



September 19, 2019

The Honorable Mark A. Hoyer
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Re: Implementation of Chapter 32 of the Public Utility Code Re Pittsburgh Water and Sewer Authority, Docket Nos. M-2018-2640802, -2640803

Petition of the Pittsburgh Water and Sewer Authority for Approval of Its Long-Term Infrastructure Improvement Plan, Docket Nos. P-2018-3005037, -3005039

Dear Judge Hoyer and Judge Johnson,

Enclosed, please find the **Main Brief of Pittsburgh UNITED**, which was filed electronically with the Commission today in the above noted proceeding. Copies have been served on all parties of record consistent with the attached Certificate of Service.

Please do not hesitate to contact me with any questions or concerns.

Respectfully submitted,

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CC: Certificate of Service
Secretary Rosemary Chiavetta (Cover Letter and Certificate of Service only)

Enc.

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Implementation of Chapter 32 of the	:	Docket No.	M-2018-2640802
Public Utility Code Re Pittsburgh	:		M-2018-2640803
Water and Sewer Authority	:		

Petition of the Pittsburgh Water and Sewer	:	Docket No.	P-2018-3005037
Authority for Approval of Its Long-Term	:		P-2018-3005039
Infrastructure Improvement Plan	:		

Certificate of Service

I hereby certify that I have this day served copies of the **Main Brief of Pittsburgh UNITED** upon the parties of record in the above-captioned proceeding in accordance with the requirements of 52 Pa. Code § 1.54 in the manner and upon the persons listed below.

VIA FIRST CLASS MAIL AND EMAIL

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I. INTRODUCTION AND STATEMENT OF THE CASE

The Pittsburgh Water and Sewer Authority (PWSA) is delivering water to thousands of homes through corroding lead service lines, placing customers at risk of drinking and cooking with lead-contaminated water. PWSA failed to prevent a spike in lead levels that first gained widespread attention in 2016. Three years later, it has yet to control lead release from its infrastructure. Those failures have drawn administrative and criminal enforcement actions from state authorities and eroded the trust of PWSA's customers.

In providing drinking water to Pittsburgh residents, PWSA must comply with state and federal law, including the standards and rules of the Pennsylvania Public Utility Commission (Commission). PWSA was brought under the jurisdiction of the Commission in part because of its ineffective response to its lead crisis. As part of PWSA's transition to Commission jurisdiction, it must present a Compliance Plan and Long-Term Infrastructure Improvement Plan (LTIIP) that will ensure adequate, efficient, safe, reliable, and reasonable service to its customers. By Commission order, these plans must include a comprehensive strategy for addressing lead contamination.

PWSA's Compliance Plan and LTIIP, together with a proposed partial settlement to this proceeding, will improve PWSA's current lead remediation efforts. They will not, however, satisfy PWSA's obligation to ensure safe service to its customers. Lead service lines must be removed from PWSA's system to protect customers; as long as a home receives drinking water through a lead service line, its residents remain at risk of lead exposure. Yet, PWSA proposes a lead service line replacement program that effectively denies assistance to many low and moderate income customers who are at highest risk of lead exposure. This is because PWSA plans to replace many lead service lines through a proposed income-based reimbursement

program that will require customers to pay thousands of dollars up front for a new service line. Customers who cannot already afford a lead pipe replacement will not receive one through this program. PWSA's income-based reimbursement program, therefore, does not satisfy the utility's obligation to provide customers with safe and reasonable service. Access to safe water should not depend on a customer's ability to pay up front for lead pipe replacement.

The evidence shows that PWSA could avoid harming low and moderate income customers, remove more lead pipes, and reduce its administrative burden if it offered to replace lead service lines for free. PWSA already has a model for this simpler, fairer approach to lead service line replacement: its neighborhood-based program. Over the past two years, that program has replaced thousands of lead service lines across Pittsburgh, achieved high customer participation rates, and lowered costs by taking advantage of economies of scale. Despite this success and without an effective alternative, PWSA plans to terminate the neighborhood-based program in 2020.

Opposed by the Bureau of Investigation and Enforcement, the Office of Consumer Advocate, and Pittsburgh UNITED, PWSA's income-based reimbursement program does not ensure adequate, efficient, safe, reliable, and reasonable service. The Commission should reject PWSA's petition to approve its Compliance Plan and LTIP and direct PWSA either to continue the neighborhood-based program or develop a new program that offers free lead service line replacements to all customers.

II. PROCEDURAL HISTORY

A. Background of PWSA Transition to Commission Jurisdiction

1. Lead Contamination in Drinking Water Distributed by PWSA

Lead is a dangerous neurotoxin.¹ It can harm nearly all of the body's functions and organs and is particularly damaging to the neurological and cardiovascular systems.² As Pittsburgh UNITED's expert witness Dr. Bruce Lanphear has testified, "fetuses, infants, and children are uniquely vulnerable to lead toxicity because their brains are still developing," and they tend to consume more water and absorb a significantly higher percentage of ingested lead than adults.³ Lead interferes with the development of nerve connections and can cause irreversible damage to children's brains.⁴ Increased blood lead levels can result in lower IQs, diminished academic achievement, increased risk of attention-related disorders, increased risk of problem behaviors, stunted growth, and impaired hearing.⁵ Childhood lead exposure is associated with lower lifetime earnings and higher health care expenses, need for special education, and crime.⁶ Adults exposed to lead can suffer chronic kidney disease and increased blood pressure.⁷ There is no safe level of lead exposure.⁸

The health risks from lead-contaminated water are not shared equally by PWSA's customers. About two percent of Allegheny County children under six who received a blood lead level test had elevated blood lead levels in 2016 and 2017.⁹ In some Pittsburgh neighborhoods,

¹ Pittsburgh UNITED St. C-3, at 6.

² Id. at 8.

³ Id. at 6-7.

⁴ Id. at 6, 8.

⁵ Id. at 8.

⁶ Pittsburgh UNITED St. C-1SUPP-R, at 12.

⁷ Pittsburgh UNITED St. C-3, at 9.

⁸ Id.

⁹ Id. at 13.

however, over ten percent of tested children had elevated blood lead levels.¹⁰ Poor, Black, and Latinx Pittsburghers face a disproportionate risk of lead exposure. This is in part because they are more likely to live in older housing and rental housing, and that housing is more likely to have lead pipes, lead-bearing interior plumbing, and lead paint.¹¹

Lead enters PWSA's drinking water primarily through corroding lead service lines.¹² Water distributed by PWSA does not contain detectable amounts of lead when it leaves the treatment plant.¹³ But, as water travels through lead service lines that connect PWSA's water distribution mains in the street to customers' homes, the water can cause service lines to corrode, releasing lead into the drinking water that eventually flows out of customers' taps.¹⁴ While Allegheny County banned the installation of lead service lines in 1969, and the federal government followed suit in 1986, thousands of lead service lines remain in PWSA's system.¹⁵

PWSA monitors and controls for lead levels in its drinking water pursuant to the federal Lead and Copper Rule and regulations issued by the Pennsylvania Department of Environmental Protection (DEP).¹⁶ The Lead and Copper Rule sets a health-based "maximum contaminant level goal" of zero lead in tap water.¹⁷ The Rule attempts to achieve this goal not by setting a maximum limit on the amount of lead in drinking water, but by requiring water systems to use treatment techniques designed to minimize the amount of lead in tap water.¹⁸ Specifically, the

¹⁰ Id. at 14.

¹¹ Id. at 7-8, 13; Pittsburgh UNITED St. C-3SUPP-R, at 4-5.

¹² Pittsburgh UNITED St. C-2, at 6. Galvanized service lines and interior plumbing, lead solder, and lead-bearing internal fixtures are other potential sources of drinking water lead contamination, though they are generally a less significant source than lead service lines. Id. at 6 n.7.

¹³ Pittsburgh UNITED St. C-2, at 6.

¹⁴ Id.

¹⁵ PWSA St. C-1SD, Stip Doc. 4, at 13; 42 U.S.C. § 300g-6; PWSA Hearing Ex. 1, App. C, at 28 (hereinafter "LTIP").

¹⁶ 40 C.F.R. §§ 141.80 – 141.91; 25 Pa. Code §§ 109.1101 – 109.1108.

¹⁷ 56 Fed. Reg. 26460, 26467 (June 7, 1991); see also 42 U.S.C. § 300g-1(b)(4)(A).

¹⁸ 56 Fed. Reg. at 26472-73, 26477.

Lead and Copper Rule requires systems to install and maintain “optimal” corrosion control treatment.¹⁹ Corrosion control treatment is optimized if it minimizes lead concentrations in customers’ tap water.²⁰

Mandatory tap water sampling at homes with lead pipes helps determine whether corrosion control treatment is effective.²¹ If more than 10 percent of samples in a given six-month monitoring period have lead concentrations higher than 15 parts per billion (ppb), the system’s drinking water exceeds the federal “lead action level.”²² When a water system exceeds the lead action level, it must then perform designated response actions to protect its customers from lead exposure, including replacing a portion of the system’s lead service lines with pipes that are “lead free.”²³ However, as Dr. Lanphear has testified, the federal lead action level does not “establish[] a safe, health-based level of lead exposure. Even low levels of lead exposure can cause death . . . and diminish IQ levels.”²⁴ “[T]here is no safe level of exposure to lead.”²⁵

In 2014, PWSA changed its corrosion control treatment system without obtaining DEP approval or following the Lead and Copper Rule’s required multi-step process.²⁶ In June 2016, PWSA reported that it exceeded the lead action level for the first time when 10 percent of its tap water samples contained at least 22 ppb of lead.²⁷ As shown by the table below, PWSA’s lead levels have remained alarmingly high.

¹⁹ 40 C.F.R. § 141.82(e), (g).

²⁰ *Id.* § 141.2.

²¹ *Id.* § 141.86(a)(3); 25 Pa. Code § 109.1103(g)(2).

²² 40 C.F.R. § 141.80(c)(1), (3).

²³ 40 C.F.R. § 141.84; 42 U.S.C. § 300g-6(a)(1)(A).

²⁴ Pittsburgh UNITED St. C-3, at 9.

²⁵ *Id.* at 11.

²⁶ Pittsburgh UNITED St. C-2, Appendix C, 3, DEP Consent Order ¶ G.

²⁷ Pittsburgh UNITED St. C-2, at 8.

Table 1: PWSA Lead Monitoring Results, 2016 to Present²⁸

Sampling Period	Lead Concentration at 90th Percentile
January 1 – June 30, 2016	22 ppb
July 1 – December 31, 2016	18 ppb
January 1 – June 30, 2017	15 ppb
July 1 – December 31, 2017	21 ppb
January 1 – June 30, 2018	10 ppb
July 1 – December 31, 2018	20 ppb
January 1 – June 30, 2019	17.5 ppb

Lead concentrations in PWSA’s drinking water have exceeded the lead action level four more times since the first half of 2016, including during the most recent six-month monitoring period.

