

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

SUPPLEMENTAL DIRECT TESTIMONY OF

BARRY KING, PE

ON BEHALF OF
THE PITTSBURGH WATER
AND SEWER AUTHORITY

Docket Nos.
R-2020-3017951 (Water)
R-2020-3017970 (Wastewater)

TOPICS:

Lead Infrastructure Plan

May 15, 2020

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1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND POSITION FOR THE RECORD.**

3 A. My name is Barry King and I am the Director of Engineering for The Pittsburgh Water
4 and Sewer Authority (“PWSA” or “Authority”).

5 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS PROCEEDING?**

6 A. Yes, I submitted Direct Testimony on March 6, 2020, which accompanied the rate filing.

7 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY?**

8 A. The purpose of my Supplemental Direct Testimony is to sponsor PWSA’s Proposed Lead
9 Infrastructure Plan Tariff Supplement. The proposed supplement would update PWSA’s
10 tariff to reflect that the Authority has voluntarily taken on the responsibility to replace a
11 qualifying residential customer-owned service line made of lead, galvanized iron, or
12 galvanized steel in accordance with PWSA’s Lead Infrastructure Plan. The proposed
13 supplement also meets the requirement of Act 120 of 2018 to establish an annual
14 expenditure cap on the replacement of customer-owned lead water service lines.

15 **Q. ARE YOU SPONSORING ANY EXHIBITS?**

16 A. Yes. I am sponsoring Exhibit BK-4, which is PWSA’s Lead Infrastructure Plan and
17 Exhibit BK-5, PWSA’s Proposed Lead Infrastructure Plan Tariff Supplement.

18 **II. LEAD INFRASTRUCTURE PLAN**

19 **Q. PLEASE PROVIDE AN OVERVIEW OF PWSA’S LEAD INFRASTRUCTURE**
20 **PLAN.**

21 A. Pursuant to the Commission’s March 26, 2020 Final Order in Stage 1 of PWSA’s
22 Compliance Plan proceeding (Docket Nos. M-2018-2640802 and M-2018-
23 2640803)(“Compliance Plan Order”), PWSA submitted a comprehensive document that
24 sets forth the entirety of PWSA’s lead infrastructure plan in Appendix C of the

1 Authority's 5-Year Long-Term Infrastructure Improvement Plan submitted to the
2 Commission on April 27, 2020 ("Lead Infrastructure Plan"). The Lead Infrastructure
3 Plan is attached as Exhibit BK-4.

4 **Q. UNDER PWSA'S CURRENT WATER TARIFF, WHO HAS THE**
5 **RESPONSIBILITY FOR THE REPLACEMENT OF CUSTOMER-OWNED**
6 **SERVICE LINES?**

7 A. Part III, Section B.1 of PWSA's current Tariff Water – Pa.P.U.C. No. 1 provides that the
8 customer has the sole responsibility to furnish, install, maintain and/or replace a
9 customer-owned service line.

10 **Q. WHAT REVISIONS TO PWSA'S WATER TARIFF ARE BEING PROPOSED AT**
11 **THIS TIME?**

12 A. The Commission's Phase 1 Compliance Plan Order directed PWSA to file a *pro forma*
13 tariff supplement to reflect PWSA's decision to voluntarily take on the responsibility to
14 replace a qualifying residential customer-owned service line made of lead, galvanized
15 iron, or galvanized steel in accordance with PWSA's Lead Infrastructure Plan and to
16 update PWSA's tariff pursuant to Act 120 of 2018. PWSA's proposed modifications to
17 its tariff are set forth in the Proposed Lead Infrastructure Plan Tariff Supplement
18 provided in Exhibit BK-5.

19 **Q. ARE THE PROPOSED TARIFF MODIFICATIONS REASONABLE AND IN**
20 **THE PUBLIC INTEREST?**

21 A. Yes. The proposed tariff modifications clarify the Authority's responsibility to replace a
22 qualifying residential customer-owned lead service line in accordance with PWSA's Lead
23 Infrastructure Plan, which is clearly in the public interest.

