



September 7, 2021

**VIA E-File**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
400 North Street, Filing Room  
Harrisburg, PA 17120

**Re: PA Public Utility Commission v. Pittsburgh Water and Sewer Authority**  
*Docket Nos. R-2021-3024773, R-2021-3024774, R-2021-3024779*

Dear Secretary Chiavetta,

In accordance with 52 Pa. Code § 5.412a and the Post-Hearing Order and Errata entered August 17, 2021 and August 18, 2021, attached hereto, please accept for filing **Pittsburgh United St. No. 2 - Direct Testimony of Michele C. Adams, with Appendices A and B** that was duly admitted into the record at the hearing held in the above-captioned proceeding on August 13, 2021, before Administrative Law Judge Eranda Vero.

A copy of this letter is being served on ALJ Vero and the parties of record consistent with the attached Certificate of Service. Please contact me with any questions or concerns.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Ria M. Pereira".

Ria M. Pereira, Esq.  
*Counsel for Pittsburgh United*

CC: Certificate of Service (Cover Letter/ COS only)  
Honorable Eranda Vero (Cover Letter/ COS only)  
Pamela McNeal, [pmcneal@pa.gov](mailto:pmcneal@pa.gov) (Cover Letter/ COS only)

Enclosures.

**BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION**

<b>Pennsylvania Public Utility Commission</b>	:	
	:	
v.	:	<b>Docket Nos. R-2021-3024773</b>
	:	<b>R-2021-3024774</b>
<b>Pittsburgh Water and Sewer Authority</b>	:	<b>R-2021-3024779</b>
	:	

**Certificate of Service**

I hereby certify I have on this day served copies of **Compliance Filing, 52 Pa. Code § 5.412a, Pittsburgh United Statement 2**, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a party) and consistent with the Commission’s Emergency Order issued on March 20, 2020, in the manner and upon the persons listed below.

**VIA EMAIL ONLY**

<p>Daniel Clearfield, Esq.                  Deanne M. O'Dell, Esq.                  Karen Moury, Esq.                  Lauren M. Burge, Esquire                  Sarah Stoner, Esq.                  Eckert Seamans Cherin &amp; Mellott, LLC                  213 Market Street, 8<sup>th</sup> Floor                  Harrisburg, PA 17101  <a href="mailto:dodell@eckertseamans.com">dodell@eckertseamans.com</a>  <a href="mailto:dclearfield@eckertseamans.com">dclearfield@eckertseamans.com</a>  <a href="mailto:kmoury@eckertseamans.com">kmoury@eckertseamans.com</a>  <a href="mailto:lburge@eckertseamans.com">lburge@eckertseamans.com</a>  <a href="mailto:SStoner@eckertseamans.com">SStoner@eckertseamans.com</a></p>	<p>Teresa Reed Wagner                  Erin Fure, Esq.                  Office of Small Business Advocate                  Forum Place                  555 Walnut Street, 1st Floor                  Harrisburg, PA 17101  <a href="mailto:tereswagne@pa.gov">tereswagne@pa.gov</a>  <a href="mailto:efure@pa.gov">efure@pa.gov</a></p>
<p>Gina L. Miller, Esq.                  Bureau of Investigation and Enforcement                  Commonwealth Keystone Building                  400 North Street, 2<sup>nd</sup> Floor                  Harrisburg, PA 17120  <a href="mailto:ginmiller@pa.gov">ginmiller@pa.gov</a></p>	<p>Christine M. Hoover, Esq.                  Erin L. Gannon, Esq.                  Lauren E. Guerra, Esq.                  Office of Consumer Advocate                  555 Walnut Street 5th Floor, Forum Place                  Harrisburg, PA 17101    <a href="mailto:choover@paoca.org">choover@paoca.org</a>  <a href="mailto:lguerra@paoca.org">lguerra@paoca.org</a>  <a href="mailto:egannon@paoca.org">egannon@paoca.org</a>  <a href="mailto:OCAPWSA2021@paoca.org">OCAPWSA2021@paoca.org</a></p>

<p>Yvonne Hilton, Esq.  John F. Doherty, Esq.  Lawrence H. Baumiller, Esq.  City of Pittsburgh Department of Law  313 City-County Building  414 Grant Street  Pittsburgh, PA 15219  <a href="mailto:yvonne.hilton@pittsburghpa.gov">yvonne.hilton@pittsburghpa.gov</a>  <a href="mailto:john.doherty@pittsburghpa.gov">john.doherty@pittsburghpa.gov</a>  <a href="mailto:lawrence.baumiller@pittsburghpa.gov">lawrence.baumiller@pittsburghpa.gov</a></p>	<p>Whitney E. Snyder, Esq.  Kevin J. McKeon, Esq.  Thomas J. Sniscak, Esq.  Hawke McKeon and Sniscak, LLP  100 N. 10th Street  Harrisburg, PA 17101  <a href="mailto:wesnyder@hmslegal.com">wesnyder@hmslegal.com</a>  <a href="mailto:kjmckeon@hmslegal.com">kjmckeon@hmslegal.com</a>  <a href="mailto:tjsniscak@hmslegal.com">tjsniscak@hmslegal.com</a></p>
<p>Peter J. DeMarco, Esq.  Natural Resources Defense Council  1152 15th Street NW, Ste. 300  Washington, DC 20005  Telephone: 202-289-2385  <a href="mailto:pdemarco@nrdc.org">pdemarco@nrdc.org</a></p>	<p>Jared J. Thompson, Esq.  Natural Resources Defense Council  1152 15th Street NW, Ste. 300  Washington, DC 20005  Telephone: (202) 513-6249  <a href="mailto:jared.thompson@nrdc.org">jared.thompson@nrdc.org</a></p>
<p>Brian Kalcic  Excel Consulting  225 S. Meramec Avenue, Suite 720T  St. Louis, MO 63105  <a href="mailto:excel.consulting@sbcglobal.net">excel.consulting@sbcglobal.net</a></p>	<p>Administrative Law Judge Eranda Vero  801 Market Street  Suite 4063  Philadelphia, PA 19107  <a href="mailto:evero@pa.gov">evero@pa.gov</a>  cc: Pamela McNeal, <a href="mailto:pmcneal@pa.gov">pmcneal@pa.gov</a></p>

Respectfully submitted,  
**PENNSYLVANIA UTILITY LAW PROJECT**  
*Counsel for Pittsburgh United*



Ria M. Pereira, PA ID 316771  
118 Locust Street, Harrisburg, PA 17101  
717-236-9486 / [pulp@pautilitylawproject.org](mailto:pulp@pautilitylawproject.org)

Date: September 7, 2021

**BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION**

<b>Pennsylvania Public Utility Commission</b>	:	
	:	
<b>v.</b>	:	<b>Docket Nos. R-2021-3024773</b>
	:	<b>R-2021-3024774</b>
<b>Pittsburgh Water and Sewer Authority</b>	:	<b>R-2021-3024779</b>
	:	

DIRECT TESTIMONY OF MICHELE C.W. ADAMS

ON BEHALF OF

PITTSBURGH UNITED

July 8, 2021

**Topic Addressed:**

Stormwater

1                   **PREPARED DIRECT TESTIMONY OF MICHELE C.W. ADAMS**

2   **I.     Introduction**

3   **Q:     Please state your name, occupation, and business address.**

4   A:     Michele C.W. Adams. I am a licensed professional engineer in Pennsylvania, Delaware,  
5   Maryland, New York, and Virginia, and a LEED Accredited Professional.<sup>1</sup> I am Founder and  
6   Principal of Meliora Design, 259 Morgan Street, Phoenixville, PA, 19460.

7   **Q:     Briefly outline your education and professional background.**

8   A:     I received a B.S. in Civil Engineering from The Pennsylvania State University in 1984.  
9   For over 30 years, my work has encompassed environmentally sensitive site design and  
10   sustainable water resources engineering. With a focus on sustainability and regenerative design,  
11   my work includes both planning and engineering design for cities, urban and suburban  
12   restoration projects, campuses, research facilities, commercial, industrial and residential  
13   installations, parks, recreation centers, public facilities, non-profit headquarters, and  
14   environmental education centers. In all my work, I seek to combine sound engineering science  
15   with an understanding of natural systems. I have been a guest lecturer at Drexel University, The  
16   Pennsylvania State University, Philadelphia University, Temple University, and the University  
17   of Pennsylvania.

18   **Q:     Please describe your professional experience related to stormwater, green  
19   infrastructure, and gray infrastructure.**

20   A:     I have been designing low impact development and green infrastructure projects for  
21   nearly three decades, with successful installations of rain gardens, porous pavements, green  
22   roofs, and restorative landscapes dating back to the mid-1980s. I have extensive built experience

---

<sup>1</sup> LEED (Leadership in Energy and Environmental Design) is a widely used green building rating system developed by the U.S. Green Building Council. See <https://www.usgbc.org/help/what-leed>.

1 in virtually every type of “best management practice,” from bioretention and streetscape  
2 landscape measures, to water harvesting and reuse, to retrofitting traditional detention basins in  
3 the suburban environment to promote infiltration and evapotranspiration. Many of my projects  
4 encompass a holistic approach to water management and ecological restoration, recognizing that  
5 water in all its forms is a resource, and that a system approach to site design often leads to the  
6 most sustainable and cost-effective design. I have provided engineering design for multiple  
7 LEED certified projects, including several LEED Platinum and SITES pilot projects.<sup>2</sup>

8 I was one of the principal authors of the Pennsylvania Stormwater Best Management  
9 Practices Manual and the award-winning New York City Department of Parks and Recreation  
10 High Performance Landscape Guidelines, as well as several other stormwater and low impact  
11 development (LID) manuals throughout the country. I serve on the U.S. Green Building  
12 Council’s Technical Advisory Group for Sustainable Sites, working to develop the Rainwater  
13 Management credits for LEED V4 and V4.1, and I serve on American Rivers’ Science and  
14 Technical Advisory Committee. In 2011, I coauthored with Donald Watson *Design for Flooding:  
15 Architecture, Landscape, and Urban Design for Resilience to Climate Change* (Wiley  
16 Publishing), which presents best practices and lessons to create buildings and communities that  
17 are more resilient in the face of climate change.

18 In Pittsburgh, I was involved in the development of the Panther Hollow Green  
19 Infrastructure Plan and the design of pilot projects for Panther Hollow. I also worked on the  
20 concept design of green infrastructure for the Allegheny River Waterfront. A lengthier

---

<sup>2</sup> SITES is a comprehensive rating system designed to distinguish sustainable landscapes, measure their performance, and elevate their value, which is administered by Green Business Certification Inc. [See https://www.sustainablesites.org/](https://www.sustainablesites.org/).

1 description of my professional experience and projects related to stormwater and green  
2 infrastructure is included in my CV, which is attached as Attachment A.

3 **Q: Have you testified in any proceeding before the Pennsylvania PUC?**

4 A: No.

5 **Q: Have you testified in any other regulatory or court proceedings on utility rate  
6 related matters, stormwater matters, or green infrastructure matters?**

7 A: Yes, I have provided testimony and expert comment on issues related to stormwater  
8 management, water quality, stream health, and flooding in multiple matters in state and federal  
9 courts, before the Pennsylvania Environmental Hearing Board, and before local zoning hearing  
10 boards. I have also submitted expert comments on issues related to stormwater management,  
11 permitting, regulatory compliance, water quality, stream health, and flooding in various  
12 legislative and regulatory proceedings. I have not previously testified in any utility rate-related  
13 matters.

14 A list of my prior testimony and expert comment engagements since 2010 is provided in  
15 my CV, attached here as Attachment A. I have previously participated in one matter that relates  
16 to stormwater in Pittsburgh:

- 17 • Citizens for Pennsylvania's Future v. PWSA, et al., Case No. 2:12-cv-943-RCM  
18 (W.D. Pa.): Provided technical expertise and testimony related to PWSA's stormwater  
19 management ordinance enforcement or lack thereof related to Buncher Development.

20 **Q: For whom are you testifying in this proceeding?**

21 A: Pittsburgh UNITED.

1 **Q: What is the purpose of your testimony?**

2 A: Pittsburgh UNITED intervened in this proceeding in part to ensure that PWSA's  
3 proposed stormwater tariff assures that all Pittsburgh residents, especially low income  
4 consumers, will receive safe, affordable stormwater services at just and reasonable rates and that  
5 PWSA's proposed stormwater tariff will utilize ratepayer funds reasonably. Accordingly,  
6 Pittsburgh UNITED asked me to evaluate the design and implementation of PWSA's proposed  
7 stormwater tariff, including whether the rate design is just and reasonable and whether the  
8 proposed uses of ratepayer funds will ensure safe, affordable stormwater services for all  
9 customers.

10 **Q: How is your testimony organized?**

11 A: First, my testimony addresses issues related to PWSA's stormwater master plan and its  
12 broader processes for planning, selecting, and prioritizing stormwater projects and investments.

13 Next, my testimony addresses various issues related to PWSA's proposed stormwater  
14 tariff and rate structure. These include issues related to PWSA's proposals for: stormwater units  
15 of service (equivalent residential units, or ERUs, of impervious area); a stormwater gradualism  
16 adjustment; addressing stormwater that enters PWSA's system from adjoining municipalities; a  
17 Bill Discount Program for stormwater customers; public education and outreach regarding its  
18 proposed stormwater tariff; and a stormwater credit program.

19 I close by summarizing my conclusions and recommendations.

20 **Q: Why are your conclusions relevant to this rate proceeding?**

21 A: I am advised by counsel for Pittsburgh UNITED that the Commission is considering "the  
22 lawfulness, justness, and reasonableness of the rates, rules, and regulations" in PWSA's



1 proposed stormwater tariff.<sup>3</sup> I also understand that PWSA is required to “furnish and maintain  
2 adequate, efficient, safe, and reasonable service and facilities,”<sup>4</sup> and that the Commission may  
3 reject a rate increase if PWSA’s service is “inadequate in that it fails to meet quantity or quality  
4 for the type of service provided.”<sup>5</sup>

5 My conclusions relate to the justness and reasonableness of PWSA’s proposed rates and  
6 to the reasonableness of how PWSA plans to spend millions of dollars in ratepayer funds. In its  
7 rate filings, PWSA proposes to recover \$36.7 million annually from ratepayers for stormwater  
8 costs of service, with about  $\frac{2}{3}$  of this sum recovered through the stormwater tariff and \$12.4  
9 million recovered through PWSA’s simultaneously proposed wastewater tariff.<sup>6</sup> In addition, in  
10 fiscal years 2021 through 2025, PWSA plans to spend about \$95.9 million on capital  
11 improvements to its stormwater system.<sup>7</sup> Although many of these capital improvements are  
12 funded through debt, PWSA’s projected revenue requirements—and resulting proposed rates—  
13 are based on the revenues PWSA says it needs to fund PWSA’s capital and operating budgets  
14 and maintain its financial metrics.<sup>8</sup> The overall effectiveness of PWSA’s stormwater system also  
15 has a direct bearing on whether customers are receiving adequate, efficient, safe, and reasonable  
16 stormwater services that alleviate sewage backups and flooding and contribute to improving  
17 local surface water quality.