2. PWSA’s Initial Response and the DEP Consent Order

PWSA’s initial response to elevated lead levels did not comply with state or federal law. The Lead and Copper Rule and DEP regulations required PWSA to prepare an inventory of all the lead service lines in its system within three months of exceeding the lead action level and to replace seven percent of those service lines within one year.²⁹ PWSA did neither.³⁰ Making matters worse, PWSA performed a raft of partial lead service line replacements, where it removed the “public-side” service line (the portion of the service line between the water main and the curb box) but not the “private-side” service line (the portion between the curb box and the residence).³¹ Partial lead service line replacements can cause dangerous spikes in tap water lead levels by disturbing the protective internal pipe coating (called “scale”) that can otherwise help to reduce lead exposure at the tap.³² PWSA failed to provide 60 homes with required pre-replacement notification to warn residents that lead levels could spike after the partial

²⁸ *Id.*; Pittsburgh UNITED St. C-2SUPP-R, at 8.

²⁹ 25 Pa. Code § 109.1107(a)(6); 40 C.F.R. §§ 141.84(a), (b)(1), 141.90(e).

³⁰ Pittsburgh UNITED St. C-2, Appendix C, 5-7, DEP Consent Order ¶¶ P-U.

³¹ Pittsburgh UNITED St. C-2, at 9-10.

³² *Id.* at 10, 22-24; Pittsburgh UNITED C-3, at 19-21.

replacement, and also failed to conduct required post-replacement sampling at 149 residences.³³ Post-replacement tap water testing at other residences showed that PWSA's partial lead service line replacements were causing elevated lead levels. PWSA suspended those replacements in June 2017.³⁴

In November 2017, PWSA and DEP entered into a Consent Order and Agreement. The Consent Order contained three main provisions. First, it set out a process for optimizing PWSA's corrosion control treatment.³⁵ Second, it required PWSA to compile a comprehensive inventory of lead service lines in its system. DEP ordered PWSA to make an initial estimate of the number of residential lead service lines by March 31, 2018, and to create a full inventory by December 31, 2020.³⁶ PWSA initially posited that it may have more than 19,000 public-side lead service lines in its system as of June 2016; it has since lowered that estimate to about 12,200.³⁷ But PWSA still does not have an accurate estimate of the number of lead service lines in its system because it has not completed a comprehensive inventory of its service line materials.³⁸

Third, the Consent Order established a schedule for PWSA's lead service line replacements. DEP ordered PWSA to replace roughly 1,300 lead service lines by June 30, 2018.³⁹ PWSA was required to replace an additional seven percent of the lead service lines in its system by December 31, 2018, and to continue replacing another seven percent each year thereafter until PWSA's monitoring results fall below the lead action level for two consecutive

³³ Pittsburgh UNITED St. C-2, Appendix C, 7-8, DEP Consent Order ¶¶ V-W; 25 Pa. Code § 109.1107(d)(4).

³⁴ Pittsburgh UNITED St. C-2, at 10; PWSA St. C-1SD, Stip Doc-4, at 5 (noting that tap water testing at one home following a partial lead service line replacement showed lead concentrations of 1,400 ppb); see also Pittsburgh UNITED St. C-3, at 19-20.

³⁵ Pittsburgh UNITED St. C-2, Appendix C, 11-13, DEP Consent Order ¶ 3.b.

³⁶ Pittsburgh UNITED St. C-2, Appendix C, 13-14, DEP Consent Order ¶ 3.c.ii, c.iii.

³⁷ Pittsburgh UNITED St. C-2, Appendix C, 7, DEP Consent Order ¶ T; LTIIP, at 28.

³⁸ Pittsburgh UNITED St. C-2, at 29-32.

³⁹ Pittsburgh UNITED St. C-2, Appendix C, 14, DEP Consent Order ¶ 3.d.

six-month monitoring periods.⁴⁰ Because lead levels in PWSA’s drinking water remain high, PWSA must replace another seven percent of its lead service lines by June 30, 2020.

After entering into the Consent Order with DEP, PWSA reformed its approach to lead remediation. PWSA presently conducts most lead service line replacements through a neighborhood-based program.⁴¹ Using historical records and inspection results, PWSA identifies homes in contiguous multi-block areas likely to have public-side lead service lines.⁴² For homes with “full lead service lines”—where both the public- and private-side service lines are made of lead—PWSA seeks authorization from the property owner to replace the private-side lead service line at the same time it replaces the public-side line, at no direct cost to the customer.⁴³ By offering free private-side replacements, PWSA has increased the number of full lead service lines replaced—removing more lead from its system—while also avoiding dangerous partial replacements. The neighborhood-based approach also takes advantage of economies of scale and avoids repeatedly digging up streets and sidewalks because contractors deploy to each work order area only once, replacing all public-side-only and full lead service lines at the same time.⁴⁴ In 2018, the neighborhood-based program replaced about 1,300 full lead service lines and 700 public-side-only lead service lines.⁴⁵ By mid-2020, PWSA expects to replace another 3,400 full lead lines and 1,000 public-side-only lines.⁴⁶

⁴⁰ Pittsburgh UNITED St. C-2, Appendix C, 14-15, DEP Consent Order ¶ 3.e.i, e.ii.

⁴¹ See LTIIP, at 28 (“LSLR Program” in Table 2-7 refers to the neighborhood-based program); PWSA St. C-1, at 51. PWSA also replaces lead service lines in response to water main and service line leaks and through its Community Environmental Project. Pittsburgh UNITED St. C-2, at 11.

⁴² Pittsburgh UNITED St. C-2, at 10.

⁴³ *Id.* at 10, 35.

⁴⁴ *Id.* at 27.

⁴⁵ PWSA St. C-1, at 53. Because all 1,324 private-side lead service line replacements were conducted as part of full lead service line replacements, the number of public-side-only replacements can be calculated by subtracting the number of private-side replacements (1,324) from the number of public side replacements (2,050).

⁴⁶ *Id.* at 56-57. See *supra* n.45 for how the number of full and public-side-only lead service line replacements was calculated.

The neighborhood-based program, however, does not replace all lead service lines located in a work order area. PWSA refuses to remove “private-side-only” lead service lines (where the private side is lead but the public side is non-lead).⁴⁷ Private-side-only lead service lines are typically the result of a previous partial replacement by the utility.⁴⁸ They corrode in the same manner as public-side-only and full lead service lines and thus present the same health risk to customers.⁴⁹ Yet, by 2020, PWSA will have skipped nearly 2,000 private-side-only lead service lines located in areas covered by its neighborhood-based program.⁵⁰

Under the terms of the Consent Order, PWSA has also changed its corrosion control treatment. With DEP’s approval, PWSA began adding orthophosphate, a corrosion-inhibiting chemical, to its water in April 2019.⁵¹ Over time, orthophosphate should help form a stable protective scale on the inside of lead pipes that will reduce corrosion. Nevertheless, it may be up to a year before orthophosphate takes full effect.⁵² Even then, the protective scale can be disrupted at any time by changes in water treatment or the chemistry of source water, or by surface or underground vibrations from construction in streets or customers’ yards.⁵³ The persistent, elevated lead levels in PWSA’s drinking water indicate that PWSA has yet to control the corrosion of lead service lines.⁵⁴

⁴⁷ Pittsburgh UNITED St. C-2, at 10.

⁴⁸ Pittsburgh UNITED St. C-2SUPP-R, at 8.

⁴⁹ Pittsburgh UNITED St. C-2, at 18; Pittsburgh UNITED St. C-3, at 21.

⁵⁰ Pittsburgh UNITED St. C-2, at 26.

⁵¹ PWSA St. C-1SD, at 23.

⁵² Pittsburgh UNITED St. C-2, at 16-17.

⁵³ Id.

⁵⁴ Pittsburgh UNITED St. C-3SUPP-R, at 6; Pittsburgh UNITED St. C-2SUPP-R, at 8-9; supra, at 6.

3. Act 65

It was against the backdrop of high lead levels in 2016 and 2017 and PWSA's initial, deficient response that the Pennsylvania state legislature brought PWSA under the Commission's jurisdiction. In November 2017, the Auditor General identified "an urgent need to move swiftly to stabilize [PWSA's] deteriorating infrastructure in order to eliminate current health hazards, such as lead-tainted water."⁵⁵ Similarly, the Mayor's Blue Ribbon Panel observed in December 2017 that PWSA's "system failures and deficiencies" including "non-compliance with limits on lead in drinking water" had resulted in a loss of public trust and "a sense of crisis."⁵⁶ The Pennsylvania House of Representatives Co-Sponsorship Memorandum for the bill that would become Act 65 cited "non-compliance with federal water quality mandates" as one of the "the many service issues facing PWSA."⁵⁷ It explained that moving PWSA under the Commission's jurisdiction was "about providing necessary help to protect the health and safety of those citizens relying on PWSA for provision of clean water."⁵⁸

On December 21, 2017, Governor Wolf signed Act 65, adding Chapter 32 to the Public Utility Code and establishing the process by which the Commission would assume jurisdiction

⁵⁵ PWSA St. C-1SD, Stip Doc-3, at 18.

⁵⁶ PWSA St. C-4, Ex. RAW-C-4, at 3.

⁵⁷ House Co-Sponsorship Memoranda for HB 1490, PA House of Representatives Session 2017-18, Regular Session, May 24, 2017, available at <https://www.legis.state.pa.us/cfdocs/Legis/CSM/showMemoPublic.cfm?chamber=H&SPick=20170&cosponId=23989>.

⁵⁸ Id.

over PWSA.⁵⁹ Commission jurisdiction took effect on April 1, 2018.⁶⁰ Act 65 directed PWSA to file a tariff within 90 days, and a Compliance Plan and LTIP within 180 days.⁶¹

PWSA filed a petition for approval of its tariff later that year in July. Pittsburgh UNITED intervened in the rate case proceeding and presented testimony regarding affordability, customer service, and lead remediation. The parties reached a settlement, which the Commission approved in February 2019. Among other provisions, the settlement established requirements for PWSA's lead service line removal and tap water filter programs for 2019.⁶² PWSA's lead remediation plans for 2020 and beyond were reserved for the Compliance Plan and LTIP proceeding.

B. Record of This Proceeding

PWSA filed petitions requesting Commission approval of its Compliance Plan and LTIP on September 28, 2018.⁶³ Both the Compliance Plan and LTIP describe PWSA's plans to address lead contamination between 2019 and 2026.⁶⁴ In describing its plans for lead service line replacement, PWSA said it will terminate the neighborhood-based program in 2020.⁶⁵ PWSA will instead perform most lead service line replacements in conjunction with small-diameter water main replacements.⁶⁶ That is, when PWSA replaces a small-diameter water main running down a street, it will replace at the same time all public-side service lines attached to the main

⁵⁹ Act of Dec. 21, 2017, Pub. L. No. 1208, No. 65; Implementation of Ch. 32 of the Public Utility Code Re Pittsburgh Water and Sewer Authority, Final Implementation Order, Docket Nos. M-2018-2640802, -2640803, at 1 (order entered Mar. 15, 2018). 66 Pa. C.S. § 3202(a)(1).

⁶⁰ 66 Pa. C.S. § 3202(a)(1).

⁶¹ Id. § 3204(a)-(b).

⁶² Recommended Decision, Docket Nos. R-2018-3002645, -3002647, at 11-17, § III.C.1 (order entered Jan. 17, 2019).

⁶³ See 66 Pa. C.S. § 3204(a).