1 **Q. PLEASE DESCRIBE HOW THE PUC’S COMPLIANCE PLAN ORDER**
2 **ADDRESSED THE PARTIAL SETTLEMENT REGARDING LEAD SERVICE**
3 **LINE REMEDIATION ISSUES.**

4 A. The PUC’s Compliance Plan Order adopted the resolution of the issues in the Joint
5 Petition for Partial Settlement (“Partial Settlement”) with respect to PWSA’s lead
6 remediation program. The Order also modified Paragraph III.VV.1.b of the Partial
7 Settlement to include two new subsections.¹ The two new subsections create new
8 requirements for PWSA’s lead remediation efforts as they relate to partial lead service
9 line replacements.

10 **Q. WHY ARE THE TWO SUBSECTIONS ADDED BY THE PUC TO THE**
11 **PARTIAL SETTLEMENT NOT REFLECTED IN THE *PRO FORMA* TARIFF**
12 **SUPPLEMENT?**

13 A. The two subsections are subject to review and revision based on the Commission’s
14 decision regarding petitions for reconsideration, clarification and/or amendment filed in
15 the Authority’s compliance plan proceeding. The Proposed Lead Infrastructure Plan
16 Tariff Supplement, Part VI, Section 2(c) reflects that the plan is subject to review based

¹ The new subsections added by the Commission to Paragraph III.VV.1.b. of the Partial Settlement are provided below:

v. In the event PWSA determines it will not complete the replacement of a private-side lead service line due to any of the circumstances described in III.VV.1.b.i., PWSA will temporarily not replace the public-side service line until it has reported the factual circumstances to the CLRAC in accordance with the Settlement at III.WW.4.b. After consulting with the CLRAC, PWSA should make a determination as to the appropriate next steps, including, but not limited to, potentially not replacing the public side of the line while corrosion control treatments and distribution of water filters remain in place or potentially receiving Commission approval to make reasonable changes, substitutions and extensions in or to service and facilities as may be necessary or proper for the accommodation and safety of patrons with these extraordinary circumstances or potentially receiving Commission approval of tariff provisions quantifying specific limits on PWSA’s financial responsibility for a private-side lead service line replacement in extraordinary circumstances.

vi. In the event PWSA does not complete the replacement of a private-side lead service line due to any of the circumstances described in III.VV.1.b.ii-iv., PWSA will not permit the re-connection of the private-side lead service line to the newly installed public-side service line in accordance with PWSA’s tariff at Section B, Rules 1 and 4. PWSA will begin the process to terminate service to the residence with prior notice in accordance with PWSA’s tariff at Section C, Rule 3.j. Reconnection of service shall not be permitted until the customer certifies the removal of the private-side lead service line in accordance with PWSA’s tariff at Section B, Rule 4.

1 on the Commission's to-be-issued decision in the matter. Part VI, Sections 4(b)-(c) of the
2 Proposed Lead Infrastructure Plan Tariff Supplement are reserved for future use and will
3 be updated to reflect the language upon a determination by the Commission.

4 **Q. THE PUC ADDED PARAGRAPH III.VV.1.B.V. TO THE PARTIAL**
5 **SETTLEMENT AND INDICATED THAT PWSA COULD *POTENTIALLY***
6 **RECEIVE COMMISSION APPROVAL TO MAKE REASONABLE CHANGES,**
7 **SUBSTITUTIONS AND EXTENSIONS IN OR TO SERVICE AND FACILITIES**
8 **AS MAY BE NECESSARY OR PROPER FOR THE ACCOMMODATION AND**
9 **SAFETY OF PATRONS IN CERTAIN EXTRAORDINARY CIRCUMSTANCES.**
10 **COULD YOU COMMENT ON THIS PORTION OF THE PUC'S ORDER?**