---

<sup>3</sup> Order, Docket No. R-2021-3024779, at 4 (May 20, 2021).

<sup>4</sup> 66 Pa. C.S. § 1501.

<sup>5</sup> *Id.* § 526(a).

<sup>6</sup> PWSA St. 4, at 43:23-25, 44:20 – 45:7.

<sup>7</sup> PWSA St. 2, Exh. EB-5, at 5.

<sup>8</sup> PWSA St. 2, at 32:3-5; PWSA St. 4, Exh. HJS-1SW.

1 **II. PWSA's Stormwater Planning**

2 **Q: Why are PWSA's stormwater system plans and capital improvement plans relevant**  
3 **to the evaluation of PWSA's proposed stormwater rates?**

4 A: PWSA's stormwater rates are based in part on its projected stormwater revenue  
5 requirements and costs of service, which are derived from PWSA's plans for operating,  
6 maintaining, and improving its stormwater system. To determine whether stormwater rates are  
7 just and reasonable, it is important to consider how the ratepayer funds will be spent and whether  
8 the proposed uses of ratepayer funds are just and reasonable.

9 **Q: What is your understanding of PWSA's Stormwater Master Plan?**

10 A: Earlier this year, PWSA selected a consultant team, led by The Water Center at Penn and  
11 PennPraxis, to develop a comprehensive stormwater master plan.<sup>9</sup> My understanding of the  
12 intended purpose of the stormwater master plan is consistent with the following description  
13 provided by PWSA's witness Mr. Igwe:

14 The Plan will become PWSA's fundamental resource for guiding decisions  
15 regarding stormwater management and the use of green infrastructure in the most cost-  
16 effective manner for the next five years and beyond to improve water quality, alleviate  
17 flooding, reduce basement backups, create jobs, and beautify neighborhoods for safer and  
18 more resilient communities.

19 Additionally, the master plan will provide guidance for the short and long term,  
20 by identifying priorities and milestones to implement within the next five years which  
21 will likely impact the stormwater revenue requirement and how the proposed stormwater  
22 fee will be used to fund stormwater management, pending consent decree with the

---

<sup>9</sup> PWSA St. 7, at 28:3-11; Appendix B, 11, OCA-II-76.

1 Environmental Protection Agency (EPA), and other regulatory mandates. It will also  
2 include a long-term outlook with milestones for the next 25 years that will help to  
3 consider the effects of climate change. These solutions will protect our ratepayers from  
4 the impacts of stormwater while providing greater sustainability and improved resiliency  
5 throughout Pittsburgh.<sup>10</sup>

6 The final stormwater master plan and recommendations are scheduled to be completed in the  
7 summer of 2022.<sup>11</sup>

8 **Q: What are your general reactions to PWSA’s stormwater master plan?**

9 A: Overall, I strongly support PWSA’s development of a stormwater master plan and  
10 PWSA’s selection of its consultant team for this process. Developing a stormwater master plan  
11 for Pittsburgh is a good idea.

12 **Q: Do you have any concerns about PWSA’s stormwater master plan?**

13 A: Yes, I have three concerns, regarding the timing for the stormwater master plan, public  
14 involvement in the planning process, and the degree to which the stormwater master plan will  
15 help to ensure that low income communities benefit from PWSA’s stormwater system  
16 improvements.

17 **Q: What is your concern about the timing for PWSA’s stormwater master plan?**

18 A: It seems out of sequence for PWSA to propose stormwater rates before the stormwater  
19 master plan is in place, particularly in light of PWSA’s statement that the master plan “will likely  
20 impact the stormwater revenue requirement.”<sup>12</sup> Given the intended connection between the  
21 stormwater master plan, PWSA’s stormwater revenue requirements, and the resulting stormwater

---

<sup>10</sup> Appendix B, 11, OCA-II-76.

<sup>11</sup> Appendix B, 11, OCA-II-76.

<sup>12</sup> Appendix B, 11, OCA-II-76.

1 rates, it would be preferable for the stormwater master plan to be complete and available to  
2 inform the analysis of whether PWSA’s proposed stormwater rates are just and reasonable. At a  
3 minimum, PWSA’s stormwater master plan should be reviewed as a part of any future  
4 stormwater rate cases and compliance plan proceedings, to ensure that PWSA has sound plans  
5 for operating, maintaining, and improving its stormwater system and to ensure that PWSA  
6 clearly connects future proposed stormwater revenue requirements and stormwater rates to the  
7 needs and activities addressed in its stormwater master plan.

8 **Q: What is your concern about public involvement in the stormwater master plan?**

9 A: Although PWSA intends to conduct various forms of public education and outreach  
10 regarding the stormwater tariff,<sup>13</sup> until recently I was not aware of plans for public input  
11 opportunities during the development of PWSA’s stormwater master plan. I understand that the  
12 consultant team leading the master planning process will prepare a Stakeholder Engagement  
13 Plan, which will facilitate stakeholder input throughout the planning process from a wide variety  
14 of stakeholders.<sup>14</sup> I strongly support that approach. Input from stormwater customers, community  
15 organizations, and other interested parties will be essential to ensuring that the stormwater master  
16 plan identifies and addresses the full range of stormwater-related issues in PWSA’s service area.  
17 To be maximally effective, public input should be collected iteratively throughout the planning  
18 process, not just at the beginning or end of the process, and through a variety of formats (such as,  
19 but not limited to, public meetings, community workshops, targeted presentations to and  
20 conversations with affected communities, written comment opportunities, and/or a community  
21 advisory committee). PWSA and its consultants should develop and publicize the Stakeholder  
22 Engagement Plan for the master planning process as soon as possible.

---

<sup>13</sup> See PWSA St. 7, at 36:8 – 37:16.

<sup>14</sup> Appendix B, 9, UNITED-III-21.

1 **Q: What is your concern about the degree to which the stormwater master plan will**  
2 **help to ensure that low income communities benefit from PWSA's stormwater system**  
3 **improvements?**

4 A: I cannot comment on the content of the stormwater master plan at this time because it is  
5 not yet available for review. However, based on the information I have seen, it is not yet clear  
6 how the stormwater master plan will guide PWSA's selection and prioritization of stormwater  
7 improvements. PWSA's first priority in developing a master plan will be to assure that  
8 regulatory mandates can be met in a timely and cost-effective manner. Mandates related to  
9 reducing CSO overflow volumes are likely, by necessity, to dominate decision-making during  
10 the stormwater master plan process. PWSA also has an obligation to identify what future projects  
11 and approaches will make the best use of ratepayer dollars.

12 In general, PWSA's stormwater master plan should create processes and metrics to  
13 ensure that low income communities share equitably in the benefits created by PWSA's  
14 implementation of green infrastructure projects, PWSA's improvements to gray infrastructure,  
15 and other actions guided by the stormwater master plan. For example, PWSA could commit to  
16 spending a certain minimum percentage or amount of funding for stormwater improvements to  
17 serve low income communities. It would not be equitable for PWSA's low income ratepayers to  
18 pay their fair share of PWSA's stormwater rates yet receive less than an equitable share of the  
19 benefits funded by ratepayers.

20 **Q: What is your understanding of how PWSA is currently selecting and prioritizing**  
21 **stormwater-related projects and expenditures?**

22 A: PWSA has articulated a number of ways that it is selecting and prioritizing stormwater  
23 projects and maintenance. For example, PWSA has articulated a list of six overall goals for its

1 stormwater program,<sup>15</sup> and has developed a “Green First Plan” that outlines how PWSA and the  
2 City of Pittsburgh will use green infrastructure to help manage stormwater.<sup>16</sup> In its Capital  
3 Improvement Plan, PWSA identifies eight high-level criteria that are used to evaluate and  
4 prioritize potential capital projects.<sup>17</sup> For particular initiatives, PWSA has developed more  
5 specific criteria to evaluate and prioritize projects, such as seven factors used for prioritizing  
6 projects in the Saw Mill Run Integrated Watershed Management Plan.<sup>18</sup> More broadly, PWSA  
7 seeks to address a range of issues including “poor water quality, CSOs [combined sewer  
8 overflows] and SSOs [sanitary sewer overflows], illicit discharges, surface flooding, basement  
9 flooding, older sewer systems, and regulatory requirements,”<sup>19</sup> and seeks “a set of solutions that  
10 maximize a triple bottom line of environmental, economic, and societal benefits.”<sup>20</sup>

11 **Q: Do you have any recommendations for how PWSA should select and prioritize**  
12 **stormwater-related projects and expenditures?**

13 A: Yes. PWSA’s existing goals and evaluation criteria are a good starting point. It is  
14 particularly encouraging to see PWSA’s focus on a triple bottom line and on incorporating green  
15 infrastructure into its stormwater solutions. However, having various goals and criteria  
16 distributed across various documents and plans makes it more difficult for customers to  
17 understand how PWSA will decide how to spend ratepayer funds for stormwater-related work. In  
18 the stormwater master plan and other documents, it would be helpful for PWSA to consolidate its  
19 various stormwater-related goals and criteria and articulate a clear vision for how it will select

---

<sup>15</sup> PWSA St. 7, at 23:17 – 24:5.

<sup>16</sup> PWSA St. 7, at 24:17 – 25:4; see also Green First Plan and related documents, available at <https://www.pgh2o.com/your-water/stormwater>.

<sup>17</sup> PWSA St. 2, Exh. EB-5, at 2.

<sup>18</sup> Appendix B, 16, I&E-PS-8.

<sup>19</sup> PWSA St. 7, at 23:7-8.

<sup>20</sup> PWSA St. 7, at 23:11-12.

1 and prioritize stormwater projects and demonstrate that it is using ratepayer funds reasonably and  
2 equitably to deliver the best possible stormwater service to all customers.

3 For example, the PWSA 2021–2025 Capital Improvement Plan (approved September 25,  
4 2020) identifies eight criteria used to evaluate and prioritize capital projects.<sup>21</sup> There is a  
5 criterion related to sustainability, but no criteria regarding low income ratepayers. Adding a  
6 criterion that requires consideration of equitable service to low income ratepayers and  
7 communities would improve the likelihood that capital projects are equitably advanced. The  
8 Capital Improvement Plan includes 19 identified stormwater projects.<sup>22</sup>

9 **Q: What is green infrastructure?**

10 A: In general, green infrastructure refers to engineered structures and practices that reduce  
11 and treat stormwater at its source. Green infrastructure more closely mimics the natural water  
12 cycle, allowing stormwater to infiltrate into the ground, evaporate, or be transpired by plants,  
13 rather than running off directly into sewers or surface waters. Examples of green infrastructure  
14 include permeable pavement, tree planters that collect runoff, and rain gardens. Green  
15 infrastructure, by its nature, is consistent with providing triple-bottom-line benefits because it  
16 can provide green spaces, shade, natural habitat, and cleaner air, in addition to providing services  
17 like flood protection and water pollutant filtration. By contrast, traditional stormwater gray  
18 infrastructure—gutters, sewers, culverts, and the like—provides services limited to capturing and  
19 conveying stormwater. Most importantly, green infrastructure typically retains the first inch or  
20 more of rainfall during a storm event, effectively reducing the volume of combined sewer  
21 overflows and allowing more of the “dirtier” wastewater to reach the treatment plant. Green

---

<sup>21</sup> PWSA St. 2, Exh. EB-5, at 2.

<sup>22</sup> PWSA St. 2, Exh. EB-5, at 9, 80-99.

1 infrastructure is especially effective at reducing the pollutant load associated with combined  
2 sewer overflows.

3 **Q: Do you have any recommendations regarding PWSA’s goal to maximize a triple**  
4 **bottom line of environmental, economic, and societal benefits?**

5 A: Yes. PWSA’s focus on a triple bottom line is a great overall goal that should benefit all  
6 customers. However, there is a risk that projects providing “societal benefits,” especially to low  
7 income and environmental justice communities, will be deprioritized in favor of projects that  
8 focus on meeting regulatory requirements or supporting broader economic development and  
9 redevelopment projects. PWSA should ensure that all three of the triple bottom line benefits are  
10 carefully considered when selecting and prioritizing projects. As PWSA implements green and  
11 gray infrastructure projects using funds acquired through the stormwater tariff, decisions  
12 regarding project types and locations should be informed not only by a project’s capacity to meet  
13 regulatory requirements, but also by metrics that assure that priority is given to projects that will  
14 provide triple bottom line benefits to low income and environmental justice communities. In  
15 other words, project selection decisions should not be based only on achieving MS4 or other  
16 permit requirements; PWSA should include a process to assure that a minimum percentage or  
17 amount of stormwater fee revenue is spent on projects that will serve customers in disadvantaged  
18 communities. This process would help to ensure that all PWSA customers receive safe and  
19 effective stormwater services and that the benefits funded by ratepayer funds are distributed  
20 equitably.



1 **Q: Do you have any recommendations regarding PWSA's use of green infrastructure**  
2 **in its stormwater planning?**

3 A: Yes. In general, PWSA's emphasis on green infrastructure as a solution to stormwater  
4 issues is laudable and consistent with its focus on a triple bottom line. Green infrastructure  
5 projects can provide multiple benefits: they can reduce peak stormwater flows; reduce flooding;  
6 filter out pollutants; provide green space; alleviate urban heat islands; improve the quality of life  
7 in a neighborhood; and capture small, frequent rainfall events, allowing a greater amount of  
8 wastewater to reach the treatment plant. PWSA should continue to place a strong emphasis on  
9 finding and implementing cost-effective green infrastructure projects, and such projects are  
10 likely to be good uses of ratepayer funds. However, it is also important for PWSA's gray  
11 infrastructure to provide safe and effective stormwater service, particularly in communities or  
12 neighborhoods where opportunities for green infrastructure projects are limited or cost  
13 prohibitive. PWSA's process for selecting and prioritizing stormwater projects should balance  
14 these various objectives to ensure that all customers, especially low income customers and those  
15 living in environmental justice communities, receive safe and effective stormwater services.

16 **III. Stormwater Tariff and Rate Structure**

17 **Q: What metrics are typically used for setting stormwater rates?**

18 A: Stormwater rates are typically based on the amount of impervious surface area on a  
19 property.<sup>23</sup> Some municipalities also consider other related factors. For example, the Philadelphia  
20 Water Department also considers the total gross area of the property in setting stormwater rates  
21 for nonresidential properties.<sup>24</sup>

---

<sup>23</sup> See, e.g., PWSA St. 7, Exh. TI-3, at 3 (citing survey results showing 92% of stormwater fees nationwide are based on impervious area).

<sup>24</sup> See <https://water.phila.gov/stormwater/billing/nonres/>.