⁶⁴ PWSA Hearing Ex. 1, at 119-121 (PWSA's Compliance Plan); LTIP, at 16-18, 27-29, 53-54.

⁶⁵ Pittsburgh UNITED St. C-2, at 12.

⁶⁶ Id.

and any private-side lead service lines attached to the public-side lines removed.⁶⁷ The Compliance Plan and LTIP do not propose a plan for replacing all lead service lines in PWSA's system.⁶⁸

Pittsburgh UNITED submitted comments on the Compliance Plan and the LTIP, highlighting deficiencies in PWSA's lead remediation plans and recommending improvements. Pittsburgh UNITED then intervened in the Compliance Plan proceeding to protect its members' interest in safe and affordable drinking water. On November 28, 2018, the Commission assigned the Compliance Plan to the Office of Administrative Law Judge and established a two-stage procedure for its review. This first stage "is directed toward urgent infrastructure remediation and improvement, and the revenue and financing requirements of maintaining service that supports public health and safety," which includes an evaluation of PWSA's lead remediation proposal.⁶⁹ In February 2019, Deputy Chief Judge Hoyer and Judge Johnson consolidated the Compliance Plan Stage 1 and LTIP proceedings.

Starting on February 14, 2019, the parties filed direct testimony, followed by rebuttal and surrebuttal testimony.⁷⁰ In relevant part, Pittsburgh UNITED's experts testified to the health risks to PWSA customers from lead-contaminated drinking water and offered several recommendations for improving the design and implementation of PWSA's lead remediation

⁶⁷ Pittsburgh UNITED St. C-2SUPP-R, at 2-3.

⁶⁸ Pittsburgh UNITED St. C-2, at 26-27.

⁶⁹ Pa. PUC, Secretarial Letter, Assignment of the Pittsburgh Water and Sewer Authority Compliance Plan to the Office of Administrative Law Judge (Corrected), Docket Nos. M-2018-2640802, -2640803, at 3 (Nov. 28, 2018).

⁷⁰ The following entities are parties to the proceeding: PWSA, the Bureau of Investigation and Enforcement, the Office of Consumer Advocate, the Office of Small Business Advocate, Pittsburgh UNITED, and Pennsylvania American Water.

program.⁷¹ On May 15, the Commission granted the parties' joint motion requesting a three-month stay of the litigation schedule to allow more time for settlement negotiations.

On August 2, PWSA filed its supplemental testimony describing developments that occurred during the three-month stay of the proceedings. That testimony also set out, for the first time, a proposed income-based reimbursement program for lead service line replacement, which PWSA's Board of Directors had already approved.⁷² Under this program, PWSA will not initiate or conduct lead service line replacements. Instead, customers must pay private contractors up front to replace the lead service lines at their homes and then apply to PWSA for reimbursement.⁷³ The amount of reimbursement will be based on a sliding scale, with lower income customers qualifying for larger reimbursements.⁷⁴

The parties then filed supplemental rebuttal testimony. In that testimony, expert witnesses for the Bureau of Investigation and Enforcement, the Office of Consumer Advocate, and Pittsburgh UNITED all voiced opposition to PWSA's proposed income-based reimbursement program, noting that it would disadvantage low and moderate income customers.⁷⁵ PWSA submitted written rejoinder.

Judges Hoyer and Johnson presided over a hearing on August 21, 2019, during which the parties entered testimony and hearing exhibits into the record. The parties informed the Judges that they had reached a partial settlement of the Stage 1 Compliance Plan and LTIIP issues. The proposed partial settlement, filed on September 13, includes several terms related to PWSA's

⁷¹ See Pittsburgh UNITED St. C-1, C-2, C-3, C-1SR, C-2SR, C-3SR, C-1SUPP-R, C-2SUPP-R, C-3SUPP-R.

⁷² PWSA St. C-1SD, at 25, 30-32.

⁷³ Id. at 30-31.

⁷⁴ Id.

⁷⁵ I&E St. 4-RS; OCA St. 2R-Supp; Pittsburgh UNITED St. C-1SUPP-R; Pittsburgh UNITED St. C-2SUPP-R; Pittsburgh UNITED St. C-3SUPP-R.

lead remediation efforts. If approved, the partial settlement will require PWSA to develop a plan for replacing all lead service lines in its system by 2026, to prioritize lead service line replacements in those neighborhoods at greatest risk of lead exposure, and to expand programs that provide free tap water filters and replacement cartridges to customers at risk of drinking lead-contaminated water.⁷⁶

The parties did not fully resolve their disputes regarding PWSA's proposed lead remediation plan for 2020-2026. As discussed below, the PWSA and Pittsburgh UNITED disagree about whether PWSA's plans to create an income-based reimbursement program for lead service line replacements and to terminate its neighborhood-based program will provide safe and reasonable service to its customers.

III. LEGAL STANDARDS AND BURDEN OF PROOF

Pursuant to Act 65, the Commission reviews PWSA's Compliance Plan and LTIP to determine if they "adequately ensure and maintain the provision of adequate, efficient, safe, reliable and reasonable service."⁷⁷ In answering the question of whether a utility provides adequate and safe service to its customers, the Commission has taken note that "*every* customer is entitled to water that is fit for basic domestic purposes; e.g., cooking, drinking, washing, and bathing."⁷⁸

⁷⁶ Joint Petition for Partial Settlement, Docket Nos. M-2018-2640802, -2640803, P-2018-3005037, -3005039, at 43-53, ¶¶ III.OO – YY (filed Sept. 13, 2019). The lead-related terms of the proposed settlement will be described at greater length in Pittsburgh UNITED's statement in support of the settlement to be filed on September 30, 2019.

⁷⁷ 66 Pa. C.S. § 3204(c); *see also id.* § 1352(a)(7); 52 Pa. Code. § 121.4(d).

⁷⁸ PUC v. Pa. Gas & Water Co., Docket Nos. R-850178 et al., (Opinion and Order entered April 24, 1986) (emphasis in original).

As the proponent of both the Compliance Plan and LTIIP, PWSA carries the burden of proof.⁷⁹ “[T]he burden of proof is met when the elements of that cause of action are proven with substantial evidence which enables the party asserting the cause of action to prevail, precluding all reasonable inferences to the contrary.”⁸⁰ “Substantial evidence is that quantum of evidence which a reasonable mind might accept as adequate to support a conclusion.”⁸¹ It is “more than a mere scintilla of evidence or suspicion of the existence” of a material fact.⁸²

In its Final Implementation Order for effectuating Chapter 32, the Commission directed “PWSA to develop and propose a comprehensive plan to address lead levels in its water supply and the replacement of lead service lines” as part of its Compliance Plan and LTIIP.⁸³ Consequently, PWSA must offer substantial evidence that the lead remediation efforts proposed in its Compliance Plan and LTIIP adequately ensure and maintain the provision of adequate, efficient, safe, reliable, and reasonable service by providing every PWSA customer with water fit for consumption.⁸⁴ If PWSA does not meet its burden, the Commission may order PWSA to file revised plans.⁸⁵ Moreover, the Commission “can specifically direct a utility to incorporate a particular infrastructure improvement project in the new or revised plan” if the Commission deems the project “necessary and in the public interest.”⁸⁶

⁷⁹ 66 Pa. C.S. § 332(a); 52 Pa. Code. § 121.4(d); Recommended Decision, Docket Nos. R-2018-3002645, -3002647, at 30-31, § III.H.2 (order entered Jan. 17, 2019) (stipulating that PWSA carries the burden of proof with respect to the Compliance Plan).

⁸⁰ Burleson v. PUC, 461 A.2d 1234, 1236 (Pa. 1983).

⁸¹ Norfolk & W. Ry. Co. v. PUC, 413 A.2d 1037, 1047 (Pa. 1980).

⁸² Murphy v. Dep’t of Pub. Welfare, 480 A.2d 382, 386 (Pa. Commw. Ct. 1984).

⁸³ Implementation of Ch. 32 of the Public Utility Code Re Pittsburgh Water and Sewer Authority, Final Implementation Order, Docket Nos. M-2018-2640802, -2640803, at 32 (order entered Mar. 15, 2018).

⁸⁴ See 66 Pa. C.S. §§ 3204(c), 1352(a)(7).

⁸⁵ 66 Pa. C.S. §§ 3204(c), 1352(a)(7).

⁸⁶ PUC, Review of Long-Term Infrastructure Improvement Plan, Docket No. L-2012-2317274, at 23 (Final Rulemaking Order entered May 22, 2014); see also id. at 23 (“[B]oth preexisting Section 1501 and the recently added Section 1352(a)(7) of the Code authorize the Commission to direct, after notice and opportunity to be heard and with an appropriate mechanism for cost recovery, the implementation of infrastructure maintenance and

IV. SUMMARY OF THE ARGUMENT

Lead-contaminated water presents serious health risks to PWSA's customers. Those risks will remain until PWSA removes the lead service lines in its system. Consequently, to ensure safe and reasonable service, PWSA must develop a plan for replacing all lead service lines quickly, efficiently, and in a manner that prioritizes those customers most at risk.

PWSA has failed to do so. PWSA wants to create an income-based reimbursement program that requires customers to pay thousands of dollars up front for lead service line replacements. But this reimbursement structure will make it impossible for customers who cannot afford the up-front payment to participate in the program. Therefore, the program will exclude low and moderate income customers—the very customers among the most at risk from lead-contaminated water. In addition, by refusing to provide free replacements to all customers and relying on customers to initiate replacements, PWSA will further disincentivize customer participation, leaving more lead in the ground and more customers at risk of exposure to lead-contaminated water. This approach will also undermine economies of scale, creating an inefficient patchwork of service line replacements rather than a far more efficient block-by-block replacement program. This unfair, ineffective, and inefficient program will not ensure safe and reasonable service for an entire class of customers. The Commission should reject PWSA's proposed income-based reimbursement program.

PWSA's neighborhood-based program already provides a template for efficiently removing thousands of lead service lines at no direct cost to customers in parts of the city where

improvement projects deemed necessary to ensure safe and reliable service.”); 66 Pa. C.S. § 3205(a) (“The commission may require an authority to maintain, repair and replace facilities and equipment used to provide services under this chapter to ensure that the equipment and facilities comply with section 1501 (relating to character of service and facilities).”).

customers are most at risk. PWSA proposes to eliminate this program in 2020, even though it lacks a viable alternative and lead levels in its drinking water remain high. PWSA cannot provide safe service and ensure lead lines are efficiently removed if it scales back its remediation efforts at this critical juncture. The Commission should direct PWSA to continue operating the neighborhood-based program beyond 2020, or to propose an alternative program that offers PWSA customers free, utility-initiated replacements.

If PWSA is required to adopt an alternative program (or if the Commission were to approve PWSA's proposed income-based reimbursement program over the objection of Pittsburgh UNITED, the Office of Consumer Advocate, and the Bureau of Investigation and Enforcement) the details of any such program—including proposed budgets, eligibility, enrollment, and administration—should be subject to further review by the Commission and all interested parties. These details are critical to the effectiveness of PWSA's lead remediation programs and should not evade review.

V. ARGUMENT

A. The Cooperation Agreement Between PWSA And City Of Pittsburgh Effective January 1, 1995

Pittsburgh UNITED has not taken a position on the Cooperation Agreement between PWSA and the City of Pittsburgh.

