surveys**

2 **Q. WHAT IS MR. KING’S POSITION ON PRESSURES AND PRESSURE**
3 **SURVEYS?**

4 A. Mr. King objected to my recommendations “that the Authority should be
5 responsible for all damages to customer facilities where the normal
6 operating pressures exceeds 125 psi unless it installs a pressure reducing
7 valve approved for water supply with the applicable pressure upstream of
8 the customer’s service line. PWSA should reduce normal operating
9 pressures exceeding 125 psi in its mains in order to protect customer
10 service lines and inside plumbing. I made the same recommendations in
11 my testimony in the last two rate cases”.¹⁰

12
13 **Q. DID YOUR DIRECT TESTIMONY MISQUOTE YOUR**
14 **RECOMMENDATIONS IN THE LAST TWO RATE CASES?**

15 A. Yes. I apologize for the confusion it created. Following is my testimony
16 regarding high pressures included in the last two rate case.¹¹ I testified that
17 the Authority should either: (1) provide pressure reducing valves approved
18 for water supply with the applicable pressure to all customers having a
19 normal pressure exceeding 125 psi, or (2) reduce the applicable mains’
20 pressures to less than 125 psi.

21

¹⁰ PWSA St. No. 5-R, p. 8.

¹¹ Docket No. R-2018-3002645 & R-2020-3017951

1 **Q. WHAT IS MR. KING’S POSITION ON THE SUBSTANCE OF YOUR**
2 **RECOMMENDATIONS REGARDING PRESSURES AND PRESSURE**
3 **SURVEYS?**

4 A. In his Rebuttal Testimony, Mr. King testified that (1) 52 Pa. Code
5 § 65.6 (Pressures) permits normal operating procedures that exceed 125
6 psi if it is necessary to provide adequate service to any customer or called
7 for by good engineering practice; (2) the Authority’s tariff requires PWSA to
8 maintain service at historic pressures at the main; (3) the Authority’s tariff
9 requires the pressure regulator installed on the outlet side of the meter; (4)
10 when the pressure to a building exceeds 80 psi, the Allegheny County Code
11 requires an approved water pressure regulator with strainer be installed to
12 reduce the pressure to the building; (5) the Commission does not have the
13 statutory authority to require a utility to pay a customer damages; and (6)
14 mandating that PWSA pay for damages to customers’ facilities would
15 require funds that are not available.

16
17 **Q. WHAT ARE YOUR RESPONSES TO MR. KING’S POSITIONS?**

18 A. My responses, in the order of Mr. King’s testimony are: (1) the Authority has
19 not provided any data to show that, for every customer subject to normal
20 operating pressures greater than 125 psi, the higher pressure is necessary
21 to provide adequate service to other customers or is good engineering
22 practice; (2) as discussed in my Direct Testimony, DEP is requiring the
23 Authority to modify its historic pressures at the main; (3) & (4) where normal

1 operating pressures exceed 125 psi, the Authority could install a vault on
2 the Authority's portion of the service line containing the meter and a
3 pressure reducing valve (prv) that would protect the customer's service
4 line¹²; (5) agreed; and (6) given that only a small percentage of PWSA's
5 customers are subject to pressures higher than the range allowed by the
6 Commission's regulations, it seems more reasonable for PWSA to install
7 pressure reducing valves so that it can avoid causing damages.

8
9 **Meter Testing and Replacement**

10 **Q. WHAT IS MR. KING'S POSITION ON METER TESTING AND**
11 **REPLACEMENT?**

12 A. Mr. King position is (1) the Authority has reduced its goal of replacing 10,000
13 meters for the calendar year 2021 to 8,000 meters and (2) the Authority
14 intends to replace 8,000 meter replacements in subsequent years.¹³

15
16 **Q. DO YOU AGREE WITH MR. KING'S POSITION?**

17 A. No. The Authority should maintain its goal of replacing 10,000 meters per
18 year in 2021 and subsequent years. Although the COVID-19 pandemic has
19 caused difficulties in meeting that goal in 2020 and 2021, the original reason
20 for setting a goal of 10,000 meters per year has not changed.

21

¹² In addition the customer's prv protecting the inside plumbing.

¹³ PWSA St. No. 5-R, p. 10.

1 PWSA has over 80,000 installed meters and at the time of the 2018
2 compliance plan (stage 1) case, the Authority estimated that approximately
3 50,000 of its small meters (1-inch diameter or smaller) exceeded 20 years
4 without being tested or replaced.¹⁴ In the Settlement of that case, PWSA
5 stated its intent to replace all of these small meters and committed to “make
6 its best efforts to complete the replacement of small meters within 5-7
7 years.”¹⁵ That timeframe remains a reasonable goal for complying with the
8 Commission’s meter testing requirements. If problems related to the
9 pandemic mean that PWSA does not meet its goal, that is reasonable. But
10 the goal itself should not be changed.