1 **Q: Why is impervious surface area typically used as the basis for stormwater rates?**

2 A: To be fair and equitable, stormwater rates should reflect the amount of stormwater  
3 generated by a property, which correlates with the property’s share of the cost of providing  
4 stormwater services. Stormwater runoff is primarily generated by impervious surfaces, so the  
5 amount of impervious surface area is a good proxy for the volume of stormwater runoff  
6 generated by a property. Also, stormwater rates linked to impervious surface area may  
7 incentivize property owners to take actions to better manage and reduce stormwater runoff on  
8 their property. As noted in the 2019 PWSA Stormwater Advisory Group Findings, “92% of  
9 agencies charging a stormwater fee use impervious area as the basis for their fee structure. . . .  
10 Consistent with national standards, we believe the Pittsburgh Water and Sewer Authority should  
11 adopt such a stormwater management fee based on impervious area.”<sup>25</sup>

12 **A. Units of Service (ERUs)**

13 **Q: What units of service are PWSA proposing to use to set stormwater rates in its**  
14 **stormwater tariff?**

15 A: PWSA is proposing to set stormwater rates based on the amount of impervious area on  
16 each parcel within its service area, which is calculated on the basis of Equivalent Residential  
17 Units or ERUs.<sup>26</sup> PWSA determined that the median amount of impervious area on single-family  
18 residential properties in Pittsburgh is about 1,650 square feet, which was defined as one ERU.<sup>27</sup>  
19 Stormwater fees for single-family residential customers are structured in three tiers, which  
20 correspond to 0.5 ERUs, 1.0 ERU, or 2.0 ERUs, with about 70% of residential customers in the  
21 middle tier that will be billed for 1.0 ERU, and about 15% of residential customers in each of the

---

<sup>25</sup> PWSA St. 7, Exh. TI-3, at 3.

<sup>26</sup> PWSA St. 8, at 7:9 – 8:2.

<sup>27</sup> PWSA St. 8, at 7:22-24.

1 upper and lower tiers.<sup>28</sup> Stormwater fees for nonresidential customers are based on the total  
2 impervious area on the property, converted into units of ERUs and rounded up to the nearest  
3 whole number.<sup>29</sup>

4 To determine the rate per ERU, PWSA calculated the total number of ERUs on all  
5 parcels in its service area and divided its proposed adjusted net stormwater revenue requirement  
6 by the total number of ERUs, which generated a proposed monthly rate of \$7.95 per ERU.<sup>30</sup> The  
7 proposed stormwater rates would be phased in over two years.<sup>31</sup> Low income residential  
8 customers in the Bill Discount Program would receive a 75% discount on their stormwater  
9 fees.<sup>32</sup>

10 **Q: Do you support PWSA's decision to base its stormwater rates on ERUs?**

11 A: In general, yes. It is logical and equitable to base the stormwater rates on the amount of  
12 impervious surface area on each parcel that contributes to stormwater runoff.

13 I also support PWSA's proposal to create multiple tiers for residential customers, rather  
14 than automatically charging every residential customer for 1.0 ERU. PWSA's data show that  
15 residential properties in Pittsburgh have impervious surface areas that vary from less than 100  
16 square feet to over 4,900 square feet.<sup>33</sup> Given this wide range, the three-tiered residential rate  
17 structure is more equitable than charging a single rate to all residential properties. As a possible  
18 future refinement to make the rate structure even more equitable, PWSA should consider  
19 whether a small number of residential customers with unusually large amounts of impervious

---

<sup>28</sup> PWSA St. 8, at 10:10-22; PWSA St. 4, Exh. HJS-3SW.

<sup>29</sup> PWSA St. 8, at 12:1-5.

<sup>30</sup> PWSA St. 8, at 12:16 – 13:14.

<sup>31</sup> PWSA St. 4, at 46:15-20.

<sup>32</sup> PWSA St. 6, at 26:10-12.

<sup>33</sup> Appendix B, 12, OCA-II-79.

1 surface area should be charged for 3.0 ERUs, for example, for residential properties that have 2.5  
2 or more ERUs of impervious area (4,125 square feet or more).

3 **Q: How will PWSA update its ERU determinations?**

4 A: PWSA plans to reassess impervious area data approximately every five years.<sup>34</sup> In  
5 addition, PWSA will provide a process for customers to appeal PWSA's determination of the  
6 impervious area on their property.<sup>35</sup>

7 **Q: Do you have any recommendations regarding PWSA's processes for updating ERU**  
8 **determinations?**

9 A: Yes. Before PWSA's stormwater tariff goes into effect, PWSA should provide two key  
10 resources for customers: (1) an explanation of how each ERU determination was made, and (2) a  
11 clear process for customers to appeal the determination.

12 First, PWSA should provide a way for customers to see the aerial image of their property,  
13 the area of the property that PWSA determined to be impervious, and the total impervious area  
14 PWSA calculated for the property. For example, the Philadelphia Water Department provides a  
15 searchable online map that shows how the impervious area on each property was calculated.<sup>36</sup>  
16 Many customers, especially residential customers, may not have information about the  
17 dimensions of impervious surface area on their property and, without a clear way for customers  
18 to understand how PWSA assessed impervious area, many customers will have a limited ability  
19 to determine if PWSA may have made a mistake. By looking at the aerial imagery and PWSA's  
20 designation of impervious surfaces, customers would be able to see if there are any discrepancies  
21 between PWSA's analysis and the customers' knowledge of their own properties. It is

---

<sup>34</sup> PWSA St. 7, at 35:13-19.

<sup>35</sup> PWSA St. 6, at 28:7-19; PWSA St. 7, Exh. TI-4, at 38-39; Appendix B, 2, UNITED-II-21.

<sup>36</sup> Available at <https://stormwater.phila.gov/parcelviewer/map>.

1 encouraging that PWSA is considering creating “a searchable database” to help customers  
2 “understand how the [stormwater] fee impacts their property,”<sup>37</sup> but it would be even more  
3 useful for PWSA’s customer resources to include the aerial imagery and impervious surface  
4 polygons used to determine ERUs. Also, in describing the amount of impervious surface area on  
5 each property, PWSA should consider using comparisons that relate to customers’ everyday  
6 experiences, such as comparing one ERU to the equivalent proportion of a basketball court,  
7 tennis court, or volleyball court.

8         Second, PWSA should establish an efficient, easy-to-understand process for customers to  
9 challenge their ERU determinations and should specify what types of data will be considered,  
10 and in what sequence, to reach a final determination. So far, PWSA has stated that it “will utilize  
11 its Stormwater Billing Information System (SBIS) and site visits during a review of a parcel’s  
12 square footage of impervious surface.”<sup>38</sup> It is encouraging that PWSA will utilize site visits in  
13 addition to its existing information during reviews of impervious surface determinations.  
14 However, PWSA customers will need more information and details to engage with the appeals  
15 process in a productive way. For example, the Philadelphia Water Department has created  
16 webpages that explain how customers can appeal various aspects of their stormwater charges and  
17 provide the forms required for a customer to file an appeal.<sup>39</sup> The Philadelphia Water  
18 Department has also published a 37-page Credits and Appeals Manual that, in part, explains the  
19 appeals process available to stormwater customers.<sup>40</sup> Before it starts collecting a stormwater fee,

---

<sup>37</sup> PWSA St. 7, at 37:14-16.

<sup>38</sup> Appendix B, 2, UNITED-II-21(b).

<sup>39</sup> Available at <https://stormwater.phila.gov/parcelviewer/help/appeals> and <https://stormwater.phila.gov/parcelviewer/help/appeals/file>.

<sup>40</sup> Available at [https://www.phila.gov/water/PDF/scaa\\_manual.pdf](https://www.phila.gov/water/PDF/scaa_manual.pdf).

1 PWSA should create a similarly transparent ERU appeals process and provide resources to  
2 educate customers about that process.

3 In addition, PWSA’s process for ERU appeals and reassessments should provide for a  
4 rate credit, refund, or adjustment if the customer has overpaid.<sup>41</sup>

5 **B. Stormwater Gradualism Adjustment**

6 **Q: How has PWSA historically recovered costs for stormwater services?**

7 A: PWSA has historically included costs for stormwater services in its wastewater rates and  
8 continues to do so currently.<sup>42</sup>

9 **Q: Do you have any concerns about recovering stormwater costs of service through  
10 wastewater rates?**

11 A: Yes. Wastewater charges are based on metered water consumption. Recovering  
12 stormwater costs through wastewater rates is not a fair and equitable rate structure because  
13 metered water usage is not well-correlated to how much stormwater a property generates. For  
14 example, a large commercial property may generate a relatively small amount of wastewater  
15 relative to the property’s size, yet generate large volumes of stormwater runoff from driveways,  
16 parking lots, and roofs. Conversely, a property such as an apartment building may generate large  
17 amounts of wastewater and very limited stormwater. I agree with the conclusions of PWSA’s  
18 stormwater advisory group and PWSA’s witness Mr. Igwe that “[a] sewer conveyance fee (based  
19 on a PWSA customer’s water usage) is not an equitable way to charge customers for stormwater  
20 management.”<sup>43</sup>

---

<sup>41</sup> See PWSA St. 6, at 28:19-20 (referring to possible retroactive adjustments); PWSA St. 7, Exh. TI-4, at 39 (providing for credits or refunds in the event of stormwater fee overpayments due to ERU adjustments).

<sup>42</sup> PWSA St. 7, at 3:6-7, 28:14-25.

<sup>43</sup> PWSA St. 7, at 3:7-8 & Exh. TI-3, at 3.

1 **Q: How is PWSA proposing to recover its projected stormwater revenue requirements**  
2 **in the current rate filing?**

3 A: PWSA is proposing to recover about  $\frac{2}{3}$  of its projected stormwater revenue requirements  
4 (about \$23.7 million) through stormwater rates based on ERUs and about  $\frac{1}{3}$  of its projected  
5 stormwater revenue requirements (\$12.4 million) through a “gradualism adjustment” that  
6 transfers these costs to wastewater rates.<sup>44</sup>

7 **Q: Do you have any concerns about PWSA’s proposed stormwater gradualism**  
8 **adjustment?**

9 A: Yes. As discussed above, wastewater rates are not well-correlated with the generation of  
10 stormwater runoff and do not reflect a property’s equitable contribution to stormwater service  
11 needs. The gradualism adjustment has the effect of perpetuating an inequitable aspect of  
12 PWSA’s recovery of projected stormwater revenue requirements and shifts stormwater costs  
13 between customer classes in ways that do not reflect each customer class’s fair share of  
14 stormwater generation.

15 **Q: How does PWSA’s proposed stormwater gradualism adjustment shift stormwater**  
16 **costs between customer classes?**

17 A: The costs of the stormwater gradualism adjustment “are allocated to classes based on the  
18 unadjusted cost of service for each customer class.”<sup>45</sup> However, the distribution of the unadjusted  
19 costs of service among customer classes differs for stormwater and wastewater.<sup>46</sup> The net result  
20 is that the stormwater gradualism adjustment causes some customer classes to pay more than

---

<sup>44</sup> PWSA St. 4, at 44:20 – 45:8 & Exh. HJS-5SW; PWSA St. 8, at 5:21 – 6:15.

<sup>45</sup> PWSA St. 4, at 45:22.

<sup>46</sup> Compare PWSA St. 4, Exh. HJS-9WW with PWSA St. 4, Exh. HJS-4SW.

1 their fair share of the stormwater costs of service, based on impervious surface area, and other  
 2 customer classes pay less than their fair share of the stormwater costs of service.

3 The net effects of the shifts in stormwater costs between customer classes caused by the  
 4 stormwater gradualism adjustment are shown in Table 1, as calculated by PWSA.<sup>47</sup>

5 Table 1. Net Effects of Stormwater Gradualism Adjustment on Customer Classes.<sup>48</sup>

<b>Customer Class</b>	<b>Total Net Cost of Service Impact</b>
Residential	\$595,155
Residential – CAP	-\$192,199
Commercial	-\$1,826,838
Industrial	\$192,910
Health or Education	\$859,892
Municipal	-\$30,983
Other	-\$653,071

6  
 7 Overall, the net impacts of the stormwater gradualism adjustment for customers in the  
 8 Residential and Health or Education customer classes are notable because each of these customer  
 9 classes will collectively pay over half a million dollars per year more than they would if all  
 10 stormwater costs were recovered through impervious-area-based stormwater rates. Conversely,  
 11 Commercial customers collectively stand to save about \$1.8 million per year and “other”  
 12 customers – the identities of which are unclear<sup>49</sup> – will collectively save over \$600,000 per year.  
 13 PWSA’s roughly 5,000 new stormwater-only customers also will benefit from the gradualism  
 14 adjustment because they do not pay wastewater rates.<sup>50</sup> The rest of the customer classes are

<sup>47</sup> Appendix B, 6-7, UNITED-III-5.

<sup>48</sup> Appendix B, 6-7, UNITED-III-5.

<sup>49</sup> Appendix B, 5, UNITED-III-4. Note that this “Other” customer class, representing 4,540 parcels and 11,588 ERUs, is distinct from the “Other” customers who are part of the Residential and Residential-CAP customer classes. See PWSA St. 4, Exh. HJS-3SW. The “Other” customers in the Residential and Residential-CAP customer classes represent a total of 10,288 parcels and 10,290 ERUs, which are attributable largely to multi-family residential properties. See *id.*; Appendix B, 4, UNITED-III-3.

<sup>50</sup> Appendix B, 3, UNITED-III-1 (stating there are approximately 4,997 new stormwater-only customers).



1 affected to a somewhat lesser degree, with Industrial customers paying more and Residential-  
2 CAP and Municipal customers paying less.

3 **Q: What is your understanding of PWSA’s rationales for the stormwater gradualism**  
4 **adjustment?**

5 A: PWSA has articulated several reasons for the gradualism adjustment. These reasons  
6 include: avoiding a stormwater rate that “would be inordinately high and would most likely  
7 result in a high level of nonpayment of the stormwater bill”;<sup>51</sup> avoiding a rate that would “pose a  
8 financial challenge to customers still recovering from the COVID-19 pandemic”;<sup>52</sup> and to  
9 account for “the fact that PWSA does not plan to dramatically expand its stormwater program in  
10 the near term” and customers may “expect to see new projects or initiatives when charged a  
11 substantially higher overall fee.”<sup>53</sup> PWSA has also stated that its consultants “determined that a  
12 total annual fee of less than \$100 seemed reasonable because 1) the level of fees incurred by  
13 customers does not correlate with water and sewer usage, which creates varying and sometimes  
14 severe customer impacts, 2) the level of stormwater services provided by PWSA will not be  
15 increased dramatically with the rollout of the fee, and 3) for customer acceptance reasons, PWSA  
16 did not want to be significantly above peers who have a mature stormwater program.”<sup>54</sup> In  
17 addition, PWSA has stated that “the lower fee also reduces costs (or forgone revenue) related to  
18 stormwater-only bad debt and the credit program.”<sup>55</sup>

---

<sup>51</sup> PWSA St. 4, at 44:24-26.

<sup>52</sup> PWSA St. 4, at 44:27-28; see also PWSA St. 8, at 6:2-3 (noting that the two-year phase-in of the stormwater rate will also help to blunt the impacts of the stormwater fee in light of COVID-19).

<sup>53</sup> PWSA St. 8, at 6:8-12.

<sup>54</sup> Appendix B, 14, OCA-IV-23.

<sup>55</sup> Appendix B, 14, OCA-IV-23; see Appendix B, 6-7, UNITED-III-5 (indicating that the gradualism adjustment results in net savings of \$1,055,136 due to reduced bad debt and credit program expenses).