B. Municipal Properties And Public Fire Hydrants Within The City Of Pittsburgh

Pittsburgh UNITED has not taken a position on PWSA's approach to municipal properties and fire hydrants within the City of Pittsburgh.

C. Applicability Of The Municipal Authorities Act, 53 Pa. C.S. § 5601, et. seq., And The Commission’s Line Extension Regulations At 52 Pa Code §§ 65.1, 65.21-65.23

Pittsburgh UNITED has not taken a position on the applicability of the Municipal Authorities Act and the Commission’s Line Extension Regulations.

D. PWSA’s Residency Requirement

Pittsburgh UNITED has not taken a position on PWSA’s residency requirement.

E. Lead Remediation Issues

The Commission has properly asserted jurisdiction over PWSA’s lead remediation plans. It should exercise that jurisdiction to correct two critical deficiencies in PWSA’s Compliance Plan and LTIP: (1) PWSA’s intent to introduce an unfair and ineffective income-based reimbursement program and (2) to eliminate its successful neighborhood-based program. The income-based reimbursement program will effectively exclude many low and moderate income customers from obtaining private-side lead service line replacements, and will result in these customers receiving substandard water service to their homes. The harm will be compounded if PWSA is allowed to discontinue the neighborhood-based program, an efficient strategy for removing large numbers of lead lines in the parts of the city that are most at risk from lead-contaminated water. Because PWSA has not shown that its plans for replacing private-side lead service lines will ensure adequate, efficient, safe, reliable, and reasonable service for all of its customers, the Commission should reject the Compliance Plan and LTIP and order PWSA to propose a plan that offers no-cost lead service line replacements for all customers.

As a threshold matter, PWSA inaccurately asserts that the Commission should not reach the merits of this dispute because the Commission lacks jurisdiction over the utility’s lead

remediation programming.⁸⁷ To the contrary, the Commission must ensure that every public utility provides its customers with safe service.⁸⁸ “In reaching a determination as to whether a utility has provided adequate and reasonable service,” the Commission has recognized “that *every* customer is entitled to water that is fit for basic domestic purposes; e.g., cooking, drinking, washing, and bathing.”⁸⁹ Lead contamination renders the water of a significant number of PWSA customers unfit for drinking and cooking.⁹⁰ They are not receiving safe service. The Commission has the authority to ensure that they get it.

In fact, one of the legislature’s reasons for moving PWSA under the Commission’s jurisdiction was to secure its oversight of PWSA’s lead remediation plans.⁹¹ PWSA’s Compliance Plan and LTIP must “adequately ensure and maintain the provision of” safe service, and the Commission can direct PWSA to file a new Compliance Plan and LTIP if they do not satisfy that standard.⁹² Through its Final Implementation Order in this proceeding, the Commission exercised its jurisdiction over lead remediation, instructing PWSA to submit “a comprehensive plan to address lead levels in its water supply and the replacement of lead service lines” as part of its Compliance Plan and LTIP.⁹³

The Commission’s jurisdiction over PWSA’s lead remediation efforts is further supported by another provision of the Public Utility Code. Utilities can recover the cost of replacing customer-owned lead service lines “under a commission-approved program.”⁹⁴

⁸⁷ PWSA St. C-1RJ, at 3.

⁸⁸ 66 Pa. C.S. § 1501.

⁸⁹ PUC v. Pa. Gas & Water Co., Docket Nos. R-850178 et al., (Opinion and Order entered April 24, 1986) (emphasis in original).

⁹⁰ Supra, at 6 (describing PWSA tap water monitoring showing elevated levels of lead).

⁹¹ See supra, at 10.

⁹² 66 Pa. C.S. § 3204(c); see also id. § 1352(a)(7).

⁹³ Implementation of Ch. 32 of the Public Utility Code Re Pittsburgh Water and Sewer Authority, Final Implementation Order, Docket Nos. M-2018-2640802, -2640803, at 32 (order entered Mar. 15, 2018).

⁹⁴ 66 Pa. C.S. § 1311(b)(2).

PWSA's proposed income-based reimbursement program would commit ratepayer funds to private-side lead service line replacements, and, thus, that program is subject to Commission review.

Neither the Lead and Copper Rule nor the DEP Consent Order precludes the Commission's jurisdiction over PWSA's lead remediation program.⁹⁵ The Commission has previously held that it wields "joint jurisdiction" with DEP over matters affecting the safety of drinking water.⁹⁶ As the Commission explained when it assigned Stage 1 of the Compliance Plan to the Office of Administrative Law Judge:

As to regulated public water and wastewater service, the Commission and DEP are State agencies jointly charged with the protection of fundamental aspects of public health and safety. The procedure established here reflects the challenges of the PWSA transition and a harmonization of the joint regulatory roles of DEP and the Commission.⁹⁷

Although the Commission cannot contradict orders duly issued by DEP regarding water quality,⁹⁸ the Commission retains authority to order PWSA to take other steps to protect customers from lead-contaminated drinking water and ensure the utility is providing safe service.⁹⁹

None of the relief sought by Pittsburgh UNITED in this proceeding would conflict with or undermine DEP's directives to PWSA. DEP has not assessed whether PWSA's lead service line replacement efforts are adequate to protect public health or will result in safe service to

⁹⁵ Pickford v. Pa. Am. Water Co., Docket Nos. C-20078029 et al., at 13 (Opinion and Order entered Mar. 20, 2008) ("While the PUC does not have direct power to enforce the SDWA, the SDWA cannot be read to supersede the Public Utility Code.") (affirmed by Pickford v. PUC, 4 A.3d 707 (Pa. Commw. Ct. 2010)).

⁹⁶ Id. at 16.

⁹⁷ Pa. PUC, Secretarial Letter, Assignment of the Pittsburgh Water and Sewer Authority Compliance Plan to the Office of Administrative Law Judge (Corrected), Docket Nos. M-2018-2640802, -2640803, at 3 (Nov. 28, 2018).

⁹⁸ See Pickford v. PUC, 4 A.3d 707, 714 (Pa. Commw. Ct. 2010) (holding that Commission lacked jurisdiction over a collateral attack on a DEP permit authorizing a utility to use a certain water treatment chemical).

⁹⁹ Pickford v. Pa. Am. Water Co., Docket Nos. C-20078029 et al., at 13 (Opinion and Order entered Mar. 20, 2008) ("[A] utility's compliance with the SDWA is a portion, albeit critical, of all of the broad categories of service over which the Commission has jurisdiction."); PUC v. Clean Treatment Sewage Co., Docket Nos. C-2009-2125411 et al., at 16 (Opinion and Order entered Apr. 22, 2010) (similar).

customers. DEP has not evaluated, let alone approved, PWSA's proposals to create an income-based reimbursement program or to end its neighborhood-based program—the aspects of PWSA's lead service line replacement plans being litigated in this proceeding. Neither policy is designed to fulfill a requirement of the DEP Consent Order. In sum, the DEP Consent Order is not dispositive as to whether PWSA's lead remediation plan meets the Commission's safe service standard. The Commission could find that different or additional action—separate from what DEP has ordered—is required by PWSA to fulfill its obligation to provide safe and reasonable service to its customers.

The dispute in this proceeding regarding how and when to replace lead infrastructure in PWSA's system falls at the core of the Commission's authority and expertise. The Commission should reject PWSA's attack on its jurisdiction and decide the merits of the arguments presented below.

1. Replacement of Private-Side Lead Services Lines Not Scheduled For Replacement Through PWSA's Current Lead Service Line Replacement Programs

PWSA's Compliance Plan and LTIP do not ensure safe service because they fail to offer an effective plan to replace thousands of lead service lines. PWSA's proposed income-based reimbursement program, together with its plan to terminate the neighborhood-based program, will leave large numbers of PWSA customers at risk from lead-contaminated water, particularly low income, Black, and Latinx customers who are especially vulnerable to lead exposure.¹⁰⁰

In Pittsburgh, where drinking water lead levels have been elevated for three years and remain so today, and where PWSA's profound and prolonged mismanagement of the system

¹⁰⁰ Pittsburgh UNITED St. C-3, at 7-8, 13; Pittsburgh UNITED St. C-3SUPP-R, at 4-5.

caused the present lead crisis,¹⁰¹ the utility must remove its lead lines to ensure safe service over the long term. According to Pittsburgh UNITED expert Gregory Welter, an engineer with extensive experience in utility lead remediation programs, “As long as lead service lines remain part of PWSA’s system, there is the potential that they will leach lead into customers’ drinking water.”¹⁰² Pittsburgh UNITED expert Dr. Lanphear, a medical doctor, clinician scientist, and university professor with over 20 years of research on lead exposure and lead poisoning, concurs: “Removing all lead service lines from the water system is the only effective, permanent way to protect children and other residents from lead in their drinking water.”¹⁰³

PWSA’s recent changes to its corrosion control treatment system do not obviate the need to replace all lead service lines. Mr. Welter explains, “The addition of orthophosphate is neither an immediate nor permanent fix.”¹⁰⁴ The orthophosphate PWSA began adding to its water in April of this year should help reduce corrosion and tap water lead levels, as discussed above.¹⁰⁵ But this chemical treatment can take up to a year before becoming fully effective, and lead levels in PWSA’s system remain high.¹⁰⁶ Moreover, orthophosphate treatment is not a long-term solution to lead exposure from pipe corrosion. Changes to source water chemistry, shifts in water treatment (authorized or unauthorized), and physical disruption of lead service lines (such as street construction) can damage the protective scale formed by orthophosphate and release lead into drinking water.¹⁰⁷

¹⁰¹ PWSA St. C-1SD, Stip Doc-3, at 18.

¹⁰² Pittsburgh UNITED St. C-2, at 17; see also Pittsburgh UNITED St. C-3, at 21-22.

¹⁰³ Pittsburgh UNITED St. C-3SR, at 5; see also Pittsburgh UNITED St. C-1, at 1-2.

¹⁰⁴ Pittsburgh UNITED St. C-2, at 16.

¹⁰⁵ Id.; supra, at 9.

¹⁰⁶ Pittsburgh UNITED St. C-3SUPP-R, at 6; Pittsburgh UNITED St. C-2SUPP-R, at 8-9.

¹⁰⁷ Pittsburgh UNITED St. C-2, at 17.

Given these facts, replacing lead service lines is the only way to ensure the long-term, reliable provision of safe drinking water.¹⁰⁸ But PWSA does not yet have a plan to provide all customers with lead service line replacements.¹⁰⁹ PWSA's current plan is to conduct most lead service line replacements through its existing neighborhood-based program through 2020, and then, starting in 2021, to conduct most replacements through its small-diameter water main replacement program.¹¹⁰ PWSA recently introduced a third initiative, an income-based reimbursement program, purportedly designed to address a serious gap in PWSA's two existing programs—customers with private-side lead service lines not otherwise scheduled for replacement.

As explained below, PWSA's newly proposed income-based reimbursement program falls short of this objective and of the utility's obligation to provide safe service. To understand why, first consider the limited reach of PWSA's existing lead service line replacement programs. PWSA's neighborhood-based program, as discussed above, replaces full and public-side-only lead service lines located within contiguous, multi-block work order areas.¹¹¹ The program has two major shortcomings. First, and most obviously, it does not replace lead service lines located outside of work order areas. As shown by the map below, the neighborhood-based program's work orders cover only a limited portion of PWSA's service area.