11 A. Yes. In Ordering Paragraph 12(b), the PUC directed that PWSA, in a *pro forma* tariff
12 supplement in its next rate case, quantify any specific limits on PWSA's financial
13 responsibility for a private-side lead service line replacement in certain extraordinary
14 circumstances. To date, PWSA has not denied a customer-owned lead service line
15 replacement on the basis of cost and the extraordinary circumstances contemplated occur
16 very infrequently. PWSA believes that setting a specific limitation on its financial
17 responsibility for replacements in extraordinary circumstances is not warranted because
18 each replacement is evaluated on a case by case basis and it would be very difficult to
19 establish a generic cap or other limitation. PWSA believes that the language proposed in
20 Part VI, Section 4(a)(i) of the Proposed Lead Infrastructure Plan Tariff Supplement is
21 sufficient to provide PWSA the discretion to protect its financial interests in
22 extraordinary circumstances.

23 **Q. WHAT ELSE DOES THE PUC'S COMPLIANCE PLAN ORDER REQUIRE?**

24 A. Ordering Paragraph 12(a) of the Compliance Plan Order requires PWSA to file a *pro*
25 *forma* tariff supplement in this rate case that proposes an expenditure cap pursuant to Act
26 120 of 2018.

1 **Q. WHAT DOES ACT 120 OF 2018 REQUIRE A PUBLIC UTILITY TO INCLUDE**
2 **WITH A TARIFF SUPPLEMENT FOR THE REPLACEMENT OF CUSTOMER-**
3 **OWNED LEAD WATER SERVICE LINES?**

4 A. Water utilities seeking recovery under Act 120 of 2018 must include in a tariff
5 supplement an expenditure cap on the maximum number of customer-owned lead water
6 service lines that may be replaced annually. 66 Pa.C.S. § 1311(b)(2)(vi).

7 **Q. WHAT EXPENDITURE CAP DID PWSA ESTABLISH IN THE PROPOSED**
8 **TARIFF SUPPLEMENT?**

9 A. PWSA’s Proposed Lead Infrastructure Plan Tariff Supplement establishes in Part VI,
10 Section 2.a, an expenditure cap of \$11.0 million per year for the replacement of
11 customer-owned lead water service lines.

12 **Q. IS THE PROPOSED EXPENDITURE CAP REASONABLE AND IN THE**
13 **PUBLIC INTEREST?**

14 The proposed expenditure cap is reasonable and in the public interest as it is
15 linked to the conservative estimate for the annual number of residential customer-owned
16 lead service line replacements (“LSLRs”) to be performed under the annual Small
17 Diameter Water Main Replacement Program (“SDWMRP”) projected in PWSA’s 5-Year
18 Long-Term Infrastructure Improvement Plan. The proposed expenditure cap reflects a
19 realistic estimate of spending required to replace the qualifying residential customer-
20 owned lead service lines (“LSLs”) in its system by 2026. Specifically, the expenditure
21 cap includes an estimated \$1.0 million per year for reimbursements to customers who
22 have replaced qualifying residential customer-owned LSLs, and approximately \$10.0
23 million per year estimated for residential customer-owned LSLRs to be completed under
24 the annual SDWMRP, conservatively approximated based on replacing 26 miles per year
25 and assuming a higher than average number of customer-owned LSLs per mile.

1 **Q. WHAT WARRANTY DOES PWSA PROVIDE FOR A CUSTOMER-OWNED**
2 **LEAD SERVICE LINE THAT IT REPLACES?**

3 A. The agreement that the Authority enters into with a property owner for replacement of a
4 customer-owned lead service line provides a 30-day warranty on workmanship and
5 materials.

6 **Q. WHAT WARRANTY PROVISION DOES PWSA PROPOSE IN THE LEAD**
7 **INFRASTRUCTURE PLAN TARIFF SUPPLEMENT?**

8 A. PWSA proposes in Part VI, Section 5 of Proposed Lead Infrastructure Plan Tariff
9 Supplement that the Authority will provide, at a minimum, a 30-day warranty on
10 workmanship and materials for replacement of a customer-owned lead service line.