1 **Q: What are your responses to PWSA’s rationales for the stormwater gradualism**  
2 **adjustment?**

3 A: Overall, I do not find PWSA’s rationales for the stormwater gradualism adjustment to be  
4 persuasive and PWSA does not explain why it is just or reasonable to shift stormwater costs  
5 between customer classes.

6 First, all PWSA customers have been affected by the COVID-19 pandemic to some  
7 extent. PWSA has not shown why shifting stormwater costs of service between customer classes  
8 is a fair and reasonable way to address the effects of a pandemic that affected all customers.

9 Second, the fact that some customer’s bills for stormwater services will increase  
10 significantly reflects the historic inequities in PWSA’s rate structure and is a feature, not a flaw,  
11 in the stormwater rate. PWSA and its stormwater advisory group agree that an impervious-area-  
12 based stormwater rate is the most equitable way to charge customers for stormwater services.<sup>56</sup>  
13 The fact that PWSA has been using an inequitable rate structure to recover stormwater costs of  
14 service is not a legitimate reason to perpetuate that inequitable rate structure.

15 Third, PWSA could alleviate concerns about customer acceptance in other ways, such as  
16 through robust customer education and outreach work to explain the reasons for the new  
17 stormwater rate, to show customers how much of their existing wastewater rates are allocated to  
18 stormwater-related services, and to explain the many stormwater-related improvements that  
19 PWSA has implemented and is planning in the coming years. PWSA should also explain to  
20 customers who would see a larger-than-average increase in their stormwater-related charges that  
21 those customers have been paying an unfairly low rate for stormwater services for many years,  
22 effectively receiving a subsidy from other customers.

---

<sup>56</sup> PWSA St. 7, at 3:7-8 & Exh. TI-3, at 3.

1 Fourth, to the extent that PWSA is concerned about non-payment by new stormwater-  
2 only customers, these stormwater-only customers represent about 12% of the impervious area  
3 PWSA has identified in Pittsburgh.<sup>57</sup> Even if all of these customers failed to pay the new  
4 stormwater tariff, shifting about 33% of the total stormwater costs of service from the  
5 stormwater tariff to the wastewater tariff is a disproportionate and inequitable way to address this  
6 potential non-payment issue. Moreover, PWSA estimates that the actual rate of non-payment  
7 from stormwater-only customers will be about 40%, not 100%, in the early years of the  
8 stormwater tariff.<sup>58</sup>

9 Finally, PWSA’s proposed stormwater rate “is in the lower range” among state-wide and  
10 national peers.<sup>59</sup> There is room to increase PWSA’s stormwater rate to make it fair and equitable  
11 without setting a rate that is substantially higher than peer cities.

12 **Q: Based on your analysis of the stormwater gradualism adjustment, what would you**  
13 **recommend?**

14 A: The stormwater gradualism adjustment perpetuates a portion of the inequitable rate  
15 structure that the impervious-area-based stormwater rates are intended to correct. To ensure that  
16 all customers are charged fair and equitable rates for stormwater service, PWSA should eliminate  
17 or phase out the stormwater gradualism adjustment as quickly as possible. The most fair and  
18 equitable rate structure will be one that recovers all stormwater costs of service through  
19 stormwater rates based on impervious area.

---

<sup>57</sup> PWSA St. 4, Exh. HJS-3SW (identifying a total of 30,809 equivalent residential units of impervious area for 4,997 stormwater-only customers, out of a total of 251,500 equivalent residential units system-wide).

<sup>58</sup> Appendix B, 17, OSBA-I-7.

<sup>59</sup> PWSA St. 8, at 14:1-4.

1 **Q: If the stormwater gradualism adjustment were eliminated, and all stormwater costs**  
 2 **of service were recovered through PWSA’s stormwater tariff, how would it affect PWSA’s**  
 3 **stormwater rates?**

4 A: If the stormwater gradualism adjustment were eliminated, it would raise the proposed  
 5 stormwater rates by about 56%, from \$7.95 per ERU to \$12.41 per ERU in FY 2023.<sup>60</sup> The  
 6 resulting rates for all stormwater customer classes are shown in Table 2, assuming the two-year  
 7 phase-in process (75% rates in 2022) and customer assistance program (75% discount) are  
 8 unchanged.<sup>61</sup>

9 Table 2. Monthly Stormwater Rates With and Without the Gradualism Adjustment

Monthly Stormwater Rates				
	With Gradualism		Without Gradualism	
Customer Class	2022	2023	2022	2023
Residential Tier 1	\$2.99	\$3.98	\$4.65	\$6.21
Residential Tier 2	\$5.96	\$7.95	\$9.31	\$12.41
Residential Tier 3	\$11.93	\$15.90	\$18.62	\$24.82
Residential-CAP Tier 1	\$0.74	\$0.99	\$1.16	\$1.55
Residential-CAP Tier 2	\$1.49	\$1.99	\$2.33	\$3.10
Residential-CAP Tier 3	\$2.99	\$3.98	\$4.65	\$6.21
Nonresidential per ERU	\$5.96	\$7.95	\$9.31	\$12.41

10

11 **C. Services Provided to Contributing Municipalities**

12 **Q: What is contributing municipality service?**

13 A: The PUC’s model stormwater tariff refers to contributing municipality service as service  
 14 provided to adjacent municipalities that contribute stormwater to a utility’s facilities either  
 15 directly or indirectly.<sup>62</sup>

<sup>60</sup> PWSA St. 4, Exh. HJS-4SW; Appendix B, 8, UNITED-III-9.

<sup>61</sup> Appendix B, 13, OCA-IV-17 (2022 stormwater rates are 75% of full rates); PWSA St. 4, Exh. HJS-6SW (75% discount for Residential-CAP customers).

<sup>62</sup> PWSA St. 7, Exh. TI-5, at 7.

1 **Q: Is PWSA proposing a rate for contributing municipality service?**

2 A: No, PWSA is not proposing to charge a stormwater rate for contributing municipality  
3 service.<sup>63</sup>

4 **Q: Do you have any concerns regarding PWSA's proposal for addressing contributing**  
5 **municipality service?**

6 A: Yes. Stormwater entering PWSA's system from upstream municipalities may contribute  
7 to flooding, backups, and other problems within PWSA's service area. To the extent that  
8 upstream municipalities are using PWSA's stormwater services, they should pay their fair share,  
9 just as PWSA's customers should pay equitably for these services.

10 **Q: Do you have any recommendations for addressing contributing municipality**  
11 **service?**

12 A: Yes. First, if it has not already, PWSA should analyze what stormwater costs and  
13 problems are attributable, at least in part, to stormwater conveyed to PWSA's system from  
14 upstream municipalities.

15 Second, PWSA should work with upstream municipalities to explore whether projects in  
16 upstream areas, outside of PWSA's service area, could provide cost-effective solutions to  
17 alleviate downstream problems within PWSA's service area. It is encouraging that PWSA has  
18 indicated that it will work with upstream communities to address stormwater issues and cost-  
19 sharing.<sup>64</sup> In practice, assessing the problems, costs, and potential solutions associated with  
20 multi-jurisdictional sewersheds may be similar to the work that PWSA has done to develop an  
21 Integrated Watershed Management Plan for the Saw Mill Run watershed,<sup>65</sup> and PWSA will

---

<sup>63</sup> PWSA St. 7, at 33:10-14; PWSA St. 7-SD, at 10:5-6; Appendix B, 15, OCA-V-6.

<sup>64</sup> Appendix B, 15, OCA-V-6.

<sup>65</sup> See PWSA St. 7, at 13:12 – 14:13.

1 likely need to engage in similar regional-scale planning for other watersheds. In its stormwater  
2 master plan, PWSA should explain in more detail how it will evaluate, prioritize, and address  
3 stormwater flows that enter PWSA's system from upstream municipalities.

4 Third, in the long run, all entities that contribute to stormwater problems in PWSA's  
5 service area should also contribute their fair share to addressing those problems, such as through  
6 equitable cost-sharing for projects to abate stormwater flows entering PWSA's system from  
7 upstream municipalities.

8 **D. Stormwater Fee and Bill Discount Program**

9 **Q: Please describe PWSA's Bill Discount Program.**

10 A: Customers with incomes less than or equal to 150% of the Federal Poverty Line enrolled  
11 in the Bill Discount Program receive a 100% reduction of their fixed minimum water and  
12 wastewater charges.<sup>66</sup> Furthermore, enrolled customers with incomes less than or equal to 50%  
13 of the Federal Poverty Line currently receive a 20% reduction on any volumetric water service  
14 charge; PWSA is proposing to increase this reduction to 50%.<sup>67</sup>

15 **Q: Will PWSA charge the stormwater fee to customers enrolled in the Bill Discount**  
16 **Program?**

17 A: Yes.<sup>68</sup> Under PWSA's proposed tariff, customers enrolled in the Bill Discount Program  
18 with incomes less than or equal to 150% of the Federal Poverty Line would receive a 75%  
19 reduction of the stormwater fee.<sup>69</sup>

---

<sup>66</sup> PWSA St. 6, at 23:8-9.

<sup>67</sup> PWSA St. 6, at 24:10-11, 26:9-10.

<sup>68</sup> Appendix B, 1, UNITED-II-17(c).

<sup>69</sup> PWSA St. 6, at 26:10-12.

1 **Q: Do you have a recommendation regarding PWSA’s plan to charge the stormwater**  
2 **fee to customers enrolled in the Bill Discount Program?**

3 A: Yes. I recommend that, for this limited group of customers, PWSA apply a 100%  
4 discount to the stormwater fee. Any increase in rates is burdensome for low income customers.<sup>70</sup>  
5 If these customers are unable to pay the new stormwater fee, they are at risk of having their  
6 water service terminated and having a lien placed on their property.<sup>71</sup>

7 Applying a 100% reduction to the stormwater fee for customers enrolled in the Bill  
8 Discount Plan would save PWSA the expense of pursuing collections of unpaid bills from these  
9 vulnerable customers. Moreover, the foregone revenue from this measure would be minimal.  
10 Based on PWSA’s stormwater fee revenue projections, increasing the stormwater fee discount  
11 from 75% to 100% would reduce PWSA’s revenue by less than \$90,000 in FY 2022.<sup>72</sup>

12 **E. Public Education Regarding the Stormwater Fee**

13 **Q: Is educating customers about the stormwater fee important?**

14 A: Yes. Convincing customers that the stormwater fee is a fairer way to fund essential  
15 services is critical to reducing instances of non-payment and securing ratepayer support for  
16 stormwater funding over time. As PWSA’s Stormwater Advisory Group found, “[e]ducation and  
17 outreach are essential to Pittsburgh’s acceptance of the stormwater management fee and  
18 understanding of the stormwater management program.”<sup>73</sup> It is also important to educate

---

<sup>70</sup> United St. 1, at 14:4 – 17:2, 48:1-12.

<sup>71</sup> PWSA St. 6, at 29:14 – 30:6, 31:10 – 32:2. I am advised by counsel for Pittsburgh United that PWSA’s collections methods may be at issue in a separate, ongoing Compliance Plan proceeding. In noting the consequences of water unaffordability, and PWSA’s current collections methods, I do not opine on the appropriateness of those methods.

<sup>72</sup> See PWSA St. 4, Exh. HJS-6SW (predicting recovery of \$88,115 from Residential – CAP after applying the 75% reduction to the stormwater fee).

<sup>73</sup> PWSA St. 7, Exh. TI-3, at 4.

1 customers about the benefits of reduced flooding and combined sewer overflows, and the  
2 multiple benefits of green stormwater infrastructure since the fees will be applied to these efforts.

3 **Q: What steps is PWSA taking to educate customers about the stormwater fee?**

4 A: PWSA has sent a letter to customers describing the stormwater fee in general terms.<sup>74</sup> It  
5 plans to send additional letters with more specific information.<sup>75</sup> It also plans to meet with  
6 stakeholders and community groups, launch a website, publicize the program on social media  
7 and in the news, and reconvene its Stormwater Advisory Group.<sup>76</sup> PWSA is also considering  
8 creating a searchable database where customers can look up information about how the  
9 stormwater fee applies to their properties.<sup>77</sup>

10 **Q: Do you have any recommendations related to PWSA's public education efforts?**

11 A: Yes. Before the fee goes into effect, PWSA should indicate on customers' bills the  
12 portion of the wastewater charge attributable to stormwater. By getting customers to start  
13 thinking about stormwater as a separately charged service now, PWSA can reduce confusion and  
14 resistance when it implements the stormwater fee.

15 In addition, the first letter PWSA sent to customers introducing the stormwater fee  
16 contains only text and tables with numbers.<sup>78</sup> Future informational materials should be more  
17 reader-friendly, including graphics explaining the purpose of the fee and why it is a more  
18 equitable way to charge for stormwater services than the current rate structure. Also, I would like  
19 to underscore how critical it is for PWSA to conduct robust outreach, particularly to low income  
20 communities and ratepayers who will be most affected by the stormwater fee. Some entities,

---

<sup>74</sup> PWSA St. 6, at 21:7-8; Rate Filing Package, Vol. I, Tab 2, PUC v. PWSA, Dkt. Nos. R-2021-3024773 et al. (Apr. 13, 2021).

<sup>75</sup> PWSA St. 6, at 22:1-17; PWSA St. 7, at 36:10 – 37:16.

<sup>76</sup> PWSA St. 7, at 36:10 – 37:16.

<sup>77</sup> PWSA St. 7, at 37:14-16.

<sup>78</sup> Rate Filing Package, Vol. I, Tab 2, PUC v. PWSA, Dkt. Nos. R-2021-3024773 et al. (Apr. 13, 2021).



1 such as churches, may be surprised by the rate increase, and early, sustained outreach will be  
2 important to help them understand the fee, as well as their options for mitigating it, as described  
3 below. Effective outreach often requires person-to-person communication and multiple points of  
4 contact. PWSA should conduct outreach through phone calls and canvassing, targeted to low  
5 income customers and other stakeholders most affected by the stormwater fee. If necessary,  
6 PWSA should contract with community outreach partners. PWSA should track and publicly  
7 report its outreach efforts using objective metrics so that, over time, their efficacy can be  
8 assessed.

9 Finally, to the extent that PWSA is reconvening its Stormwater Advisory Group, PWSA  
10 should ensure that it includes representatives of low income communities and that any  
11 recommendations from the Stormwater Advisory Group account for the perspectives of low  
12 income customers.

13 **F. Stormwater Credit Program**

14 **Q: Please describe PWSA’s stormwater fee credit program.**

15 A: Residential customers are eligible for a 50% credit on their stormwater fee if they  
16 disconnect their downspout from the storm sewer, divert drainage to street planters, or detain <sup>3</sup>/<sub>4</sub>  
17 inch of rain from their property’s impervious surfaces.<sup>79</sup> A credit of up to 45% or 60% is  
18 available to nonresidential customers that meet the City of Pittsburgh’s 2016 or 2019 stormwater  
19 standards.<sup>80</sup> Nonresidential customers can also earn additional credits, up to 100% of their  
20 stormwater fees, for “regional efforts” or controlling at least 25% more runoff than required by  
21 the Pittsburgh 2019 stormwater standards.<sup>81</sup>

---

<sup>79</sup> PWSA St. 7, at 33:25 – 34:11 & Exh. TI-4, at 9-11

<sup>80</sup> PWSA St. 7, at 33:17-24 & Exh. TI-4, at 9-11.