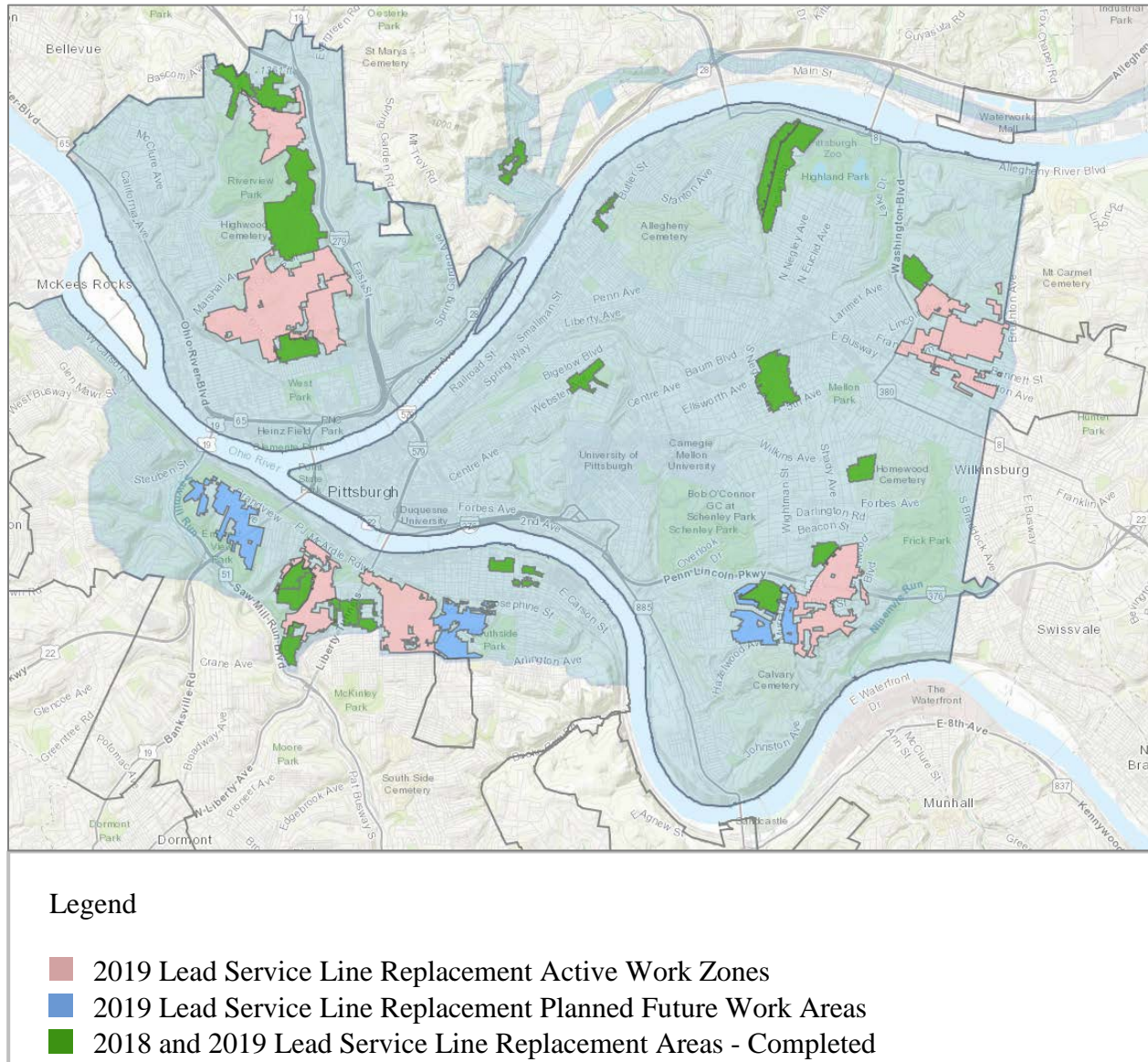
¹⁰⁸ *Id.* at 16-18; Pittsburgh UNITED St. C-3, at 21-22.

¹⁰⁹ Pittsburgh UNITED St. C-2, at 14, 26-27.

¹¹⁰ LTIIP, at 28 ("LSLR Program" in Table 2-7 refers to the neighborhood-based program).

¹¹¹ Pittsburgh UNITED St. C-2, at 10; *supra*, at 8-9.

Figure 1: Areas Served by Neighborhood-Based Program¹¹²



Second, the neighborhood-based program does not replace private-side-only lead service lines (where the private side is lead and the public side is non-lead).¹¹³ This means that as PWSA contractors move down a street replacing lead lines, they skip homes where the lead pipe runs

¹¹² Pittsburgh UNITED St. C-2SUPP-R, at 5.

¹¹³ Pittsburgh UNITED St. C-2, at 10.

only from a customer's home to the curb box. By 2020, PWSA estimates that it will have skipped nearly 2,000 such lines.¹¹⁴

Once the neighborhood-based program ends, PWSA will conduct lead service line replacements primarily through its small-diameter water main program. Between 2020 and 2026, PWSA says it will remove about 138 miles of small-diameter water mains.¹¹⁵ When PWSA replaces a water main running down a street, it will replace all of the public-side service lines attached to the main, regardless of the material those lines are made of.¹¹⁶ PWSA will also offer to replace, free of charge, any private-side lead service line attached to a public-side line that it removes.¹¹⁷

Like the neighborhood-based program, the reach of the small-diameter water main program is limited. The program will not cover about 580 miles, or 80 percent, of the approximately 720 total miles of small-diameter mains in PWSA's system.¹¹⁸ PWSA estimates that each mile of water main has about 41 lead service lines connected to it,¹¹⁹ though the exact numbers are unknown because PWSA has yet to compile an accurate inventory of lead service lines in its system.¹²⁰ Nevertheless, by PWSA's own estimates, thousands of customers with lead pipes are likely to be excluded from the small-diameter water main replacement program.¹²¹ Taken together, the neighborhood-based and small-diameter water main programs will leave a significant number of lead service lines in the ground, posing an ongoing risk to the health and safety of PWSA customers.

¹¹⁴ Id. at 26.

¹¹⁵ Pittsburgh UNITED St. C-2SUPP-R, at 4.

¹¹⁶ Id. at 2-3.

¹¹⁷ Id.

¹¹⁸ Id. at 4.

¹¹⁹ Id.

¹²⁰ Pittsburgh UNITED St. C-2, at 29-32.

¹²¹ See Pittsburgh UNITED St. C-2SUPP-R, at 4.

Thus, PWSA must develop a new pipe replacement program or expand existing ones—and must do so quickly—to achieve its stated goal of replacing all lead service lines by 2026.¹²² While the proposed partial settlement requires PWSA to revise its lead service line replacement strategy in March 2021 after it completes its inventory,¹²³ PWSA must continue to accelerate the pace of replacements to meet its 2026 deadline. PWSA has so far only proposed the income-based reimbursement program to address the gaps left by the neighborhood-based and small-diameter water main programs. But, as discussed below, this program adopts an unfair, ineffective, and inefficient approach to private-side lead service line replacements. It will not ensure safe service to PWSA’s customers.

a. Income-Based Reimbursement for Private-Side Lead Service Line Replacements Initiated By Property Owner

PWSA’s income-based program offers to reimburse customers who hire and pay a contractor to replace a private-side lead service line.¹²⁴ PWSA estimates that the average cost to a customer replacing a private-side lead service line is \$5,500.¹²⁵ Under PWSA’s proposal, customers are expected to identify a contractor themselves and pay for the entire private-side replacement up front.¹²⁶ After replacement, the customer can apply to PWSA for a reimbursement. The amount of the reimbursement depends on the customer’s income.¹²⁷ The chart below summarizes PWSA’s proposed reimbursements:¹²⁸

¹²² See Joint Petition for Partial Settlement, Docket Nos. M-2018-2640802, -2640803, P-2018-3005037, -3005039, at 45, ¶ III.QQ.2 (filed Sept. 13, 2019). The settlement acknowledges that PWSA might not be able to remove every single lead service line from its system. There might be some lead lines that go undiscovered, even after PWSA makes reasonable efforts to complete a comprehensive inventory. A few might not be operationally feasible to replace. Property owners might refuse to authorize the replacement of some private-side service lines. *Id.* ¶ III.QQ.2.d.

¹²³ *Id.* ¶ III.QQ.2.b.

¹²⁴ PWSA St. C-1SD, at 30-32.

¹²⁵ PWSA St. C-1RJ, at 6

¹²⁶ *Id.* at 9.

¹²⁷ PWSA St. C-1SD, at 30-31.

¹²⁸ Pittsburgh UNITED St. C-1SUPP-R, at 4.

Table 2: Proposed Reimbursement Amounts

Income Level	Reimbursement Amount	Average Expected Customer Contribution, after Reimbursement
< 300% of the Federal Poverty Level (FPL)	100% of the cost of the replacement	\$0
301-400% of the FPL	75% of the cost of the replacement	\$1,375
401-500% of the FPL	50% of the cost of the replacement	\$2,750
> 500% of the FPL	\$1,000 stipend	\$4,500

PWSA’s Board of Directors approved this program in July 2019 as part of a revised lead service line replacement policy.¹²⁹ However, aside from the basic cost-sharing design, PWSA has yet to offer critical details about this program, including a detailed budget, how long it will take to process and distribute reimbursements to customers, or how it will calculate customers’ income.¹³⁰ The program is not described in PWSA’s Compliance Plan or LTIIP; PWSA first offered testimony on the program in August 2019.¹³¹

The program’s goal—to fill a critical gap in PWSA’s current lead service line replacement efforts—is important. Private-side lead service lines are a significant source of lead contamination and, as such, must be replaced to ensure that all PWSA customers have access to safe drinking water. The program’s design, however, is deeply flawed. It suffers from three major deficiencies: it requires customers to pay for replacements up front, it does not offer free replacements to all customers, and it requires customers to initiate and arrange for replacements. As proposed by PWSA, the income-based reimbursement program does not meet the

¹²⁹ PWSA St. C-1SD, Ex. RAW-C-46 ¶ 4.10.

¹³⁰ Pittsburgh UNITED St. C-1SUPP-R, at 16.

¹³¹ PWSA St. C-1SD, at 30-32.

Commission's standards and will result in disparate levels of service to households based primarily on income.

i. The program's reimbursement structure disadvantages low and moderate income customers

The program's first and most serious deficiency is PWSA's decision to use a reimbursement structure. Pittsburgh UNITED expert Mitchell Miller, former Director of the Bureau of Consumer Services—with decades of experience in designing and implementing low income programming—reviewed PWSA's proposed reimbursement program and concluded that, “by distributing this program's assistance through reimbursements, PWSA effectively and disproportionately excludes low income customers from participating.”¹³²

A private-side lead service line replacement costs thousands of dollars. Low and moderate income families simply cannot afford that expense.¹³³ Twenty-two percent of Pittsburghers live below the federal poverty line.¹³⁴ Many PWSA customers struggle just to keep up with their monthly water bills. It is unrealistic to expect these same households to pay thousands of dollars for a lead service line replacement.¹³⁵

Fifty-three percent of PWSA's customers earn less than 300 percent of the federal poverty line, and thus are eligible for a full reimbursement of their replacement costs.¹³⁶ Yet, as Mr. Miller concluded, “PWSA's promise of a future reimbursement is meaningless for those who cannot afford to front the costs of replacement and wait for reimbursement.”¹³⁷ The sliding

¹³² Pittsburgh UNITED St. C-1SUPP-R, at 6.