11 **Q. IS THE PROPOSED WARRANTY PROVISION IN THE *PRO FORMA* TARIFF**
12 **SUPPLEMENT REASONABLE AND IN THE PUBLIC INTEREST?**

13 A. Yes. The proposed warranty provision reflects the terms of the agreement that the
14 Authority enters into with a property owner for a customer-owned lead service line
15 replacement. Act 120 of 2018 provides that the Commission is to establish, by regulation
16 or order, standards to ensure that work performed by a public utility or its contractor to
17 replace a customer-owned lead water service line is accompanied by a warranty that the
18 Commission determines is appropriate. 66 Pa.C.S. § 1311(b)(2)(vii). The Commission
19 recently opened a new docket at L-2020-3019521 for a rulemaking to implement Act 120
20 of 2018. PWSA anticipates that the Commission will review warranty terms in the
21 context of the rulemaking proceeding. PWSA will modify its warranty provision
22 pursuant to any standard established by the Commission by regulation or order pursuant
23 to Act 120 of 2018.

24 **III. CONCLUSION**

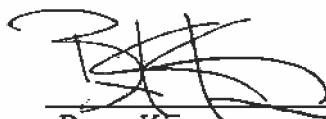
1 **Q. DOES THAT COMPLETE YOUR SUPPLEMENTAL DIRECT TESTIMONY?**

2 A. Yes.

VERIFICATION

I, Barry King, hereby state that: (1) I am the Director of Engineering and Construction for The Pittsburgh Water and Sewer Authority (“PWSA”); (2) the facts set forth in my testimony are true and correct (or are true and correct to the best of my knowledge, information and belief); and, (3) I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. § 4904 (relating to unsworn falsification to authorities).

Dated May15, 2020



Barry King
Director of Engineering and Construction
The Pittsburgh Water and Sewer Authority

Exhibit BK-4

**The Pittsburgh Water and Sewer Authority's (PWSA) Lead Infrastructure Plan
Docket Nos.: M-2018-2640802; M-2018-2640803; P-2018-3005037; P-2018-3005039**

PWSA's service plan to remedy residential lead service lines (LSLs) existing within and connected to its water distribution system is contained in the following documents in this proceeding: Compliance Plan (CP), CP Supplement, the Long-Term Infrastructure Improvement Plan dated August 21, 2019 (Hearing Exh. 3) (LTIIP), PWSA's Board July 2019 Policy (Exh. RAW C/46), relevant expert testimony, and the Partial Settlement filed September 13, 2019. In the Opinion and Order entered in this proceeding (Final Order), the Commission, *inter alia*, approved in part and modified in part PWSA's LSL plan. Based on the foregoing documents and the Final Order, below is a summary of PWSA's LSL plan.

**PWSA's Service Plan to Remove Lead Service Lines
Existing in and Connected to its Water Distribution System**

- A. Effective Dates:** The terms in this section will take effect on the entry date of the Final Order. Unless specifically noted, each term in this section will remain in effect until December 31, 2026. Partial Settlement at ¶ III.PP.
- B. Goal:** PWSA's current goal is to complete the replacement of all public- and private-side lead service lines in its system by 2026. Partial Settlement at III.QQ.2. "Public-side service line" means the portion of the service line on the street side of the curb box. "Private-side service line" means the portion of the service line on the residence side of the curb box. Partial Settlement at ¶ III.OO.3-4.
- C. Objective:** To refrain from performing partial lead service line replacements at residential properties. July 2019 Policy at 1. "Partial lead service line replacement" means the replacement of a public-side service line, made of any material, without the simultaneous replacement of a connected private-side lead service line. Partial Settlement at ¶ III.OO.6.
- D. Eligibility Criteria:** This plan applies to:
1. Any lead service line: (Partial Settlement at ¶ III.QQ.2)
 - a. serving any residence (as defined in Partial Settlement at ¶ III.VV.1.a.i) (defined below);
 - b. of which PWSA is aware;
 - c. the replacement of which is operationally feasible (as determined pursuant to ¶ 3.3 of PWSA's Board July 2019 Policy (defined below); and,