<sup>81</sup> PWSA St. 7, Exh. TI-4, at 10.

1 **Q: What is the purpose of the credit program?**

2 A: As PWSA’s Stormwater Advisory Group recognized, “[a]ddressing Pittsburgh’s current  
3 and projected problem of excess stormwater is a community undertaking that requires the active  
4 participation of private property owners to reduce the quantity of stormwater or improve its  
5 quality as it enters Pittsburgh’s sewer system or waterways.”<sup>82</sup> The stormwater credit program is  
6 intended to encourage property owners to take steps to improve stormwater management on their  
7 properties, which in turn reduces the burden on PWSA’s system.

8 **Q: Do you have any concerns regarding PWSA’s credit program?**

9 A: Yes. I am concerned that the economic benefit of the credits will not be sufficient to  
10 incentivize customers to invest in eligible stormwater improvements. I am also concerned that  
11 the credit program as structured provides little to no incentive for landlords to participate.

12 **Q: Why do you believe that the economic benefit from the credit program will not be  
13 sufficient to incentivize customers to participate?**

14 A: If the cost to a customer to install a stormwater management measure exceeds the  
15 cumulative reduction in the customer’s utility bill from the stormwater credit over a reasonable  
16 period of time, then the credit program will likely not incentivize that customer to install the  
17 stormwater management measure. If PWSA’s stormwater fee is approved at the level proposed,  
18 then the average residential customer (paying for 1.0 ERUs) will pay about \$95 per year in FY  
19 2023.<sup>83</sup> Thus, the value of a 50% stormwater credit would be about \$47 per year in FY 2023.  
20 Based on my experience, I would expect installation of management measures necessary to  
21 qualify for a credit—disconnecting a downspout from a sewer system, routing a residential  
22 property’s stormwater to a street planter, or other measures to retain the first ¾ inch of rainfall—

---

<sup>82</sup> PWSA St. 7, Exh. TI-3, at 4.

<sup>83</sup> PWSA St. 4, Exh. HJS-6SW.

1 to cost several hundred dollars. Consequently, it is likely that it would never make economic  
2 sense in the short-term for a household to invest in these types of stormwater management  
3 measures. Only long-term residents who are financially capable of paying the upfront costs and  
4 willing to gradually recover their investment over many years would be incentivized to  
5 participate.

6 Similarly, I would expect that for most existing nonresidential properties, there would be  
7 a negative return on investment from retrofitting the property to meet the City's 2016 or 2019  
8 stormwater standards. As a result, it is likely that many or most nonresidential properties that are  
9 eligible for credits will be eligible because they were new developments or redevelopments that  
10 were required to meet the 2016 or 2019 Pittsburgh stormwater standards, not older properties  
11 that were incentivized to install stormwater retrofits.

12 **Q: Do you have a recommendation regarding how to better incentivize participation?**

13 A: Over the next two years, PWSA should collect information about the customers that  
14 apply for its stormwater fee credit. This information should include, among other things, the  
15 customer's stormwater fee tier, their self-reported reason for pursuing the credit, and the cost of  
16 installing the credit-eligible stormwater management measure. For nonresidential properties,  
17 PWSA should also track whether the property is eligible for the credit because the owner  
18 invested in stormwater retrofits or because it was a new development or redevelopment that was  
19 already required to meet the Pittsburgh 2016 or 2019 stormwater standards. At the end of this  
20 period, PWSA should share this information with the public and consider revisions to the credit  
21 program, if appropriate, such as shifting some of the credit program funding into a grant or  
22 reimbursement program to help low income customers finance stormwater retrofits and  
23 participate in the credit program.

1 **Q: Please explain your concern related to landlords and the credit program.**

2 A: Under the current program design, landlords are eligible but will have little incentive to  
3 participate. Stormwater improvements that qualify for the credit require an investment of money  
4 and time. Landlords are unlikely to make that investment when they can simply pass the cost of  
5 the stormwater fee on to their tenants. The credit program presents a split incentive problem: in  
6 most cases, the direct economic benefit of credits would go to the tenant, but the cost would be  
7 borne by the landlord.

8 **Q: Why is that a problem?**

9 A: The lack of incentive for landlords to participate in the credit program means that tenants  
10 and neighborhoods with rental properties are less likely to benefit from the credit program. The  
11 program's benefits include not only a lower utility bill, but also the localized benefits from the  
12 credit-yielding stormwater projects themselves, such as reduced surface flooding and basement  
13 backups and other co-benefits from green infrastructure.<sup>84</sup> The stormwater credit fee program  
14 should be structured in a way so that tenants have a reasonable opportunity to enjoy those  
15 benefits.

16 **Q: Do you have any recommendations for how PWSA could address the lack of**  
17 **incentive for landlords to participate in the stormwater credit program?**

18 A: Yes. I recommend that PWSA consider modifying or expanding its credit program to  
19 better incentivize the participation of landlords, particularly those with properties housing low  
20 income tenants or located in low income neighborhoods. For example, PWSA could consider  
21 offering qualifying landlords full or partial reimbursements for the cost of certain stormwater

---

<sup>84</sup> See PWSA St. 7, at 34:15 – 35:4 (describing goals of the credit program).

1 improvements to their rental properties. The terms of any such program should ensure that  
2 savings on stormwater fees are passed on to tenants.

3 I understand from counsel that PWSA is working on a conservation and service line  
4 proposal.<sup>85</sup> PWSA should consider incorporating into that proposal funding for a stormwater  
5 improvement rebate program at rental properties with low income tenants, as well as rental  
6 properties located in low income neighborhoods. If the funds currently allocated to the credit  
7 program are not fully utilized, PWSA should consider allocating these funds to a potential rebate  
8 program.

9 PWSA could also prioritize the installation of street planters and other green  
10 infrastructure in low income communities. Doing so would make it easier for qualifying  
11 landlords and low income homeowners to disconnect downspouts from storm sewers and instead  
12 route their property's stormwater to these systems. It would also provide the additional economic  
13 and environmental benefits of green infrastructure to low income communities.

14 **Q: How does PWSA plan to inform customers about the stormwater credit program?**

15 A: PWSA indicates that it will inform customers of the stormwater credit program through  
16 the same means it will use to educate customers about the stormwater fee.<sup>86</sup> It has also drafted a  
17 manual on the credit program that it will make available to customers.<sup>87</sup>

18 **Q: Do you have any recommendations regarding how PWSA educates customers about  
19 the stormwater credit program?**

20 A: Yes. Because participation in the stormwater credit program requires customers to take  
21 action and likely to spend money, the success of the program depends upon helping customers

---

<sup>85</sup> Joint Petition for Settlement § III.F.7.c, PUC v. PWSA, Dkt. Nos. R-2020-3017951 et al., R-2020-3017970 et al., P-2020-3019019 (Sept. 30, 2020).

<sup>86</sup> See PWSA St. 7, at 37:10-12.

<sup>87</sup> Appendix B, 10, United-III-24.

1 understand the value—to themselves, their communities, and the environment—of making  
2 stormwater improvements to their properties. PWSA should provide written materials, such as  
3 bill inserts and doorhangers, explaining the program and its benefits. PWSA should create a  
4 website that includes pictures of completed projects, videos about the program, and information  
5 about how to find contractors who can install stormwater improvements and how to apply for  
6 credit for a completed project.<sup>88</sup> Similar to my recommendation for outreach about the  
7 stormwater fee, PWSA should attend community meetings and engage with churches and  
8 nonprofits. Educating local contractors who install stormwater improvements about the program  
9 can also be an effective way to spread the word. Signage on completed projects at various points  
10 throughout PWSA’s service area lets customers see examples of the credit program in action and  
11 lets them know that their neighbors are participating.

12 In addition, PWSA should implement a robust outreach program as soon as possible.  
13 Notifying customers of the availability of the program before the stormwater fee goes into effect  
14 will help increase customer acceptance of the fee and enable customers interested in the credit  
15 program to take prompt action to benefit from the credit.

16 **IV. Conclusion**

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

18 A: Overall, PWSA’s proposed stormwater tariff is an important step toward a more equitable  
19 rate structure for stormwater services. However, there are several ways to improve the proposed  
20 stormwater tariff, and PWSA’s underlying stormwater planning, to ensure safe, effective service  
21 and fair, reasonable rates for all PWSA customers:

---

<sup>88</sup> As an example, Raleigh, North Carolina’s website for its Stormwater Quality Cost Share Program includes several of these features.  
<https://raleighnc.gov/projects/content/PWksStormwater/Articles/StormwaterQualityCostShareProgram.html>.

- 1       • PWSA’s stormwater master plan should be developed and deployed as soon as possible,  
2           should be developed using an inclusive process that includes iterative public involvement  
3           and feedback, and should ensure that PWSA uses selection and prioritization criteria for  
4           stormwater improvements that ensure that all customers, especially low income  
5           customers, receive triple bottom line benefits.
- 6       • In future PWSA Capital Improvement Plans or in updates to the 2021-2025 Capital  
7           Improvement Plan, in its criteria to evaluate and prioritize projects, PWSA should add a  
8           criterion that requires consideration of equitable service to low income ratepayers and  
9           communities. By defining this as a criterion for project evaluation, PWSA would improve  
10          the likelihood that capital projects are equitably advanced.
- 11      • PWSA’s plan to use ERUs based on impervious area as the units of service for  
12          stormwater is fair and consistent with nationwide best practices. PWSA’s three  
13          residential tiers will help to ensure equity among residential customers.
- 14      • PWSA should provide more information to customers about how PWSA made its ERU  
15          determinations and should provide a clear, efficient process for customers to appeal their  
16          ERU determination.
- 17      • PWSA’s stormwater gradualism adjustment unfairly shifts stormwater costs between  
18          customer classes. PWSA’s rationales for the stormwater gradualism adjustment do not  
19          justify perpetuating the inequitable rate structure for stormwater that the stormwater tariff  
20          is meant to fix. The stormwater gradualism adjustment should be eliminated or phased  
21          out as soon as possible.

- 1       • PWSA should work with adjoining municipalities to analyze and address stormwater  
2       flows contributed to PWSA's system by upstream municipalities and should ensure that  
3       upstream municipalities share equitably in the costs to address these upstream flows.
- 4       • For PWSA customers in the Bill Discount Program, PWSA should provide a 100%  
5       discount on the stormwater fee.
- 6       • PWSA should enhance its public education and outreach efforts regarding the stormwater  
7       tariff by (1) clearly indicating how much of customers' existing wastewater charges are  
8       attributable to stormwater costs of service, (2) providing easy-to-understand, graphical  
9       explanations for the new stormwater fees and why they are a more equitable way to pay  
10      for stormwater services, (3) providing or contracting for person-to-person outreach work  
11      for low income customer and others who will be most affected by the stormwater fee, and  
12      (4) tracking and publicly reporting on these outreach efforts.
- 13      • PWSA should collect information about the customers who enroll in its stormwater credit  
14      program and evaluate whether the program provides an adequate incentive for property  
15      owners to construct stormwater retrofits.
- 16      • In addition to providing credits, PWSA should consider developing a program to provide  
17      grants or reimbursements to landlords who implement stormwater retrofits at rental  
18      properties, particularly low income rental properties, to address the split incentive  
19      problem and provide more opportunities for low income tenants to benefit from the credit  
20      program. PWSA also should consider providing a grant or reimbursement program to low  
21      income property owners, especially if their participation rate in the credit program turns  
22      out to be low.



- 1       • Prior to implementing the stormwater tariff, PWSA should provide robust customer  
2       education about the stormwater credit program, including written materials, online  
3       materials, person-to-person engagement, and other methods that raise awareness and help  
4       customers understand how to participate.

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

6       A: Yes. I reserve the right to supplement my testimony based on subsequent information  
7       provided by PWSA or as may otherwise be appropriate.

**APPENDIX A**

**CV of Michele C.W. Adams, PE, LEED AP**

# Michele Adams

## Principal/Founder, Chief Engineer

PE, LEED AP



For over 30 years, Michele Adams' career has encompassed environmentally sensitive site design and sustainable water resources engineering. Her work includes planning and engineering with a focus on resilient design and improving watershed health with each project. Michele is one of the principal authors of the PA Stormwater Best Management Practices Manual and the award-winning New York City Department of Parks and Recreation High Performance Landscape Guidelines, as well as several other stormwater and Low Impact Development manuals throughout the country. Michele is the founding Principal at Meliora Design, established in 2007.

### Overview of Experience

#### Watershed Studies and Planning

Pittsburgh Panther Hollow Green Infrastructure Plan  
Wilmington CS04 Reduction Plan  
Chattanooga Runoff Reduction Plan  
Philadelphia Green Infrastructure Plans (multiple)  
FDR Park Resilient Master Plan  
Cap Haitien, Haiti Regional Comprehensive Plan  
NYC Office of Management and Budget GI VE Analysis  
Lake George Low Impact Development Program  
Drexel University Stormwater Master Plan  
Purdue University Stormwater Master Plan

#### Site Design for LEED and SITES Certified Projects

Stroud Water Research Center | LEED Platinum  
KidZooU | LEED Gold | 2014 Zoo Exhibit of the Year  
University of Pennsylvania Shoemaker Green Plaza | SITES  
Philadelphia Friends Center | LEED Platinum  
University of Pennsylvania Wharton Academic Tower | LEED Gold  
Philadelphia Fire Engine 38 | LEED  
US Botanic Garden Bartholdi Plaza | SITES Gold  
University of Pennsylvania New College House West | LEED

#### Stormwater Policy

NRDC Green City, Clean Waters Technical Recommendations  
EPA Stormwater Program Peer Review and Technical Policy Review  
NJ Future/NJDEP Technical assistance and policy support related to Green Infrastructure adoption in New Jersey  
Penn Future/PADEP MS4 Regulation Settlement

#### Other

Instructor Natural Hazard Mitigation Association Training  
U.S. Army Corps of Engineers and PEMA

### Education

Graduate Work in Water Resource Engineering  
Villanova University

Bachelor of Science in Civil Engineering

### Registrations

Professional Engineer in PA, DE, NY, MD, VA

LEED Accredited Professional

### Affiliations

U.S. Green Building Council, Sustainable Sites  
Technical Advisory Group Member

American Rivers Science and Technical Advisory  
Committee Member

### Publications

Design for Flooding: Architecture, Landscape and  
Urban Design for Resilience to Climate Change.  
Wiley, 2011

## Project Specific Experience

**Philadelphia Water Department** | Philadelphia, PA  
Passyunk Avenue Corridor Street Improvements  
Bureau of Laboratory Services Green Streets Project  
Tacony Creek Green Infrastructure  
Waterview Recreation Center Green Infrastructure  
Wissinoming Park Green Infrastructure  
East Falls Streetscape  
21st Century Communities GSI Planning Study  
Queen Village GSI Planning Study  
American Street Area of Opportunity Analysis  
Washington and Stenton Ave Green Infrastructure

**Radnor Township** | Radnor, PA  
West Wayne Flood Reduction & Green Infrastructure Design  
Midland Avenue Flood Reduction & Green Infrastructure Design  
N Wayne Flood Reduction & Streetscape Improvements  
S Wayne Flood Reduction Improvements