¹³³ *Id.* at 5-7.

¹³⁴ *Id.* at 6 n.12.

¹³⁵ *Id.* at 5-6.

¹³⁶ PWSA St. C-1SD, at 30-31.

¹³⁷ Pittsburgh UNITED St. C-1SUPP-R, at 6.

scale purports to account for customers' financial need, but PWSA erects a formidable barrier to accessing assistance that is impossible for many low and moderate income customers to clear.

The perverse outcome of PWSA's income-based reimbursement program is that the customers most in need of assistance are least likely to get it. Low income customers are more likely to live in older homes with lead service lines and other sources of lead contamination.¹³⁸ They are less likely than wealthier customers to have the savings or access to capital necessary to fund the replacement of a lead service line at their residence.¹³⁹ Moreover, because poverty rates among Black and Latinx Pittsburghers are nearly double those of whites, the program is also likely to exclude them in disproportionate numbers.¹⁴⁰ According to Dr. Lanphear, this disproportionate exclusion of low income, Black, and Latinx residents puts them "at a greater risk of suffering the harmful risk of lead exposure than a program in which PWSA offers to replace all private-side lead service lines at no direct cost to customers."¹⁴¹ Lead service line replacement policies should be skewed *in favor* of customers who have higher risks of exposure to lead. Instead, the income-based reimbursement program stacks the deck against them.

The Bureau of Investigation and Enforcement, the Office of Consumer Advocate, and Pittsburgh UNITED all offered testimony explaining that providing assistance through reimbursements would disadvantage customers who cannot afford to replace their lead service lines.¹⁴² PWSA did not disagree. It did not even attempt to defend this element of the program's design. Instead, PWSA said that it is exploring an alternative program structure and "very much would like to" adopt it.¹⁴³ But PWSA has provided nothing more on this point, and its vague and

¹³⁸ Pittsburgh UNITED St. C-3, at 7-8, 13.

¹³⁹ Pittsburgh UNITED St. C-1SUPP-R, at 5-6.

¹⁴⁰ *Id.* at 7.

¹⁴¹ Pittsburgh UNITED C-3SUPP-R, at 4.

¹⁴² I&E St. 4-RS, at 6; OCA St. 2R-Supp, at 5-6; Pittsburgh UNITED St. C-1SUPP-R, at 5-7.

¹⁴³ PWSA St. C-1RJ, at 11.

unsupported statement does not meet its burden to show that this program will in fact provide safe and reasonable service to all its customers.

- ii. *The program's failure to provide no-cost replacements puts customers at an increased risk for lead exposure*

PWSA's refusal to offer free private-side lead service line replacements will discourage participation in the income-based reimbursement program. Unlike PWSA's other programs, the income-based program does not cover the full costs of replacement. It requires customers making more than 300 percent of the federal poverty line to pay a portion of those costs. That means those earning between 301 and 400 percent of the poverty line will pay, on average, more than \$1,000 out of pocket for a private-side lead service line replacement.¹⁴⁴ Customers in this income bracket, including the elderly, young families, and single parents, may not be able to afford this expense.¹⁴⁵

This anticipated decrease in customer participation is not hypothetical. Lead service line replacement programs in Washington, D.C. and Providence, Rhode Island are illustrative. These programs offered different subsidies than the reimbursements being offered by PWSA, but they similarly required customers to contribute to the costs of private-side lead service line replacement. Participation rates in those programs were extremely low— by some estimates just ten percent and two percent, respectively. Low income customers were disproportionately likely to opt out.¹⁴⁶

PWSA concedes that using a sliding scale rather than offering free replacements across the board may result in fewer lead service lines being replaced.¹⁴⁷ PWSA justifies this result on

¹⁴⁴ *Supra*, at 27.

¹⁴⁵ OCA St. 2R-Supp, at 5-6.

¹⁴⁶ Pittsburgh UNITED St. C-2SUPP-R, at 6-7.

¹⁴⁷ PWSA St. C-1RJ, at 15.

the grounds that it will cut PWSA's overall costs.¹⁴⁸ But PWSA lacks a reliable estimate of the cost of the income-based reimbursement program or its alternatives. PWSA initially claimed that the program would save \$12 million to \$25 million compared to a program that offered free replacements.¹⁴⁹ A few days later, PWSA revised its savings estimate downwards to between \$8 and \$18 million.¹⁵⁰ Neither estimate is based on a detailed budget; PWSA has yet to develop one.¹⁵¹ PWSA's assertion that the income-based reimbursement program will result in savings to ratepayers is not supported by substantial evidence.

In addition, PWSA anticipates that the income-based reimbursement program will generate significant administrative costs. To implement the sliding scale, PWSA must expend resources to determine customers' income.¹⁵² PWSA does not incur this expense when it offers free lead service line replacements to all customers. PWSA estimates that administrative costs will total \$1,000 per line, between \$8 million and \$20 million total depending on the number of customers who apply for reimbursements.¹⁵³ These funds can and should be directed towards replacing lead service lines, not administering a faulty program.¹⁵⁴

And even if the income-based reimbursement program were less expensive to implement than a program offering free replacements, those savings are far exceeded by the costs of leaving more lead in the ground. Lower customer participation means more customers at risk of lead exposure, and lead-contaminated water exacts a steep price on both the individuals who drink it

¹⁴⁸ *Id.* at 14-15.

¹⁴⁹ PWSA St. C-1SD, at 32.

¹⁵⁰ Pittsburgh UNITED St. C-1SUPP-R, at 11.

¹⁵¹ I&E St. 4-RS, at 5.

¹⁵² Pittsburgh UNITED St. C-1SUPP-R, at 8, 11.

¹⁵³ *Id.* at 11.

¹⁵⁴ I&E St. 4-RS, at 5; Pittsburgh UNITED St. C-1SUPP-R, at 11.

and the communities they live in.¹⁵⁵ Studies estimating the return on investment from lead service line replacement programs show a net gain when the economic benefits of reducing lead contamination are accounted for.¹⁵⁶ When PWSA asserts that its program will save money, it ignores the costs of lead contamination. As Mr. Miller concluded, “[T]he savings from the income-based reimbursement program are not worth the likely significant reduction in program performance. . . . This program is penny wise, pound foolish.”¹⁵⁷

iii. *By requiring customers to initiate replacements, the program will depress participation rates*

A third flaw in PWSA’s income-based reimbursement program is that it requires customers to initiate and arrange for lead service line replacements and then demonstrate that they qualify for reimbursement. That means customers, not PWSA, must determine whether they have a private-side lead service line, understand the risk presented by the lead service line, know that PWSA will reimburse them for its replacement, complete PWSA’s income verification process, find a contractor who will replace the line, pay for the replacement, and apply for reimbursement.¹⁵⁸ The time and resources necessary to navigate this winding path to reimbursement will be especially burdensome for low income customers who may work multiple jobs, have child or family care responsibilities, or lack private transportation or internet access.¹⁵⁹

That path is also full of pitfalls for customers who are not experts in lead service line replacement. For example, customers trying to determine if participation in the income-based

¹⁵⁵ Pittsburgh UNITED St. C-1SUPP-R, at 12 (explaining that childhood lead exposure is associated with lower lifetime earnings and higher health care expenses, need for special education, and crime).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* at 13.

¹⁵⁸ *Id.* at 7.

¹⁵⁹ *Id.* at 7-8.

reimbursement program is worth their time and expense might look to a tap water lead test to see if their drinking water has elevated lead levels. If customers are not aware that there is no safe level of lead in drinking water or that lead levels can fluctuate over time, they might incorrectly conclude that they are not at risk.¹⁶⁰ Customers who consult PWSA's online map to determine if their service line is made of lead may not be aware that the map is incomplete and contains numerous inaccuracies.¹⁶¹ Historical records are one source of data for the map and sometimes provide the only source for a particular address, but 23 percent of those records incorrectly report that a private-side lead service line is not made of lead.¹⁶² If PWSA's online map says that a customer does not have a private-side lead service line, will that customer know not to rely on that representation and be able to conduct a physical inspection and scratch test of the line?¹⁶³

Selecting a contractor to perform a lead service line replacement is not straightforward either. Even a customer who has time to collect and compare contractors' estimates may not know to probe those contractors on the replacement method they will use. As PWSA can attest from experience, trenchless replacements cost less and cause less property damage than open trench methods, but not all contractors have experience with trenchless replacements.¹⁶⁴ The myriad steps to finding and replacing lead service lines are routine for PWSA, but they may confuse customers and dissuade them from pursuing a lead service line replacement.

Requiring customers to initiate lead service line replacements will also disadvantage tenants, many of whom are low income. Landlords decide whether to replace a private-side lead

¹⁶⁰ Pittsburgh UNITED St. C-3SUPP-R, at 5; Pittsburgh UNITED C-2SUPP-R, at 3-4.

¹⁶¹ Before accessing the map, customers must click through a screen stating that "PWSA does not guarantee the accuracy" of the information displayed. PWSA, Lead Map, <http://lead.pgh2o.com/your-water-service-line/planned-water-service-line-replacement-map/>.

¹⁶² Pittsburgh UNITED St. C-2, at 31.

¹⁶³ Pittsburgh UNITED St. C-2SUPP-R, at 3.

¹⁶⁴ Pittsburgh UNITED St. 4, at 24-25 (rate case testimony incorporated by reference at Pittsburgh UNITED St. C-2, at 2-3 & n.3); see also PWSA St. C-1R, at 50.

service line. Since they generally do not drink the water in a rental property as often as their tenants, they have less of a stake in whether or not the lead service line is replaced.¹⁶⁵ When a PWSA replacement program costs them time and money, as the income-based reimbursement program would, landlords are even less likely to participate.¹⁶⁶

PWSA's divergent experiences with its Community Environmental Project and neighborhood-based program offer additional evidence that customers are less likely to participate in a lead service line replacement program when they must initiate the replacement process. As part of the DEP Consent Order, PWSA allocated \$1.8 million for its Community Environmental Project, which offers free private-side lead service line replacements to customers with incomes below 250 percent of the poverty line.¹⁶⁷ Customers must apply for the program and complete income verification before PWSA will enroll them in the program, determine if they have a lead service line, and schedule it for replacement.¹⁶⁸

PWSA has struggled to identify and enroll eligible customers in the Community Environmental Project. Although PWSA has enough funding for over 500 private-side lead service line replacements, it has completed only 74 such replacements as of July 29, 2019.¹⁶⁹ It has verified the income eligibility of an additional 116 customers, but some of them may not have private-side lead service lines.¹⁷⁰ One year into the program, PWSA has spent only 13 percent of its \$1.8 million budget.¹⁷¹ PWSA has a little over a year left to spend the remaining 87 percent; any funds not spent by November 2020 go to DEP as a fine.¹⁷² The Community

¹⁶⁵ Pittsburgh UNITED St. C-1SUPP-R, at 16.