- d. in the case of a private-side line, the owner authorizes the replacement or replaces the line in accordance with PWSA policy. (Partial Settlement at ¶ III.QQ.2)
2. “Service Line” means the pipe or pipes that connects a water main to a building inlet and any pigtail, gooseneck, or other fitting connected to the pipe or pipes. Partial Settlement at ¶ III.OO.2.
3. “Lead service line” includes any service line made of lead, galvanized iron, or galvanized steel. Partial Settlement at ¶ III.OO.5.
4. “Residence” means a residential property with no more than four (4) dwelling units or a dual use property (commercial & residential) with service lines 1-inch in diameter or less, for which the PWSA has maintenance responsibility for the water service line from the water main to and including the curb stop, as more fully described in PWSA Rules and Regulations. Partial Settlement at ¶ III.VV.1.a; *see* Partial Settlement at 49, n. 36.
 - a. Includes any lead service line greater than 1-inch diameter that is connected to a single-family residence. If PWSA discovers such a line, PWSA will replace the line with a suitable-sized line. *See* Exhibit RAW/C-2, PWSA’s response to TUS-I-4.
5. If PWSA determines, in its sole discretion, that replacement of the portion of the lead service line owned by the property owner at a particular residence or related interior plumbing modification is not technically feasible, the residence is unsafe from a structural or sanitary condition, or will result in excess expense, due to conditions, such as length, terrain, obstructions, structures, pavements, trees, or other utilities, PWSA may exclude such residence and not replace the private side of the LSL. Partial Settlement at ¶ III.QQ.2; July 2019 Policy at 2, ¶ 3.3 (PWSA Exh. RAW/C-46).

E. Inventory of LSLs:

1. PWSA is working with the University of Pittsburgh to develop a machine-learning model that will predict the material composition of public-side and private-side service lines, based on a model used in Flint, Michigan. PWSA will continue to collaborate with the University of Pittsburgh on this project. Partial Settlement at ¶ III.QQ.1.

Exhibit BK-5

- a. After the model is peer-reviewed and quality assurance / quality control review is completed for its predictions of the locations of public- and private-side LSLs, PWSA will use the data from the model predictions as part of the lead service line mapping on PWSA's website. Partial Settlement at ¶ III.QQ.1.a.
 - b. PWSA will publicize these updates by, at a minimum, issuing a press release once they are final. Partial Settlement at ¶ III.QQ.1.b.
 - c. After the machine-learning model generates predictions for the composition of all public- and private-side service lines and no later than March 31, 2020, PWSA will present to the Community Lead Response Advisory Committee (CLRAC), for its information and advisory input, PWSA's plan for completing its inventory of service lines, including the steps PWSA will take to further investigate the composition of service lines based on the model's predictions. Partial Settlement at ¶ III.QQ.1.c.
2. By December 31, 2020, PWSA will establish (and provide to the CLRAC, for its review and advisory input), an estimate of the number of private-side lead service lines connected to residential structures in PWSA's service area. Partial Settlement at ¶ III.QQ.2.a.
 3. PWSA will provide an update to this inventory on an annual basis as described below in Section III.QQ.3 of the Partial Settlement. Partial Settlement at ¶ III.QQ.2.a.
- F. **Retroactive private-side replacements to be performed by PWSA for partial replacements of public-side lead service lines previously completed by PWSA between February 1, 2016 and December 31, 2018:** PWSA's 2016 exceedance of the lead action level under the Lead and Copper Rule (Rule) triggered PWSA's requirement under the Rule to replace seven percent of its public-side LSLs within one year. When PWSA first began its replacement

efforts, it replaced only the public-side of the lead service lines.¹ PWSA suspended partial LSL replacements in June 2017 after post-replacement testing revealed elevated lead levels at several homes.²

1. Customers who received a partial public LSL replacement after February 1, 2016 due to a PWSA action, such as, for example, a LSLR contract, PWSA operation replacement or water main replacement, “will be eligible” to have their private LSL replaced by PWSA, at no charge to the customer. July 2019 Policy at 1-2.
2. For customers who elected to replace their private LSL as a result of a PWSA public side LSL replacement between February 1, 2016 and December 31, 2018, PWSA will offer a direct reimbursement for costs incurred up to a maximum of \$5,500 (based on the average cost for PWSA to replace private lines). July 2019 Policy at 2.
3. For customers who elected to replace their private LSL on their own, meaning, the decision was unrelated to a public side LSL, PWSA will not offer reimbursement. July 2019 Policy at 2.