11
12 **Flushing Distribution System**

13 **Q. WHAT IS MR. KING’S POSITION ON FLUSHING THE DISTRIBUTION**
14 **SYSTEM?**

15 A. Mr. King’s position is (1) the Authority is on track to inspect hydrants and
16 flush 1/3 of the distribution system in 2021 and annually thereafter and (2)
17 will address any future recommendation by OCA at the appropriate time¹⁶.

18
19 **Q. DO YOU AGREE WITH MR. KING’S POSITION?**

20 A. Yes.

21

¹⁴ PWSA St. C-1R, Docket Nos. M-2018-2640802, M-2018-2640803, pp. 26-27

¹⁵ Partial Settlement, Docket Nos. M-2018-2640802, M-2018-2640803, ¶III.J.3.c

¹⁶ PWSA St. No. 5-R, p. 11.

1 **Ownership and Maintenance of Customer Laterals**

2 **Q. WHAT IS MR. KING’S POSITION ON THE OWNERSHIP AND**
3 **MAINTENANCE OF CUSTOMERS SEWER LATERALS?**

4 A. Upon final direction from the Commission at Docket No. L-2020-3019521
5 and so long as consistent with the Commission’s direction, PWSA will
6 establish a plan for repair and replacement of privately owned damaged
7 sewer laterals within the public right-of-way at PWSA’s expense for
8 inclusion in an Act 120 plan to be filed with the Commission for approval.

9
10 **Q. DO YOU AGREE WITH MR. KING’S POSITION?**

11 A. Yes, in part. I agree that it is reasonable if these types of laterals are eligible
12 for inclusion in PWSA’s Act 120 plan. Because it is not known when the
13 Commission will provide final direction in Docket No. L-2020-3019521, that
14 may not resolve the issue or may not resolve it for an extended period of
15 time. For that reason, PWSA should also repair and replace privately
16 owned damaged sewer laterals within the public right-of-way at the
17 Authority’s expense as part of its scheduled main replacement projects.

18
19 **Surface Restoration**

20 **Q. WHAT IS MR. KING’S POSITION ON SURFACE RESTORATION?**

21 A. Mr. King agreed with my recommendations about surface restoration cost
22 sharing with the City for Authority’s projects that include full lane or curb to

1 curb paving.¹⁷ He noted that in addition to the projects noted in my
2 testimony¹⁸, the Authority cannot always coordinate with other entities on
3 projects ordered by the Commission, such as the small diameter mains
4 replacement to address lead priority issues.¹⁹ He also discussed the
5 coordination between the Authority and other parties and how it can
6 minimize surface restorations costs.

7
8 **Q. DOES MR. KING'S REBUTTAL TESTIMONY ELIMINATE YOUR**
9 **CONCERNS ABOUT THE AUTHORITY AND THE CITY'S COST**
10 **SHARING OF SURFACE RESTORATION?**

11 A. Not entirely. In response to OCA-IX-34²⁰, Mr. King stated that the
12 coordination procedure between the Authority and the City consists of the
13 Authority advising the City not to pave in areas where the Authority has
14 planned projects for the next three years. See Exhibit TLF-9. That
15 procedure is backwards.

16
17 **Q. WHAT PROCEDURE DO YOU RECOMMEND?**

18 A. I recommend that the City first advise the Authority when and where it has
19 planned resurfacing projects. The Authority should then determine if any
20 of the water and sewer lines could reasonably be replaced in those areas

¹⁷ PWSA St. No. 5-R, pp. 13-14.

¹⁸ Projects that are an emergency or part of a Department of Environmental Protection (DEP) or Environmental Protection Agency (EPA) deadline.

¹⁹ PWSA St. No. 5-R, p. 14.

²⁰ Docket No. R-2020-3017951.

1 due to age, pipe material, etc. prior to the next time that area may be
2 resurfaced. The Authority then can decide if it should participate in the
3 City's resurfacing project depending upon the City's proposed cost
4 sharing. The Authority has spent over \$21,000,000 for surface
5 restoration of its 2019-20 projects without any City contribution. Delaying
6 projects that require surface restoration (that are not emergency repairs or
7 subject to a DEP, EPA or Commission deadline) would help to provide
8 funding for other critical items, like determining which isolation valves to
9 open/shut to isolate hospitals, schools and other critical areas from nearby
10 water line breaks.