**Capital Region Water** | Harrisburg, PA  
Green Infrastructure Planning and Design

**New Jersey Future GSI Program** | Various Locations, NJ  
Concept GSI Designs and Municipal Outreach  
NJ Model Stormwater Ordinance  
NJ DEP Stormwater Policy and Regulation Update support  
Review and recommendations for NJ LTCPs

**Upstream Suburban Philadelphia GSI** | Philadelphia, PA  
GSI Planning Studies and Designs, Various municipalities

**City of Wilmington** | Wilmington, DE  
Green Infrastructure Planning & Design CSO4 Study

**Upstream Suburban Philadelphia GSI** | Philadelphia, PA  
GSI Planning Studies and Designs, Various municipalities

**Philadelphia Parks and Recreation** | Philadelphia, PA  
GSI Planning and Design for various public properties including Shissler Recreation Center, Stinger Square, Vernon Park. Wissinoming Park Master Plan, Weccacoe Playground, 8th & Diamond Playground, Guerin Playground, Waterview Recreation Center, Gorgas Park Master Plan, Clark Park, Simons Recreation Center

**The Mann Center for the Performing Arts** | Phila, PA  
Stormwater Retrofits and Site Improvements

**University City Science Center** | Philadelphia, PA  
Innovation Plaza

**Wharton Esherick Museum** | Tredyffrin Township, PA  
Stormwater Management and Site Improvements

**Philadelphia Contemporary** | Philadelphia, PA  
Civil Site Design and Stormwater Management

**Mesker Zoo Penguin Exhibit** | Evansville, IN  
Feasibility Study, Stormwater and Wastewater Wetland Design

**Philadelphia Holocaust Remembrance Foundation** | Philadelphia, PA  
Horowitz-Wasserman Memorial Plaza

**University of Pennsylvania** | Philadelphia, PA  
Wharton Academic Research Building | LEED Certified  
New College House West  
Vagelos Laboratory  
Shoemaker Green | SITES  
Locust Walk  
Richards Plaza Concept Plan  
Blockley Hall Bicycle Area  
Chilled Water, HVAC Upgrades - Various Buildings  
High Bay BLAST Laboratory

**Drexel University** | Philadelphia, PA  
Perelman Plaza & Korman Quadrangle  
Stormwater Master Plan  
Powel Elementary and SLA Middle School

**Wexford Science and Technology** | Philadelphia, PA  
Drexel Academic Tower

**Temple University** | Philadelphia, PA  
Broad and Norris Campus Park

**Haverford College** | Haverford, PA  
Lutnick Library Renovation

**Purdue University** | West Lafayette, IN  
Stormwater Master Plan  
Athletic Field & Stadium Parking Lot Green Infrastructure

**Bucks County Community College** | Newtown, PA  
Campus Core Plaza

**Stroud Water Research Center** | Avondale, PA  
Environmental Education Center and Lab | LEED Platinum

**Mt. Cuba** | Hockessin, DE  
Campus and Site Improvements

**Brandywine Conservancy and Museum of Art** | Chadds Ford, PA  
Campus Master Plan

**Longwood Gardens** | Kennett Square, PA  
Meadow Expansion

**Rebuild** | Philadelphia, PA (michele, all?)  
Vare Recreation Center  
Lawncrest Recreation Center and Library  
Glavin Playground  
Chew Playground  
Heitzman Recreation Center

**Upper Gwynedd Township** | Upper Gwynedd, PA  
Recreation Center Master Plan and Concept Design

**Pittsburgh Parks Conservancy** | Pittsburgh, PA  
Schenely Drive Stormwater Planning and Green Streets Design  
Haberman & McKinley Park Stormwater Management Master Plan  
Panther Hollow Watershed Restoration Plan and Green Infrastructure Design

## Expert Testimony and Reports related to Litigation and Permit Appeals

**2018 Delaware Riverkeeper Network challenge of Federal Energy Regulatory Commission's PennEast Pipeline Approval** Provided technical report regarding water quality impacts of proposed pipeline route and deficiencies in impact analyses to support appeal of FERC approval.

**2018 Delaware Riverkeeper Network appeal of Slate Belt Heat Recovery Center Draft NPDES Permit.** Provided technical report to support appeal of Draft NPDES Permit to Discharge Industrial Stormwater to High Quality Cold Waters Fishery from proposed biosolids processing facility.

**2017 Clean Air Council vs Commonwealth of Pennsylvania, Department of Environmental Protection and Sunoco Mariner East II Pipeline Project, EHB Docket No 2017-009-L** Provided technical expertise and testimony regarding stormwater and erosion and sediment control impacts on water quality.

**2017 Bradley and Amy Simon vs Commonwealth of Pennsylvania, Department of Environmental Protection and Sunoco Mariner East II Pipeline Project, EHB Docket No 2017-019-L** Provided technical expertise and testimony regarding stormwater and erosion and sediment control impacts on water quality in HQ streams and ponds.

**2017 Nesbitt Comments to FERC regarding Atlantic Sunrise Pipeline proposed location and alternates.** Provided technical expertise and reports evaluating the anticipated water quality impacts of the Atlantic Piple East proposed route. FERC required that the alternate route be selected.

**2016 Valley Forge Chapter Trout Unlimited vs Commonwealth of Pennsylvania, Department of Environmental Protection and Pa Turnpike Commission, EHB Docket No 2016-121-L** Provided technical review and expertise related to Turnpike Expansion and water quality impacts on Exceptional Value Valley Creek.

**2015 Court of Common Pleas of Delaware County Land Use Appeal No. 2015-003480, Beaver Valley.** Provided technical expertise and testimony related to land development stormwater ordinance violations and anticipated impact on water quality and flooding.

**2014 Citizen's for Pennsylvania's Future (PennFuture) vs Commonwealth of Pennsylvania, Department of Environmental Protection and Upper Gwynedd Township, EHB Docket No 2013-105-L** Provided technical expertise and recommendations for improvements related the implementation of Pennsylvania's MS4 program.

**2014 Citizens for Pennsylvania's Future v. Pittsburgh Water & Sewer Authority, et al., Civil Action No.: 2:12-cv-00943-RCM (W.D. Pa)** Provided technical expertise and testimony related to PWSA's stormwater management ordinance enforcement or lack thereof related to Buncher Development.

**2010 Teresa Perrini and Theresa Koziell v. Madison Township Board of Supervisors and Hanson Aggregates, Court of Common Pleas of Lackawanna County Civil Action No.2003 CV 5367 consolidated with 4 EQ 6001 and 07 CV 6394 consolidated with CV 110.** Provided technical expertise and testimony related to township roadway construction and impacts to stormwater and erosion and sediment discharges.

**2010 Crum Creek Neighbors v. Commonwealth of Pennsylvania, Department of Environmental Protection Appeal of Individual NPDES Permit No. PA1012306006.** Provided technical expertise and testimony related to appeal of post-construction stormwater NPDES permit and impacts to water quality.

## Expert Reports and Policy

### **Member 2019 PaDEP Office of Oil and Gas Management Erosion and Sediment Control General Permit (ESCGP-3) Prioritized Review Program Workgroup**

**2018 and 2020 NYC DEP Green Infrastructure Program Value Engineering Study - NYC Office of Management and Budget** Provided technical review and recommendations for improvements to the NYC DEP Green Infrastructure Program for implementation of green stormwater infrastructure in NYC.

**2014 25 Pa Code Chapter 78 Oil and Gas Wells** On behalf of EarthJustice, reviewed proposed changes to Chapter 78 Oil and Gas wells related to unconventional wells and provided technical recommendations and comments for Department review.

**2012 New York State Draft SGEIS and Draft SPDES Permit for High Volume Hydraulic Fracturing Regulations** On behalf of Natural Resources Defense Council, review and recommendations related to hydraulic fracturing and associated impacts on water quality in NY State should unconventional wells be permitted.

**2010 and 2013 City of Chatanooga MS4 Permit and Stormwater Manual** For the City of Chattanooga, provided technical review and recommendations related to negotiation of the City's MS4 permit, and provided technical expertise for the development of the City's stormwater manual.

**2009-2012 City of Philadelphia Longterm Control Plan** On behalf of Natural Resources Defense Council and PennFuture, provided technical review of reports, policy documents, and draft permit conditions on issues related to stormwater management, green stormwater infrastructure, water quality, stream health, and compliance with Clean Water Act and EPA Longterm Control Policy.

**Appendix B**  
**Interrogatory Responses**

UNITED-II-17 .....	Appendix B, 1
UNITED-II-21 .....	Appendix B, 2
UNITED-III-1 .....	Appendix B, 3
UNITED-III-3 .....	Appendix B, 4
UNITED-III-4 .....	Appendix B, 5
UNITED-III-5 .....	Appendix B, 6
UNITED-III-9 .....	Appendix B, 8
UNITED-III-21 .....	Appendix B, 9
UNITED-III-24 .....	Appendix B, 10
OCA-II-76 .....	Appendix B, 11
OCA-II-79 .....	Appendix B, 12
OCA-IV-17 .....	Appendix B, 13
OCA-IV-23 .....	Appendix B, 14
OCA-V-6 .....	Appendix B, 15
I&E-PS-8 .....	Appendix B, 16
OSBA-I-7 .....	Appendix B, 17

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set II in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-II-17** Of PWSA’s existing customers who will be assessed a stormwater fee, please indicate:

- a. How many of those customers are low income (i.e. customer at or below 150% FPL);
- b. How many low income customer (i.e. customers at or below 150% FPL) are respectively in Tier 1, Tier 2, and Tier 3 for the stormwater fee?
- c. How many BDP participants would be assessed a stormwater fee?
- d. How many BDP participants would respectively in Tier 1, Tier 2, and Tier 3 for the stormwater fee?

**Response:**

- a. PWSA does not have income data for its entire customer base; therefore, PWSA is unable to determine the number of customers who are  $\leq$  150% of the Federal Poverty Level.
- b. See UNITED-II-17.a.
- c. All BDP participants will be assessed a stormwater rate.
- d. See PWSA Cost of Service Study Model 4.13.21, “Bills tab”, beginning on row 273. The file is available at:  
<https://eckertseamans.sharefile.com/f/fo01ec3c-61d7-481a-b23e-d0a2f2b2c22a>

**Response provided by:** Tony Igwe, Senior Group Manager, Stormwater  
The Pittsburgh Water and Sewer Authority

**Dated:** June 28, 2021



**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set II in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-II-21** See PWSA St. 6 at 28. Ms. Quigley indicates that PWSA will provide the ability for customers to have further review of the impervious designation of their parcel. Please indicate the process by which a parcel’s impervious designation is reviewed upon a customer’s request, including but not limited:

- a. Who conducts the review of a parcel’s impervious designation;
- b. What systems and/or information is reviewed when a customer seeks review of a parcel’s impervious designation, including the last time the systems and/or information was updated;
- c. Whether a customer can ask for additional review of a parcel’s impervious designation by PWSA after an initial review and determination of the parcel’s impervious designation has been made;
- d. Whether a tenant can seek a review of a parcel’s impervious designation by PWSA;
- e. Whether a tenant is required to obtain landlord approval prior to seeking a review of a parcel’s impervious designation by PWSA.

**Response:**

- a. PWSA’s Department of Engineering will conduct a review of a parcel’s square footage of impervious surface.
- b. PWSA will utilize its Stormwater Billing Information System (SBIS) and site visits during a review of a parcel’s square footage of impervious surface.
- c. No; however, a customer can request to meet PWSA personnel at the site to discuss the review in person.
- d. In the absence of a landlord, a tenant may request that PWSA review a parcel’s square footage of impervious surface.
- e. A tenant would not be required to obtain landlord approval prior to requesting that PWSA review a parcel’s square footage of impervious surface.

**Response provided by:** Julie A. Quigley, Director of Customer Service  
The Pittsburgh Water and Sewer Authority

**Dated:** June 28, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-1**      See PWSA St. 5, Exhibit HJS-3SW (reporting “Subtotal: Stormwater Only, 4,997 [parcels], 30,809 [ERUs]); PWSA St. 6 at 22: 6-8 (referring to “6,538 parcels which . . . will become stormwater only customers”); and PWSA St. 8 at 9: 17 (referring to “approximately 6,000 stormwater-only parcels”). Please clarify how many stormwater-only parcels and customer accounts are anticipated, by customer class, and please provide the number of ERUs associated with these stormwater-only accounts, by customer class.

**Response:**

PWSA expects to aggregate the fees for two or more adjacent parcels when the parcels are under common use and ownership to limit the number of new billing accounts that have to be created. PWSA anticipates sending bills to approximately 4,997 new stormwater only customers, each of which will be composed of one or more than one adjacent parcels. The 6,538 figure is a conservative interpretation that was used for the explicit purpose of sending stormwater fee information to all potential stormwater only customers before parcel aggregation.

**Response Provided by:**      Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:**                              July 6, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-3**      See PWSA St. 5, Exh. HJS-3SW. Please describe what types of parcels are in the categories listed as “Other” under “Residential Rate (per ERU),” “Residential – CAP,” and “Residential – SW Only” (i.e., what are the common characteristics of these parcels that result in them being placed in the “Other” category), and explain why those parcels are assigned to “Other” rather than to Tier 2 despite being assigned the same number of ERUs as Tier 2.

**Response:**

This table represents impacts by water/sewer customer category, not parcel category. There are accounts categorized as Residential and CAP that are linked to non-single family residential properties (therefore charged per ERU instead of a tiered rate). These are commonly multi-family residential properties, and they are captured under the “Other” category.

**Response Provided by:**      Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:**                              July 6, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-4**      See PWSA St. 5, Exh. HJS-6SW. What types of parcels are included in the Non-Residential category “Other” that accounts for 11,588 ERUs and \$1,105,539 in revenues from the proposed stormwater rate (i.e., what are the common characteristics of these parcels that result in them being placed in the “Other” category)?

**Response:**

This table represents impacts by water/sewer customer category, not parcel category. ERUs categorized as “Other” simply reflect those tied to accounts with an “Other” customer categorization.

**Response Provided by:**      Keith Readling, Executive Vice President, Raftelis Financial Consultants Consultant to The Pittsburgh Water and Sewer Authority

**Dated:**                              July 6, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-5** See PWSA St. 5, Exh. HJS-9WW (allocating the adjustment for Gradualism – Stormwater to the wastewater costs of service for each customer class) and Exh. HJS-5SW (allocating the adjustment for Gradualism – Between WW/Storm to the stormwater costs of service for each customer class). Based on a comparison of these exhibits, it appears that the stormwater gradualism adjustment results in a net transfer of stormwater costs of service among the customer classes. For example, it appears that \$5,688,515 is removed from the stormwater costs of service for the Commercial class and \$4,629,067 is added to the wastewater cost of service for the Commercial class, resulting in a net transfer of \$1,059,448 in stormwater costs of service from the Commercial class to other customer classes. Please provide the net effect of the stormwater gradualism adjustment on the total costs of service for wastewater and stormwater that are allocated to each customer class, or explain why the stormwater gradualism adjustment does not result in a net transfer of stormwater costs of service among the customer classes.