¹⁶⁶ *Id.* at 15-16.

¹⁶⁷ Pittsburgh UNITED St. C-2, Appendix C, 17, DEP Consent Order ¶ 4.b.-c; Pittsburgh UNITED St. C-3, at 39.

¹⁶⁸ Pittsburgh UNITED St. C-1SUPP-R, at 8.

¹⁶⁹ *Id.* at 9; PWSA St. C-1SD, at 32.

¹⁷⁰ Pittsburgh UNITED St. C-1SUPP-R, at 9 & n.25.

¹⁷¹ *Id.* at 9.

¹⁷² *Id.* at 8-9.

Environmental Project is undersubscribed even though it offers *free* private-side lead service line replacements conducted by PWSA contractors. This experience shows that low income customers are unlikely to participate in the income-based reimbursement program when they must not only complete an income verification *but also* arrange for the replacement with a private contractor and pay for it all up front.¹⁷³

By contrast, PWSA's neighborhood-based program does not require customers to initiate lead service line replacements or complete an income verification to receive a private-side lead service line replacement. Customers need only sign a form authorizing PWSA to perform the replacement free of charge, after PWSA has determined that the public side of the service line is lead. PWSA sends the form to the customer's home and then follows up over the phone and in person if they do not return it.¹⁷⁴ PWSA reports that 92 percent of customers consent to a private-side replacement with this approach.¹⁷⁵ The Community Environmental Project and neighborhood-based program show that requiring customers to initiate service line replacements will result in far more lead in the ground and serious health risks to Pittsburgh residents.

Finally, Pittsburgh UNITED expert Gregory Welter explained that the income-based reimbursement program is inefficient:

The program will fund replacements at the residences of customers who happen to apply for reimbursement. These replacements cannot be readily coordinated with other nearby lead service line replacements or with scheduled street-disturbing utility work. Nor will replacements through the income-based reimbursement program be targeted in neighborhoods with the highest concentrations of families most vulnerable to lead exposure. Such haphazard, one-off replacements lose out on the economies of scale that would be generated by a more systematic approach.¹⁷⁶

¹⁷³ *Id.* at 9.

¹⁷⁴ LTIIP, at 53-54.

¹⁷⁵ Pittsburgh UNITED St. C-1SUPP-R, at 10.

¹⁷⁶ Pittsburgh UNITED St. C-2SUPP-R, at 7.

PWSA has experience replacing thousands of lead service lines. It is better positioned than its customers to identify homes with lead service lines, to select and negotiate with contractors, and to coordinate large numbers of replacements to take advantage of economies of scale. Shifting this burden to customers, as the income-based reimbursement program does, is inefficient and ineffective.

These three flaws with the income-based reimbursement program—requiring customers to pay for replacements up front, not offering free replacements to all customers, and relying on customers to initiate replacements—are each significant in its own right. Taken together, they will render PWSA’s program ineffective and leave thousands of customers at risk of exposure to lead, with low and moderate income residents faring the worst. The income-based reimbursement program will not ensure adequate, efficient, safe, reliable, and reasonable service. The Commission should reject PWSA’s proposal and order it to submit a new plan, as described below.

b. Continuation of Neighborhood-Based Replacement Program

PWSA need not reinvent the wheel to find an effective approach to private-side lead service line replacements. Its neighborhood-based program stands as a proven model for removing large numbers of lead service lines with speed, efficiency, and prioritization for vulnerable residents. In contrast to the income-based reimbursement program, the neighborhood-based program offers free, PWSA-coordinated replacements to all eligible customers living within designated work order areas.

Many aspects of the neighborhood-based program have contributed to its success, none of which are part of PWSA’s income-based reimbursement program. They include:

Efficiency. By replacing large numbers of lead service lines in the same geographic area, the neighborhood-based program takes advantage of economies of scale. Coordinating replacements means that contractors dig up and restore streets and sidewalks only once.¹⁷⁷ It is more difficult to coordinate customer-initiated, one-off replacements, and PWSA says that it will not try to do so through the income-based reimbursement program.¹⁷⁸ PWSA has also improved the neighborhood-based program's efficiency over time. As PWSA and its contractors gained experience, replacement costs fell by almost \$3,000 per line between 2018 and 2019.¹⁷⁹ Comparison of PWSA's costs with those reported by other utilities suggests that, with more time, PWSA could bring expenses down even more.¹⁸⁰ By contrast, replacements under the income-based reimbursement program will be performed by private contractors who may have limited experience with innovative replacement techniques and little incentive to drive down costs.

Prioritization. The neighborhood-based program targets replacements in parts of the city where residents are most at risk of lead exposure, as measured by children's blood lead levels, population of women of childbearing age and children under the age of six, and income.¹⁸¹ PWSA's prioritization efforts have been shaped by its consultation with the Community Lead Response Advisory Committee, established by the rate case settlement.¹⁸² Far from prioritizing replacements for vulnerable populations, the income-based reimbursement program effectively

¹⁷⁷ See Pittsburgh UNITED St. C-2, at 19, 27.

¹⁷⁸ Pittsburgh UNITED St. C-2SUPP-R, at 7; PWSA St. C-1RJ, at 9.

¹⁷⁹ See PWSA St. C-1, at 62 (stating that PWSA's average lead service line replacement cost for 2019 is \$9,500 per line).

¹⁸⁰ *Id.*; Pittsburgh UNITED St. 4., at 24-37 (estimating an average lead service line replacement cost for utilities at about \$6,000 per line and concluding that PWSA's costs exceed that average) (rate case testimony incorporated by reference at Pittsburgh UNITED St. C-2, at 2-3 & n.3).

¹⁸¹ Pittsburgh UNITED St. C-3, at 24-27.

¹⁸² *Id.* at 25; Recommended Decision, Docket Nos. R-2018-3002645, -3002647, at 11-15, § III.C.1.a (order entered Jan. 17, 2019).

excludes the low income customers most likely to need assistance replacing their lead service lines.

Customer Outreach. PWSA reports that 92 percent of customers accept PWSA's offer of a free private-side lead service line replacement through the neighborhood-based program.¹⁸³ PWSA has achieved these high rates of customer participation by designing a comprehensive outreach program that makes it relatively easy for customers to sign up. No applications, income verifications, or reimbursements are required. To obtain customer authorization, PWSA mails, calls, and canvasses work order areas.¹⁸⁴ It also allows customers to sign up after they have seen work being performed at their neighbors' homes.¹⁸⁵ PWSA has not proposed any outreach strategies for the income-based reimbursement program. The significant obstacles to customer enrollment make it unlikely that PWSA will secure the robust participation achieved in the neighborhood-based program.

Scalability. The neighborhood-based program can be scaled to available funding by adding or subtracting work order areas. The neighborhood-based program can also operate alongside the small-diameter water main replacement program, with PWSA coordinating replacement schedules to avoid overlap.¹⁸⁶

Despite its success, PWSA proposes to terminate the neighborhood-based program in 2020. If it does, customers with private-side lead service lines not scheduled for replacement through the small-diameter water main program will have only one option for receiving replacement assistance from PWSA: the income-based reimbursement program. For the reasons described above, this would be no option at all for many low and moderate income customers.

¹⁸³ Pittsburgh UNITED St. C-1SUPP-R, at 10.

¹⁸⁴ *Id.*; LTIP, at 53-54.

¹⁸⁵ Pittsburgh UNITED St. C-1SUPP-R, at 10.

¹⁸⁶ Pittsburgh UNITED St. C-2, at 28.

Especially when so many of its customers continue to receive drinking water with high levels of lead, it is unreasonable for PWSA to slow the pace of lead service line replacements by eliminating an effective program and diverting resources to an ineffective one. The Commission should direct PWSA to continue the neighborhood-based program unless and until PWSA implements a Commission-approved alternative for replacing private-side lead service lines.¹⁸⁷

Summary of Remedy Sought by Pittsburgh UNITED

PWSA has not met its burden to show that the lead remediation programs described in its Compliance Plan, LTIP, and testimony will ensure adequate, efficient, safe, reliable, and reasonable service. The Commission should reject PWSA's petition to approve its Compliance Plan and LTIP to the extent those plans include the income-based reimbursement program.¹⁸⁸

The Commission should instead order PWSA to submit a revised plan to replace lead service lines not scheduled for removal through PWSA's existing programs. The evidence shows that the neighborhood-based program is "necessary and in the public interest" because it offers a rapid, efficient approach to lead service line replacement that prioritizes parts of the city most at risk from lead-contaminated drinking water.¹⁸⁹ The Commission should direct PWSA to continue that program after 2020 and incorporate it into a revised Compliance Plan and LTIP. In the alternative, the Commission could leave PWSA with the discretion to propose a substitute for the neighborhood-based program, as long as the substitute program offers free, PWSA-

¹⁸⁷ Pursuant to the proposed partial settlement, if the neighborhood-based program is extended beyond September 2020, PWSA must expand the program's eligibility criteria to include homes with private-side-only lead service lines, which are currently excluded. Joint Petition for Partial Settlement, Docket Nos. M-2018-2640802, -2640803, P-2018-3005037, -3005039, at 49, ¶ III.VV.1.a.ii (filed Sept. 13, 2019); see also supra, at 9 (describing neighborhood-based program's exclusion of private-side-only lead service lines).

¹⁸⁸ See 66 Pa. C.S. §§ 3204(c), 1352(a)(7).

¹⁸⁹ See PUC, Review of Long-Term Infrastructure Improvement Plan, Docket No. L-2012-2317274, at 23 (Final Rulemaking Order entered May 22, 2014).

coordinated private-side lead service line replacements and begins no later than the neighborhood-based program's termination in 2020.

Finally, the revised Compliance Plan and LTIIP should provide details on the proposed lead remediation program's administration, including a budget and customer eligibility criteria. The parties and the general public should be able to comment on the plan, and it should be subject to Commission review and approval in an on-the-record proceeding.

2. Replacement of Non-Residential Lead Service Lines

Pittsburgh UNITED has not taken a position on PWSA's exclusion of non-residential lead service lines from its lead service line replacement program.

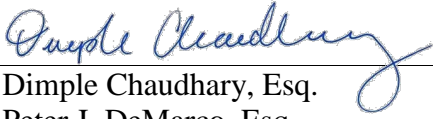
F. Other Issues

Pittsburgh UNITED has not taken a position on any other issue in this proceeding.

VI. CONCLUSION

For the reasons stated above, the Commission should deny PWSA's petition to approve its Compliance Plan and LTIIP because the plans do not ensure adequate, efficient, safe, reliable, and reasonable service. The income-based reimbursement program is opposed by the Bureau of Investigation and Enforcement, the Office of Consumer Advocate, and Pittsburgh UNITED. The Commission should reject it and direct PWSA to submit a new plan for lead remediation that describes how PWSA will offer free, utility-initiated private-side lead service line replacements to all customers. That plan should be subject to additional review and approval by the Commission in an on-the-record proceeding.