G. Systematic program replacements performed by PWSA after January 1, 2019:

1. PWSA will offer to replace a private-side LSL at no direct cost to the property owner:
 - a. At any residence where PWSA replaces a public-side service line connected to a private-side LSL; and
 - b. At any residence with a private-side only LSL located within a work order area of a neighborhood-based LSL replacement program where LSL replacements are performed after completion of the 2019 LSL Replacement program which is currently scheduled to be completed by September 2020.
 Partial Settlement at ¶ III.VV.1.a.i-ii.
2. To complete the replacement of all LSLs by 2026, PWSA will perform

¹ As of August 2, 2019, PWSA performed 456 partial LSL replacements between February 1, 2016 and December 31, 2018, and PWSA has offered to replace the private LSL at all of those locations. Of the 456 locations, 245 property owners accepted PWSA’s offer and PWSA performed private LSL replaces at 215 of those locations. A total of 79 eligible property owners declined to have their line replaced, and the remainder 123 property owners were unresponsive. Twenty-five of the locations were determined to be non-lead after verification. PWSA St. No. C-1SD at 29.

² UNITED St. C-2 at 9-10 (citing PWSA to Temporarily Suspend Partial Lead Line Replacements (June 2, 2017), *available at* <http://lead.pgh2o.com/pwsa-to-temporarily-suspend-partial-lead-line-replacements/>).

the work in accordance with the following programs:

a. ***Small Diameter Water Main (SDWM) Accelerated Replacement Program:***

- i. “Small-diameter water main replacement program” means PWSA’s program for replacing small-diameter water mains and associated lead service lines between 2019 and 2026, as described in the Long-Term Infrastructure Improvement Plan (LTIIIP) on page 18 and Tables 2-7 and 2-8 on pages 28-29 (*See* PWSA Hearing Exh. No. 3). Partial Settlement at ¶ III.OO.11.
- ii. PWSA’s system has about 720 miles of SDWMs. LTIIIP at 18. PWSA estimates that, on average, each mile of SDWM has 40.9 private side LSLs connected to it. UNITED St. C-2SUPP-R at 4 (citing PWSA response to UNITED-I-13).
- iii. Between 2020 and 2026, PWSA is proposing to conduct most LSL replacements through its accelerated SDWM replacement program. LTIIIP at 28 (PWSA Hearing Exh. No. 3); PWSA St. C-1 at 56; UNITED St. C-2 at 12. PWSA is proposing to accelerate replacement of its SDWMs to reduce service disruptions from main breaks. LTIIIP at 18; UNITED St. C-2 at 12.
- iv. For 2020, PWSA has identified SDWMs for replacement. UNITED St. C-2 at 12; PWSA St. C-1 at 63; Exhibit RAW/C-25. These mains are located in the same areas as those covered by the 2019 neighborhood-based LSL replacement program. UNITED St. C-2 at 12; PWSA St. C-1 at 63.
- v. Starting January 1, 2021, PWSA will endeavor, to the maximum extent possible and consistent with balancing its other regulatory, infrastructure and consumer obligations and priorities, to replace at least ten (10) miles per year of SDWM in Priority Lead Neighborhoods. Partial Settlement at ¶ III.VV.2.a.