**Response:**

Please refer to the table shown below for the net impact to the cost of service related to the \$12.4 million gradualism transfer from stormwater to wastewater.

	Stormwater Decrease (Per COS)	Wastewater Increase (Per COS)	Net Impact	Bad Debt Exp Savings	Credit Program Savings	Total Net COS Impact
Residential	\$ (5,016,846)	\$ 5,687,536	\$ 670,689	87,204	\$ (162,739)	\$ 595,155
Residential - CAP	(182,006)	-	(182,006)	(4,289)	(5,904)	(192,199)
Commercial	(5,688,515)	4,629,067	(1,059,448)	(582,863)	(184,527)	(1,826,838)
Industrial	(77,285)	279,450	202,165	(6,747)	(2,507)	192,910
Health or Education	(578,798)	1,517,864	939,065	(60,398)	(18,775)	859,892
Municipal	(285,189)	286,084	895	(22,627)	(9,251)	(30,983)
Other	(571,359)	-	(571,359)	(63,178)	(18,534)	(653,071)
	\$ (12,400,000)	\$ 12,400,000	\$ 0	\$ (652,898)	\$ (402,237)	\$ (1,055,136)

In addition to the \$12.4 million transfer, savings related to bad debt (mostly related to stormwater-only customers) and stormwater credit program costs must be considered, resulting in the total net COS impact. It is important to note that since the proposed stormwater rates are the same for all customers (based on the same rate per ERU), revenue recovery does not align exactly to the allocated cost of service.

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)  
to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in  
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)  
and R-2021-3024779 (stormwater)**

Finally, please note that the intention of the gradualism adjustment is to help reduce the risk of rate shock to PWSA customers. Non-residential customers will be particularly susceptible to swings in monthly bills under the proposed stormwater rate structure. The gradualism adjustment is designed to intentionally assign these costs back to the allocated wastewater cost of service by class such that cost recovery is more consistent to current revenue recovery.

**Response Provided by:** Harold J. Smith, Vice President, Raftelis Financial Consultants  
Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:** July 6, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-9** If all stormwater revenue requirements were to be recovered through stormwater rates (i.e., without any stormwater gradualism adjustment), please provide the resulting stormwater rate per ERU or confirm that the resulting stormwater rate per ERU, without any phase-in, credits, or discounts, would be \$12.41 per ERU per month as calculated in Exh. HJS-4SW.

**Response:**

The full stormwater rate would be \$12.41 as shown in HJS-4SW. It is important to note that PWSA would not propose a stormwater rate without a credits program nor consideration of bad debt expense, both of which are considered in the determination of the \$12.41 per ERU.

**Response Provided by:** Harold J. Smith, Vice President, Raftelis Financial Consultants  
Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:** July 6, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-21** See PWSA St. 7 at 28: 3-11 and PWSA Response to OCA-II-76. Please describe the opportunities for stakeholder input and public input, if any, that will be incorporated into the process for developing the stormwater master plan.

**Response:**

The Stormwater Master Planning process formally kicked off in June 2021. The Water Center is the project co-lead, directing water systems analysis and planning, policy and partnership design and implementation. PennPraxis is the project co-lead, directing engagement, land use planning and design, and visualization and communication of the value proposition. They are joined by subconsultants representing both national expertise as well as deep knowledge of local water issues. Community-based planning will be accomplished through meetings with established community organizations that can convey the community issues and needs. Deep public engagement of a diverse group of residents, ratepayers and stakeholders is key to the success of this project in identifying and developing a plan to address stormwater issues. The project team brings experience and methods to help Pittsburgh communities and other water stakeholder develop principles and strategies to navigate our challenges that include climate change impacts on aging and undersized wastewater and stormwater infrastructure, environmental and physical damage caused by rain and combined sewer overflow events, impacts on quality of life and water resources in the region, and seeking a better definition of responsibilities and costs for stormwater management.

The Project Team will prepare a Stakeholder Engagement Plan which incorporates stakeholder input from beginning to end. An initial “listening tour” will allow the team to connect the Stormwater Master Plan to the people of Pittsburgh and provide context for the work that needs to be done to support PWSA’s efforts to enlist agency partners, regulators and other stakeholders and ensure the work embodies the “Four P’s”: People, Place, Planet, and Performance to the greatest extent possible (the p4 principles - <http://www.p4pittsburgh.org/>). To ensure that we are focused on the most critical challenges and windows of opportunity, the team will identify and meet with a wide variety of stakeholders to learn what everyone thinks the problems are and to develop a “heat map” of what is critical, both geographically and for specific agencies and stakeholders. Special attention will be paid to engaging stakeholders and communities who are not typically at the table for stormwater conversations.

Following the development of the Interim Report and the Draft Strategies and Focus Projects, the Team will present these elements and review them with policymakers, regulators, agency partners and key players in other jurisdictions whose cooperation is needed. In a parallel set of meetings, the work will be reviewed with community and third sector leaders who represent the grass roots and other anchor institutions needed to execute a transformational water plan.

**Response Provided by:** Tony Igwe, Senior Group Manager – Stormwater  
The Pittsburgh Water and Sewer Authority

**Dated:** July 6, 2021



**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of Pittsburgh UNITED (“UNITED”), Set III in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: UNITED-III-24** See PWSA St. 7, at 33-35 (discussing stormwater credit program) and 35-37 (discussing education for customers about the stormwater rates). Do PWSA’s education and outreach materials for customers include any guidance for customers on how to manage stormwater on their property so as to become eligible for the stormwater credit program? If the answer to this question is yes or in the affirmative, please provide copies of such education or outreach materials.

**Response:**

PWSA has drafted a *Stormwater Fee Credit Manual* which includes information on:

- Credit description;
- Credit calculation;
- Details on the requirements and types of stormwater Best Management Practices (BMPs) to manage stormwater and qualify for the credit;
- The credit application and approval process;
- Requirements for maintaining the credit and credit renewal.

The manual will be finalized this summer and made available to customers. This will allow customers to prepare applications in advance of implementation of the stormwater fee, anticipated in early 2022.

**Response Provided by:** Tony Igwe, Senior Group Manager – Stormwater  
The Pittsburgh Water and Sewer Authority

**Dated:** July 6, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”) to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set II in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater) and R-2021-3024779 (stormwater)**

**Request: OCA-II-76** Refer to PWSA St. No. 7 page 28. What effect will the final Stormwater Master Plan have on the Authority’s development of its Stormwater tariff and revenue requirement? Will the strategic plan prepared by the consultant team be available to review?

**Response:**

PWSA awarded the contract to develop a comprehensive stormwater master plan in April 2021 to team co-leaders The Water Center at Penn and PennPraxis.

The Plan will become PWSA’s fundamental resource for guiding decisions regarding stormwater management and the use of green infrastructure in the most cost-effective manner for the next five years and beyond to improve water quality, alleviate flooding, reduce basement backups, create jobs, and beautify neighborhoods for safer and more resilient communities.

Additionally, the master plan will provide guidance for the short and long term, by identifying priorities and milestones to implement within the next five years which will likely impact the stormwater revenue requirement and how the proposed stormwater fee will be used to fund stormwater management, pending consent decree with the Environmental Protection Agency (EPA), and other regulatory mandates. It will also include a long-term outlook with milestones for the next 25 years that will help to consider the effects of climate change. These solutions will protect our ratepayers from the impacts of stormwater while providing greater sustainability and improved resiliency throughout Pittsburgh.

It is anticipated that the final recommendations and report will be available in the Summer of 2022.

**Response Provided by:** Tony Igwe, Senior Group Manager – Stormwater  
The Pittsburgh Water and Sewer Authority

**Dated:** May 17, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)  
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set II in  
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)  
and R-2021-3024779 (stormwater)**

**Request: OCA-II-79** Refer to PWSA St. No. 8 page 7. Please provide the analysis that was used to develop the Authority’s 1,650 square foot parcel with respect to the median impervious area which was used for the proposed ERU.

**Response:**

To establish the ERU, Raftelis performed an analysis of measured impervious area on parcel classifications that could be treated as similar property types. Based on parcel and existing sewer/water account characteristics, properties that are classified as single family residential (SFR) for the sake of this analysis and future billing purposes includes townhouses, row houses, mobile homes, single family homes, and two-, three- and four-family homes. These types of properties are substantially similar in their impervious area amounts, so it is reasonable to treat them similarly under a simplified residential rate structure. Raftelis performed a statistical analysis on the impervious area values for residential properties. The Raftelis team found that the median impervious area found on these residential parcels is approximately 1,650 square feet.

The distribution of impervious area for single-family residential properties shown on a frequency histogram is displayed in Figure 1. Granular data was provided in response to OSBA-I-8.

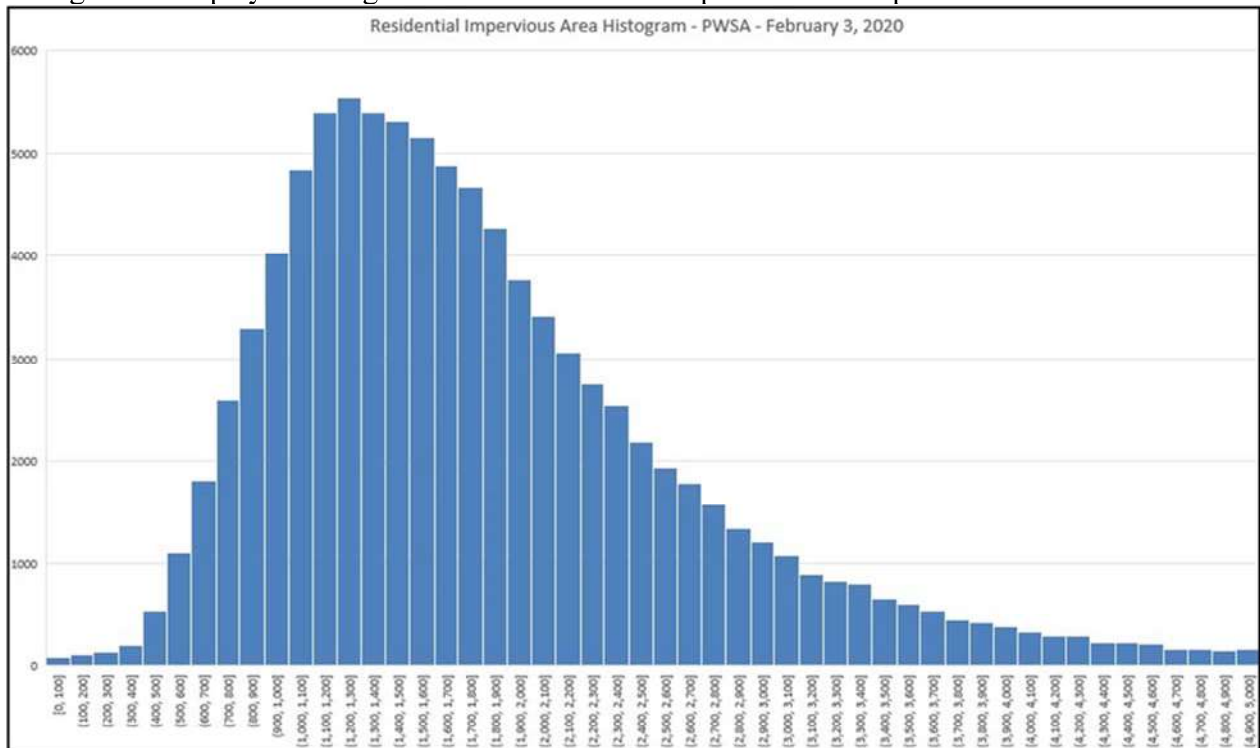


Figure 1: PWSA Service Area Residential Impervious Area Histogram

**Response Provided by:** Keith Reading, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:** May 17, 2021

**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-17** Reference: PWSA COSA Model (Excel file: PWSA Cost of Service Study Model 4.13.21 (00306955x97486).xlsm), *Phase\_In* tab. Please explain the rationale for the 25% phase-in for stormwater, as opposed to the 50% phase-in for water and wastewater.

**Response:**

The phase in for stormwater is 75% (or -25%). The rationale for making stormwater phase in higher in the first step is because the stormwater fee is starting from \$0, unlike water and wastewater. Therefore, the second step is less of an increase with a greater first step.

**Response Provided by:** Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:** May 18, 2021

**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-23** Reference: PWSA COSA Model (Excel file: PWSA Cost of Service Study Model 4.13.21 (00306955x97486).xlsm). On the *ScenarioManager* tab cell G90, please provide an explanation and supporting workpaper showing the calculation of \$12,400,000 as the gradualism adjustment that reduces the stormwater revenue requirement and increases the sanitary wastewater revenue requirement.

**Response:**

Pages 44 and 45 of Mr. Smith’s testimony provide general explanation of the purpose of this adjustment. Consistent with other responses provided in these interrogatories, PWSA implemented this \$12.4 million adjustment to balance competing pricing objectives. Given that the stormwater fee is brand new, PWSA wanted to roll the fee out such that the impacts to customers are not too severe in a single year.

Raftelis performed fee benchmarking and determined that a total annual fee of less than \$100 seemed reasonable because 1) the level of fees incurred by customers does not correlate with water and sewer usage, which creates varying and sometimes severe customer impacts, 2) the level of stormwater services provided by PWSA will not be increased dramatically with the rollout of the fee, and 3) for customer acceptance reasons, PWSA did not want to be significantly above peers who have a mature stormwater program. Raftelis determined that reducing the revenue requirement by 1/3<sup>rd</sup> (roughly \$12.4 million) results in a fee that met this target. Finally, the lower fee also reduces costs (or forgone revenue) related to stormwater-only bad debt and the credit program.

**Response Provided by:** Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Harold J. Smith, Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:** May 18, 2021

**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-6** Reference: PWSA St. 7 (Igwe), p. 33, lines 10-14. Concerning the lack of a municipality fee:

- a. Please explain in detail why PWSA chose not to include a rate for Contributing Municipality Service.
- b. How will the costs associated with stormwater flowing from municipal facilities, such as roads and sidewalks, be collected by PWSA?
- c. Under PWSA’s agreement with the City of Pittsburgh, is PWSA permitted to charge the City a stormwater fee for City-owned buildings? If so, is that fee required to be phased in during 2022 and 2023 (and if so, by how much)?
- d. Under PWSA’s agreement with the City of Pittsburgh, is PWSA permitted to charge the City a stormwater fee for City-owned parks? If so, is that fee required to be phased in during 2022 and 2023 (and if so, by how much)?

**Response:**

- a. PWSA chose not to include any charges for Contributing Municipality Service at this time for 2 major reasons. (1) stormwater from municipalities flow into a combined sewer system that the City of Pittsburgh developed decades ago, in some cases by enclosing creeks in which the stormwater originally discharged. (2) Future control of combined sewer and separate sanitary sewer overflows may involve PWSA and upstream municipalities working together to provide parallel relief sewers to address these wet weather issues. When such projects are developed, a cost sharing model that includes the upstream communities will be developed. With this approach, PWSA and these municipalities will work together to provide adequate stormwater management to solve wet weather issues.
- b. See response to a.
- c. The approach for charging the Parks will be the same as presented in 6.c. above. It should be noted that exceptions can be made for parks where GI projects can be placed to assist in overall stormwater management.