11
12 **2020 Customer Complaint/Call Log**

13 **Q. WHAT IS MS. QUIGLEY'S POSITION ON THE 2020 CUSTOMER**
14 **COMPLAINT/CALL LOG?**

15 A. On pages 38 and 39 of her rebuttal testimony, Ms. Quiglely testified that:
16 (1) since the last rate case, the Authority has installed a SpryMobile-Work
17 Orders and Asset Management (SpryMobile) computer system that enables
18 Field Operations staff to input work orders and track corrective and
19 preventive maintenance on water and sewer assets; (2) the SpryMobile
20 system presently records complaints regarding pressure, no water, high
21 consumption, previously unbilled consumption in customer account notes
22 that are not easily accessible for reporting purposes; (3) complaints like

1 those concerning billing are not easily classified to a particular system²¹; (4)
2 the Authority will work with its vendor to report missing complaints and (5)
3 in regard to items such as “investigate lid”, the Authority will make every
4 effort to correctly classify according to the correct system.

5
6 **Q. DO YOU HAVE ANY COMMENTS CONCERNING MS. QUIGLEY’S**
7 **REBUTTAL TESTIMONY?**

8 A. Yes. I appreciate that PWSA will make the changes I recommended to
9 improve the complaint log. Complaints concerning billing and other
10 complaints that are not system²² specific can be classified and reported as
11 “Billing” or “Other.”

12
13 **Party Lines**

14 **Q. WHAT IS MS. QUIGLEY’S POSITION ON PARTY LINES?**

15 A. On pages 94 and 95 of her rebuttal testimony, Ms. Quigley testified that: (1)
16 existing party-line water customers will not be responsible for costs all the
17 way to the water main when a party-line is replaced²³ and (2) the final tariff
18 submitted for approval of the Commission will make clear that the residential
19 permit fee does not apply to the conversion of party lines.

20

²¹ Water, Wastewater, and Stormwater systems.

²² Ibid.

²³ Part III, Section A.13, Third Revised Page No. 36 of the Water Tariff.

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9

Q. DO YOU AGREE WITH MS. QUIGLEY'S POSITION?

A. Yes. My agreement with (2) is based on my understanding that PWSA will not apply its proposed new Residential Permit Fee set forth in Part I, Section H.5.b to water or sewer party line conversions.

Q. DOES THIS COMPLETE YOUR WRITTEN SURREBUTTAL TESTIMONY?

A. Yes, at this time. I reserve the right to supplement this testimony either in writing or orally if additional relevant information is received.

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

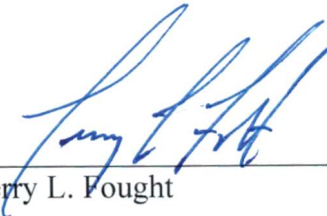
Pennsylvania Public Utility Commission	:	Docket Nos. R-2021-3024773 (Water)
	:	C-2021-3025473 (Water)
v.	:	R-2021-3024774 (Wastewater)
	:	C-2021-3025471 (Wastewater)
	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Terry L. Fought, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 6SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314848

Signature:



Terry L. Fought

Consultant Address: 780 Cardinal Drive
Harrisburg, PA 17111

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY COMMISSION	:	Docket No. R-2021-3024773 (Water)
	:	
	:	
	:	Docket No. R-2021-3024774 (Wastewater)
v.	:	
	:	
	:	Docket No. R-2021-3024779 (Stormwater)
PITTSBURGH WATER AND SEWER AUTHORITY	:	

SURREBUTTAL TESTIMONY
OF
MORGAN N. DEANGELO

ON BEHALF OF
PENNSYLVANIA OFFICE OF CONSUMER ADVOCATE

AUGUST 6, 2021

1 **Introduction:**

2

3 **Q. Please state your name, business address and occupation.**

4 A. My name is Morgan N. DeAngelo. My business address is 555 Walnut Street, Forum
5 Place, 5th Floor, Harrisburg, Pennsylvania 17101. I am currently employed as a Regulatory
6 Analyst by the Pennsylvania Office of Consumer Advocate (OCA).

7

8 **Q. Have you previously provided testimony in this case?**

9 A. Yes. I provided direct testimony in this case on July 8, 2021, in OCA Statement 7.

10

11 **Q. What is the purpose of your surrebuttal testimony?**

12 A. In my surrebuttal testimony, I will comment on the rebuttal testimony of Pittsburgh Water
13 and Sewer Authority (“PWSA” or “the Company”) witness William J. Pickering (PWSA
14 Rebuttal Testimony Statement No. 1-R), which responds to issues discussed in my direct
15 testimony.