Respectfully Submitted,



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Dated: September 19, 2019

APPENDIX A
PROPOSED FINDINGS OF FACT

1. Lead is a dangerous neurotoxin. It is particularly damaging to the neurological and cardiovascular systems. Pittsburgh UNITED St. C-3, at 6-8.
2. Fetuses, infants, and children are especially vulnerable to health harms from lead exposure. Lead exposure can cause irreversible damage to developing brains. Increased blood lead levels can result in lower IQs, diminished academic achievement, increased risk of attention-related disorders, increased risk of problem behaviors, stunted growth, and impaired hearing. Pittsburgh UNITED St. C-3, at 6-8.
3. Low income, Black, and Latinx Pittsburgh residents face a disproportionate risk of lead exposure from lead-contaminated drinking water. Pittsburgh UNITED St. C-3, at 7-8, 13; Pittsburgh UNITED St. C-3SUPP-R, at 4-5.
4. There is no safe level of lead exposure. Pittsburgh UNITED St. C-3, at 9.
5. PWSA monitors lead levels in its drinking water pursuant to the federal Lead and Copper Rule and regulations issued by the Pennsylvania Department of Environmental Protection (DEP). 40 C.F.R. § 141.86(a)(3); 25 Pa. Code § 109.1103(g)(2).
6. In June 2016, more than 10 percent of PWSA tap water samples contained lead levels higher than 15 parts per billion, thus exceeding the federal “lead action level.” Pittsburgh UNITED St. C-2, at 8.
7. PWSA’s tap water samples have exceeded the lead action level four times since June 2016, including in the most recent monitoring period of January to June 2019. Pittsburgh UNITED St. C-2, at 8; Pittsburgh UNITED St. C-2SUPP-R, at 8.
8. Lead enters PWSA’s drinking water primarily through the corrosion of lead service lines. Pittsburgh UNITED St. C-2, at 6.

9. Allegheny County banned the installation of lead service lines in 1969, and the federal government banned their installation in 1986. PWSA St. C-1SD, Stip Doc. 4, at 13; 42 U.S.C. § 300g-6.
10. PWSA estimates that, as of June 2016, there were about 12,200 lead service lines in its system. PWSA Hearing Ex. 1, App. C, at 28 (hereinafter “LTIIP”).
11. PWSA’s estimate of the number of lead service lines in its system is not reliable because it has not completed a comprehensive inventory of its service line materials. Pittsburgh UNITED St. C-2, at 29-32.
12. In April 2019, PWSA began adding orthophosphate, a corrosion-inhibiting chemical, to the water it distributes. PWSA St. C-1SD, at 23.
13. Orthophosphate reduces lead service line corrosion by promoting the formation of a protective scale on the inside of lead service lines. Pittsburgh UNITED St. C-2, at 16-17.
14. Corrosion control treatment, including orthophosphate, does not eliminate the risk of lead release from lead service lines. Changes to corrosion control treatment, shifts in source water chemistry, and physical disruption of lead service lines (by, for instance, construction in the street or customer’s yard) can disturb the lead-bearing scale inside service lines and release lead into drinking water. Pittsburgh UNITED St. C-2, at 16-17.
15. Removing lead service lines is the only way to permanently protect PWSA customers from the health and safety risks posed by lead service lines. Pittsburgh UNITED St. C-2, at 17; Pittsburgh UNITED St. C-3, at 21-22.
16. PWSA’s existing lead service line replacement programs will not result in the removal of all known lead service lines from its system. Pittsburgh UNITED St. C-2, at 14, 26-27; Pittsburgh UNITED St. C-2SUPP-R, at 4-5.

17. PWSA does not yet have a plan for removing all lead service lines from its system.
Pittsburgh UNITED St. C-2, at 14, 26-27; Pittsburgh UNITED St. C-2SUPP-R, at 4-7.
18. PWSA currently replaces most lead service lines through its neighborhood-based program. Pittsburgh UNITED St. C-2, at 10; LTIIP, at 28.
19. The neighborhood-based program replaces full and public-side-only lead service lines (but not private-side-only lead service lines) located within contiguous, multi-block work order areas. Pittsburgh UNITED St. C-2, at 10.
20. The neighborhood-based program selects areas of the city in which to conduct lead service line replacements by assessing factors related to the risks of lead exposure, including children's blood lead levels, population of women of childbearing age and children under six, and income. Pittsburgh UNITED St. C-3, at 24-27.
21. The neighborhood-based program takes advantage of economies of scale by replacing all eligible lead service lines in a work order area at the same time. Pittsburgh UNITED St. C-2, at 27.
22. PWSA reports that 92 percent of customers accept PWSA's offer of a free private-side lead service line replacement through the neighborhood-based program. Pittsburgh UNITED St. C-1SUPP-R, at 10.
23. PWSA plans to terminate the neighborhood-based program in 2020. Pittsburgh UNITED St. C-2, at 12; LTIIP, at 28.
24. After PWSA terminates the neighborhood-based program, it plans to complete most lead service line replacements through the small-diameter water main replacement program. Pittsburgh UNITED St. C-2, at 12; LTIIP, at 28.

25. Between 2020 and 2026, PWSA says it will remove about 138 miles of small-diameter water mains, replacing all public-side service lines attached to those mains and offering to replace at no cost to the customer any private-side lead service line attached to a public-side service line it removes. Pittsburgh UNITED St. C-2SUPP-R, at 2-4.
26. On July 26, 2019, PWSA's Board of Directors approved an income-based reimbursement program that will offer reimbursements to customers who replace private-side lead service lines at their residences. PWSA St. C-1SD, Ex. RAW-C-46, ¶ 4.10; PWSA St. C-1SD, at 30-31; Pittsburgh UNITED St. C-1SUPP-R, at 4.
27. The amount of the reimbursement available to customers under PWSA's proposed income-based reimbursement program depends on the customer's income. Customers earning less than 300 percent of the federal poverty line are entitled to a full reimbursement. Customers earning between 301 and 400 percent of the federal poverty line are entitled to a 75 percent reimbursement. Customers earning between 401 and 500 percent of the federal poverty line are entitled to a 50 percent reimbursement. Customers earning more than 500 percent of the federal poverty line are entitled to a \$1,000 stipend. PWSA St. C-1SD, Ex. RAW-C-46, ¶ 4.10; Pittsburgh UNITED St. C-1SUPP-R, at 4.
28. PWSA estimates the average expense to customers of replacing a private-side lead service line to be \$5,500. PWSA St. C-1RJ, at 6.
29. To participate in the income-based reimbursement program, customers will have to determine if their residence has a private-side lead service line, complete PWSA's income verification process, hire a contractor to replace the service line, pay thousands of dollars for the replacement, and apply to PWSA for reimbursement. Pittsburgh UNITED St. C-1SUPP-R, at 7.

30. Fifty-three percent of PWSA's customers earn below 300 percent of the federal poverty line. PWSA St. C-1SD, at 30-31.
31. Many low and moderate income customers will not be able to afford to pay the up-front costs of a lead service line replacement. They will not be able to participate in PWSA's income-based reimbursement program. Pittsburgh UNITED St. C-1SUPP-R, at 5-7.
32. The Bureau of Investigation and Enforcement, the Office of Consumer Advocate, and Pittsburgh UNITED submitted testimony opposing the income-based reimbursement program. I&E St. 4-RS; OCA St. 2R-Supp; Pittsburgh UNITED St. C-1SUPP-R; Pittsburgh UNITED St. C-2SUPP-R; Pittsburgh UNITED St. C-3SUPP-R.

APPENDIX B
PROPOSED CONCLUSIONS OF LAW

1. The Commission has jurisdiction over the subject matter and the parties in this proceeding. 66 Pa. C.S. § 3204.
2. As the party petitioning for approval of the Compliance Plan and LTIIP, PWSA bears the burden of proof in this proceeding. 66 Pa. C.S. § 332(a); 52 Pa. Code. § 121.4(d).
3. To meet its burden of proof, PWSA must present substantial evidence that the Compliance Plan and LTIIP “adequately ensure and maintain the provision of adequate, efficient, safe, reliable and reasonable service.” 66 Pa. C.S. §§ 3204(c), 1352(a)(7); Burleson v. PUC, 461 A.2d 1234, 1236 (Pa. 1983).
4. In assessing whether a utility provides adequate and safe service to its customers, the Commission has observed that “*every* customer is entitled to water that is fit for basic domestic purposes; e.g., cooking, drinking, washing, and bathing.” PUC v. Pa. Gas & Water Co., Docket Nos. R-850178 et al., (Opinion and Order entered Apr. 24, 1986) (emphasis in original).
5. In its Final Implementation Order for effectuating Chapter 32, the Public Utility Commission directed “PWSA to develop and propose a comprehensive plan to address lead levels in its water supply and the replacement of lead service lines” as part of its Compliance Plan and LTIIP. Implementation of Ch. 32 of the Public Utility Code Re Pittsburgh Water and Sewer Authority, Final Implementation Order, Docket Nos. M-2018-2640802, -2640803, at 32 (order entered Mar. 15, 2018).
6. As the Commission noted at the outset of this proceeding, “As to regulated public water and wastewater service, the Commission and DEP are State agencies jointly charged with the protection of fundamental aspects of public health and safety. The procedure

established here reflects the challenges of the PWSA transition and a harmonization of the joint regulatory roles of DEP and the Commission.” Pa. PUC, Secretarial Letter, Assignment of the Pittsburgh Water and Sewer Authority Compliance Plan to the Office of Administrative Law Judge (Corrected), Docket Nos. M-2018-2640802, -2640803, at 3 (Nov. 28, 2018).

7. Substantial evidence shows that PWSA’s proposed income-based reimbursement program will disproportionately exclude the groups of customers with among the highest risk of lead exposure—low and moderate income customers, as well as Black and Latinx customers.
8. Substantial evidence shows that requiring customers earning more than 300 percent of the federal poverty line to pay a portion of the costs of a service line replacement will discourage participation in PWSA’s income-based reimbursement program.
9. Substantial evidence shows that requiring customers to initiate lead service line replacements will decrease participation in the income-based reimbursement program.
10. Substantial evidence shows that PWSA’s income-based reimbursement program will result in more customers—particularly low income, Black, and Latinx customers—receiving substandard service than if PWSA were to implement a lead service line replacement program that offers free, PWSA-initiated lead service line replacements.
11. Substantial evidence shows that the neighborhood-based program is an efficient way to remove large numbers of lead service lines in parts of the city where residents are most at risk of lead exposure.
12. PWSA has failed to present substantial evidence that the income-based reimbursement program, together with the termination of the neighborhood-based program in 2020, will

“adequately ensure and maintain the provision of adequate, efficient, safe, reliable and reasonable service.” See 66 Pa. C.S. § 3204(c).

13. Substantial evidence shows that continuing the neighborhood-based program beyond 2020 is necessary and in the public interest and will “adequately ensure and maintain the provision of adequate, efficient, safe, reliable and reasonable service,” while PWSA develops a plan for replacing all lead service lines in its system. See 66 Pa. C.S. § 3204(c); PUC, Review of Long-Term Infrastructure Improvement Plan, Docket No. L-2012-2317274, at 23 (Final Rulemaking Order entered May 22, 2014).