**Response Provided by:** Tony Igwe, Senior Group Manager – Stormwater  
The Pittsburgh Water and Sewer Authority

**Dated:** May 27, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)  
to the Interrogatories of the Bureau of Investigation and Enforcement (“I&E”), PS - Set I  
in Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)  
and R-2021-3024779 (stormwater)**

**Request: I&E-PS-8** Reference PWSA Statement No. 7, p. 13, where witness Igwe indicates that PWSA is developing an Integrated Watershed Management (“IWM”) Plan. Provide the prioritization criteria of the projects in the IWM Plan.

**Response:**

The SMR IWM Plan identified strategies for project selection to address peak flows and their detrimental impacts, water quality issues, and aquatic ecosystem impairments. As such, the strategies used to identify projects for the IWM Plan are as follows:

- Prioritize projects at the upstream end of the watershed and work downstream.
- Reduce peak flows and their detrimental impacts in the watershed.
- Stabilize and restore streambanks to improve aquatic habitat, flow regime.
- Use green stormwater infrastructure to reduce sediment and phosphorus from landslide sources.
- Eliminate sources of dry and wet weather fecal coliform bacteria getting into the stream.
- Rehabilitate infrastructure that may allow sewage to enter the stream or allows I/I into the separate sanitary sewer system.
- Treat the more substantial acid mine drainage sources in the watershed.

**Response Provided by:** Tony Igwe, Senior Group Manager – Stormwater  
The Pittsburgh Water and Sewer Authority

**Dated:** June 1, 2021

**Response of the Pittsburgh Water and Sewer Authority (“PWSA”)  
to the Interrogatories of the Office of Consumer Advocate (“OCA”), Set I in  
Docket Nos. R-2021-3024773 (water); R-2021-3024774 (wastewater)  
and R-2021-3024779 (stormwater)**

**Request: OSBA-I-7** Please provide support for PWSA’s assumed Stormwater Only bad debt expense level of 40.0%.

**Response:**

Fees charged to stormwater only accounts represent the only fees a new customer is receiving from PWSA. Generally, stormwater only fees are harder to collect, especially when the fee is new. This may be due to customers missing bills and notices from PWSA or simply not paying, believing enforcement options to be limited.

This pattern has been observed in peer utilities. Raftelis reviewed collection data from Philadelphia Water Department and Northeast Ohio Regional Sewer District. For each, the stormwater only collection rate for the current stormwater fee in the early years of the fee is around 60%. Thus, Raftelis believes a 60% collection rate assumption is reasonable for stormwater fees associated with new, stormwater only accounts, and this figure was used in financial modeling.

**Response Provided by:** Keith Readling, Executive Vice President, Raftelis Financial Consultants  
Consultant to The Pittsburgh Water and Sewer Authority

**Dated:** May 11, 2021



**BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION**


<b>Pennsylvania Public Utility Commission</b>	:	
	:	
v.	:	<b>Docket Nos. R-2021-3024773</b>
	:	<b>R-2021-3024774</b>
<b>Pittsburgh Water and Sewer Authority</b>	:	<b>R-2021-3024779</b>
	:	

**VERIFICATION**

I, Michele C. Adams, hereby state that the facts set forth by me in the foregoing documents:

- Pittsburgh United Statement 2, the Direct Testimony of Michele C. Adams on behalf of Pittsburgh United; and
- Pittsburgh United Statement 2-SR, the Surrebuttal Testimony of Michele C. Adams on behalf of Pittsburgh United

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 made herein are subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsifications to authorities).

DocuSigned by:  
  
 5BD3B53E676A442...

Michele C. Adams  
Witness on behalf of Pittsburgh United

Dated: 8/6/2021

**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

- OCA St. No. 1 – Direct Testimony of Dante Mugrace - Schedules DM-1 to DM-20
- OCA St. No. 2 - Direct Testimony of David S. Habr - Exhibits DSH-1 through DSH-5
- 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*

DEANNE M. O'DELL ESQUIRE  
ECKERT SEAMANS CHERIN &  
MELLOTT, LLC  
213 MARKET STREET, 8<sup>th</sup> FLOOR  
HARRISBURG PA 17101  
717.255.3744  
[dodell@eckertseamans.com](mailto:dodell@eckertseamans.com)  
Accepts eService  
(Representing PWSA)

LAUREN M BURGE ESQUIRE  
ECKERT SEAMANS CHERIN &  
MELLOTT, LLC  
600 GRANT STREET 44TH FLOOR  
PITTSBURGH PA 15219  
412.566.2146  
[lburge@eckertseamans.com](mailto:lburge@eckertseamans.com)  
Accepts eService  
(Representing PWSA)

GINA MILLER ESQUIRE  
PA PUC BUREAU OF  
INVESTIGATION AND ENFORCEMENT  
400 NORTH STREET  
HARRISBURG PA 17120  
717.783.8754  
[ginmiller@pa.gov](mailto:ginmiller@pa.gov)  
Accepts eService

ERIN L. GANNON ESQUIRE  
LAUREN E. GUERRA ESQUIRE  
CHRISTINE M. HOOVER ESQUIRE  
OFFICE OF CONSUMER ADVOCATE  
555 WALNUT STREET, 5<sup>th</sup> FLOOR  
FORUM PLACE  
HARRISBURG PA 17101  
717.783.5048  
[egannon@paoca.org](mailto:egannon@paoca.org)  
[lguerra@paoca.org](mailto:lguerra@paoca.org)  
[choover@paoca.org](mailto:choover@paoca.org)  
Accepts eService



RIA PEREIRA ESQUIRE  
ELIZABETH R. MARX ESQUIRE  
JOHN SWEET ESQUIRE  
LAUREN BERMAN ESQUIRE\*  
PA UTILITY LAW PROJECT  
118 LOCUST STREET  
HARRISBURG PA 17101  
717.710.3839  
[rpereirapulp@palegalaid.net](mailto:rpereirapulp@palegalaid.net)  
[emarx@pautilitylawproject.org](mailto:emarx@pautilitylawproject.org)  
[jsweetpulp@palegalaid.org](mailto:jsweetpulp@palegalaid.org)  
[pulp@palegalaid.net](mailto:pulp@palegalaid.net)  
Accepts eService  
(Representing Pittsburgh United)

ERIN FURE ESQUIRE\*  
TERESA REED WAGNER\*  
OFFICE OF SMALL BUSINESS ADVOCATE  
FORUM PLACE  
555 WALNUT STREET 1ST FLOOR  
HARRISBURG PA 17101  
717.783.2525  
[efure@pa.gov](mailto:efure@pa.gov)  
[tereswagne@pa.gov](mailto:tereswagne@pa.gov)

WHITNEY E. SNYDER ESQUIRE  
THOMAS J. SNISCAK ESQUIRE  
KEVIN J. MCKEON ESQUIRE  
HAWKE, MCKEON AND SNISCAK, LLP  
100 N 10TH STREET  
HARRISBURG PA 17101  
717.236.1300  
[wesnyder@hmslegal.com](mailto:wesnyder@hmslegal.com)  
[tjsniscak@hmslegal.com](mailto:tjsniscak@hmslegal.com)  
[kjmckeon@hmslegal.com](mailto:kjmckeon@hmslegal.com)  
Accepts eService  
(Counsel for the City of Pittsburgh)

YVONNE HILTON ESQUIRE\*  
CITY OF PITTSBURGH  
313 CITY-COUNTY BUILDING  
414 GRANT STREET  
PITTSBURGH PA 15219  
412.255.2009  
[yvonne.hilton@pittsburghpa.gov](mailto:yvonne.hilton@pittsburghpa.gov)

JOHN F. DOHERTY ESQUIRE  
LAWRENCE H. BAUMILLER ESQUIRE  
CITY OF PITTSBURGH DEPARTMENT OF LAW  
414 GRANT STREET  
313 CITY COUNTY BUILDING  
PITTSBURGH PA 15220  
412.255.2016  
[john.doherty@pittsburghpa.gov](mailto:john.doherty@pittsburghpa.gov)  
[lawrence.baumiller@pittsburghpa.gov](mailto:lawrence.baumiller@pittsburghpa.gov)  
Accepts eService

PETER DEMARCO ESQUIRE\*  
JARED J. THOMPSON ESQUIRE\*  
NATURAL RESOURCES DEFENSE COUNCIL  
1152 15TH STREET NORTHWEST, SUITE 300  
WASHINGTON DC 20005  
202.513.2267  
[pdemarco@nrdc.org](mailto:pdemarco@nrdc.org)  
[jared.thompson@nrdc.org](mailto:jared.thompson@nrdc.org)

**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:	:	

**ERRATA**

A review of the document issued in the above-captioned proceedings on August 17, 2021, revealed an error in the document. Specifically, Appendix A failed to include the evidence moved into the record at the August 13, 2021, hearing by Pittsburgh United and admitted into the record by the presiding officer. This error has been corrected with a new heading added to Appendix A listing the written, pre-served testimony submitted by Pittsburgh United along with accompanying exhibits and appendices, witness verifications, as well as the Joint Stipulation of Pittsburgh United and the Pittsburgh Water and Sewer Authority and United/PWSA Joint Stipulation Appendix A



**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 18, 2021

\_\_\_\_\_  
/s/  
Eranda Vero  
Administrative Law Judge

## Appendix A

### Pittsburgh Water and Sewer Authority

#### 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

- OCA St. No. 1 – Direct Testimony of Dante Mugrace - Schedules DM-1 to DM-20
- OCA St. No. 2 - Direct Testimony of David S. Habr - Exhibits DSH-1 through DSH-5
- 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

**Pittsburgh United**

Direct Testimony

- Pittsburgh United St. No. 1 - Direct Testimony of Harry Geller – Pittsburgh United Exhibit 1 - Appendices A and B.
- Pittsburgh United St. No. 2 - Direct Testimony of Michele C. Adams – Appendices A and B.

Rebuttal Testimony

- Pittsburgh United St. No. 1-R - Rebuttal Testimony of Harry Geller

Surrebuttal Testimony

- Pittsburgh United St. No. 1-SR - Surrebuttal Testimony of Harry Geller
- Pittsburgh United St. No. 2-SR - Surrebuttal Testimony of Michele C. Adams

- Verification of Pittsburgh United expert witness, Harry Geller
- Verification of Pittsburgh United expert witness, Michele C. Adams
- Joint Stipulation of Pittsburgh United and the Pittsburgh Water and Sewer Authority and United/PWSA Joint Stipulation Appendix A

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

*Revised: August 9, 2021*

DEANNE M. O'DELL ESQUIRE  
ECKERT SEAMANS CHERIN &  
MELLOTT, LLC  
213 MARKET STREET, 8<sup>th</sup> FLOOR  
HARRISBURG PA 17101  
717.255.3744  
[dodell@eckertseamans.com](mailto:dodell@eckertseamans.com)  
Accepts eService  
(Representing PWSA)

LAUREN M BURGE ESQUIRE  
ECKERT SEAMANS CHERIN &  
MELLOTT, LLC  
600 GRANT STREET 44TH FLOOR  
PITTSBURGH PA 15219  
412.566.2146  
[lburge@eckertseamans.com](mailto:lburge@eckertseamans.com)  
Accepts eService  
(Representing PWSA)

GINA MILLER ESQUIRE  
PA PUC BUREAU OF  
INVESTIGATION AND ENFORCEMENT  
400 NORTH STREET  
HARRISBURG PA 17120  
717.783.8754  
[ginmiller@pa.gov](mailto:ginmiller@pa.gov)  
Accepts eService

ERIN L. GANNON ESQUIRE  
LAUREN E. GUERRA ESQUIRE  
CHRISTINE M. HOOVER ESQUIRE  
OFFICE OF CONSUMER ADVOCATE  
555 WALNUT STREET, 5<sup>th</sup> FLOOR  
FORUM PLACE  
HARRISBURG PA 17101  
717.783.5048  
[egannon@paoca.org](mailto:egannon@paoca.org)  
[lguerra@paoca.org](mailto:lguerra@paoca.org)  
[choover@paoca.org](mailto:choover@paoca.org)  
Accepts eService

RIA PEREIRA ESQUIRE  
ELIZABETH R. MARX ESQUIRE  
JOHN SWEET ESQUIRE  
LAUREN BERMAN ESQUIRE\*  
PA UTILITY LAW PROJECT  
118 LOCUST STREET  
HARRISBURG PA 17101  
717.710.3839  
[rpereirapulp@palegalaid.net](mailto:rpereirapulp@palegalaid.net)  
[emarx@pautilitylawproject.org](mailto:emarx@pautilitylawproject.org)  
[jsweetpulp@palegalaid.org](mailto:jsweetpulp@palegalaid.org)  
[pulp@palegalaid.net](mailto:pulp@palegalaid.net)  
Accepts eService  
(Representing Pittsburgh United)

ERIN FURE ESQUIRE\*  
TERESA REED WAGNER\*  
OFFICE OF SMALL BUSINESS ADVOCATE  
FORUM PLACE  
555 WALNUT STREET 1ST FLOOR  
HARRISBURG PA 17101  
717.783.2525  
[efure@pa.gov](mailto:efure@pa.gov)  
[tereswagne@pa.gov](mailto:tereswagne@pa.gov)

WHITNEY E. SNYDER ESQUIRE  
THOMAS J. SNISCAK ESQUIRE  
KEVIN J. MCKEON ESQUIRE  
HAWKE, MCKEON AND SNISCAK, LLP  
100 N 10TH STREET  
HARRISBURG PA 17101  
717.236.1300  
[wesnyder@hmslegal.com](mailto:wesnyder@hmslegal.com)  
[tjsniscak@hmslegal.com](mailto:tjsniscak@hmslegal.com)  
[kjmckeon@hmslegal.com](mailto:kjmckeon@hmslegal.com)  
Accepts eService  
(Counsel for the City of Pittsburgh)

YVONNE HILTON ESQUIRE\*  
CITY OF PITTSBURGH  
313 CITY-COUNTY BUILDING  
414 GRANT STREET  
PITTSBURGH PA 15219  
412.255.2009  
[yvonne.hilton@pittsburghpa.gov](mailto:yvonne.hilton@pittsburghpa.gov)

JOHN F. DOHERTY ESQUIRE  
LAWRENCE H. BAUMILLER ESQUIRE  
CITY OF PITTSBURGH DEPARTMENT OF LAW  
414 GRANT STREET  
313 CITY COUNTY BUILDING  
PITTSBURGH PA 15220  
412.255.2016  
[john.doherty@pittsburghpa.gov](mailto:john.doherty@pittsburghpa.gov)  
[lawrence.baumiller@pittsburghpa.gov](mailto:lawrence.baumiller@pittsburghpa.gov)  
Accepts eService

PETER DEMARCO ESQUIRE\*  
JARED J. THOMPSON ESQUIRE\*  
NATURAL RESOURCES DEFENSE COUNCIL  
1152 15TH STREET NORTHWEST, SUITE 300  
WASHINGTON DC 20005  
202.513.2267  
[pdemarco@nrdc.org](mailto:pdemarco@nrdc.org)  
[jared.thompson@nrdc.org](mailto:jared.thompson@nrdc.org)