16

17 **Q. Please summarize your direct testimony.**

18 A. My direct testimony discusses details regarding the impacts the ongoing COVID-19
19 Pandemic has had, and continues to have on Pennsylvania, and how it is important to
20 consider the interests of consumers and the impacts they have faced and will continue to
21 face.

22

23 **Response to PWSA’s Rebuttal Testimony:**

24

25 **Q. Please summarize Mr. Pickering’s rebuttal testimony regarding your direct**
26 **testimony.**

27 A. Mr. Pickering states in his rebuttal testimony that he does not refute any of the statistics
28 provided in my direct testimony. However, he goes on to say the data provided is not
29 specific to PWSA’s service territory or customers, and that the unemployment rate for
30 Allegheny County is lower than the unemployment rate for the United States. (PWSA
31 Statement 1-R at 13). Mr. Pickering also states PWSA was not terminating residential

1 customers for non-payment during the time period the data was collected. (PWSA
2 Statement 1-R at 13). He then concludes by stating he does not believe that any of the data
3 demonstrates the need for the Commission to consider ongoing effects of COVID-19 in
4 deciding on the proposed rate increase. (PWSA Statement 1-R at 13).

5
6 **Q. Do you agree with Mr. Pickering that the data in your direct testimony does not**
7 **demonstrate the need for the Commission to consider the ongoing effects of COVID-**
8 **19 in this proceeding?**

9 A. No. In my direct testimony I provided valuable data and statistics as to the ongoing impacts
10 of the COVID-19 Pandemic on Pennsylvania's economy and on the citizens of
11 Pennsylvania. While, as Mr. Pickering notes, the data and resources I discussed are not
12 limited specifically to PWSA's service territory or customers, (PWSA Statement 1-R at
13 13), the information provides the most accurate demonstration of the effects of the
14 Pandemic on Pennsylvania's citizens, including PWSA's customers. COVID-19 data
15 specific to PWSA's territory and its customers does not exist. Mr. Pickering suggests that
16 because the information is not tailored to PWSA's service territory or its customers, the
17 Commission should not consider the statewide data in analyzing the impacts of COVID-
18 19 on PWSA's customers. (PWSA Statement 1-R at 13). I disagree with this. Statewide
19 data is better than no data. Therefore, the Commission should thoroughly consider the
20 information I discussed in my direct testimony related to COVID-19 impacts when making
21 its determination on the proposed rate increase.

22
23 **Q. Mr. Pickering refers to your direct testimony stating Allegheny County had an**
24 **unemployment rate of 5.7% in June 2021, which is below the United States'**
25 **unemployment rate of 5.9%. How do you respond?**

26 A. While the unemployment rate for Allegheny County in June 2021 was lower than the
27 United States' June 2021 unemployment rate, Allegheny County, Pennsylvania, and the
28 United States have unemployment rates higher than pre-Pandemic rates in January 2020.¹

¹ Unemployment Rates in Jan. 2020 – PA: 4.8%, US: 3.6%, Allegheny Co.: 4.7%. June 2021 – PA: 6.9%,
US: 5.9%, Allegheny Co.: 5.7%.

1 The U.S. Bureau of Labor Statistics (BLS) released an article in December 2020,
2 “Employment Recovery in the Wake of the COVID-19 Pandemic”² where it states that
3 employment may not fully recover until the Pandemic subsides. However, we do not know
4 when that will be. A more recent article, also released by the BLS, in February 2021,
5 “Employment Projections in a Pandemic Environment”³ shares that, in light of the still-
6 evolving health crisis, there is a lot of uncertainty over the next decade as a result of the
7 Pandemic. With that being said, it is reasonable to assume PWSA customers are still
8 experiencing negative impacts the Pandemic continues to bring forth. For these reasons
9 and reasons I explained in direct testimony, the Commission should consider the effects of
10 the Pandemic on PWSA’s customers in setting PWSA’s rates for service.
11

12 **Conclusion:**

13
14 **Q. Does this conclude your surrebuttal testimony at this time?**

15 **A.** Yes, it does. I reserve the right to modify or supplement my testimony if necessary.
16

² <https://www.bls.gov/opub/mlr/2020/article/employment-recovery.htm>

³ <https://www.bls.gov/opub/mlr/2021/article/employment-projections-in-a-pandemic-environment.htm>

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	:	R-2021-3024779 (Stormwater)
Pittsburgh Water and Sewer Authority	:	C-2021-3025474 (Stormwater)

VERIFICATION

I, Morgan N. DeAngelo, hereby state that the facts set forth in my Surrebuttal Testimony, OCA Statement 7SR, are true and correct (or are true and correct to the best of my knowledge, information, and belief) and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

DATED: August 6, 2021
*314849

Signature: Morgan N. DeAngelo
Morgan N. DeAngelo

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