A. No later than July 1, 2020, PWSA, in

- consultation with the CLRAC, will designate the census tracts or other appropriate geographic units in its service area that constitute Priority Lead Neighborhoods. Partial Settlement at ¶ III.VV.2.a.1.
- B. The designation of Priority Lead Neighborhoods will consider children's blood lead levels, the prevalence of children under six years of age and women of child-bearing age, income, lead service line density, or any combination of lead-related or public health-related factors recommended by the CLRAC. Partial Settlement at ¶ III.VV.2.a.ii.
- vi. By September 30, 2019, and each year thereafter until September 30, 2026, PWSA will create (and present to the CLRAC, for review and advisory input) a plan describing the areas where the SDWM replacements will occur in 2021 and each year thereafter. Partial Settlement at ¶ III.QQ.3.
- A. The plan will include an inventory update detailing the number and location of lead service lines replaced the preceding year, the mileage of SDWMs (and number of associated lead service line replacements) occurring in Priority Lead Neighborhoods (infra ¶ III.VV.2.a), the total mileage of small diameter water mains and number of lead service lines anticipated to be removed in the existing and following year, and the number and location of lead service lines remaining. Partial Settlement at ¶ III.QQ.3.a.
- B. For the September 2022 update and each year thereafter until the September 2026 update if PWSA did not replace 10 miles of small diameter water main in Priority Lead Neighborhoods in the preceding year, *see* ¶ III.VV.2.a, the inventory update will explain the factors that prevented PWSA from doing so. Partial Settlement at ¶ III.QQ.3.b.

- C. The inventory update will also explain how PWSA plans to address those factors and endeavor to the maximum extent possible to replace at least ten (10) miles of small diameter water main in Priority Lead Neighborhoods in the existing and following year. Partial Settlement at ¶ III.QQ.3.c.
- vii. PWSA plans to complete a two-year project to add information about its SDWMs to its Geographic Information System (GIS) database. PWSA St. C-1 at 63; UNITED St. C-2 at 13 (citing UNITED St. C-2 Appendix B, 6, UNITED I-8).
- b. ***LSL Neighborhood-Based Replacement Program:***
- i. “Neighborhood-based lead service line replacement program” means the program, described in part on pages 27-28 of the LTIIP (PWSA Hearing Exh. No. 3), in which PWSA replaces all public-side lead service lines and eligible private-side lead service lines in work order areas. Partial Settlement at ¶ III.OO.12.
- ii. *Discontinuance of Existing 2019 LSL Replacement Program in September 2020:* During 2019 and 2020 LSL replacements under this program, which replaces lines on a neighborhood basis, overall work orders will be prioritized based on the prevalence of children under six years of age and women of child bearing age, and incidences of high blood levels in PWSA’s drinking water service territory. July 2019 Policy at 2; PWSA St. No. C-1SD at 27; PWSA St. C-1RJ at 16. PWSA is proposing to discontinue its neighborhood-based replacement program after completing replacements funded by PennVEST in September 2020. PWSA St. C-1 at 56-58; PWSA St. C-1R at 51-52; PWSA St. C-1SD at 27; UNITED St. C-2 at 12 (citing UNITED St. C-2 Appendix B, 24, I&E PS-30).
- iii. *For any future neighborhood-based LSL replacement program:* PWSA will prioritize neighborhood-based LSL replacement program work orders according to factors identified in consultation with the CLRAC,

including but not necessarily limited to, children's blood lead levels, the prevalence of children under six years of age and women of child bearing age, income, and LSL density. Partial Settlement at ¶ III.VVV.3.a.i. PWSA will try to obtain a property owner's consent for a private-side LSL replacement by making at least one attempt to contact the property owner by mail, one attempt by telephone, and one attempt by visiting the residence in person. Partial Settlement at ¶ III.VV.3.a.ii.

- c. ***Community Environmental Project (CEP):*** As required under the DEP COA, by November 2020, PWSA will offer to replace the private-side LSLs of about 200 low-income customers (defined as households with income levels below 250 percent of the federal poverty level (FPL), as adjusted annually) at a program budget of \$1.8 million.³ July 2019 Policy at 3; 2017 DEP COA ¶ 4(c); UNITED St. C-2 at 11. Replacements performed under the CEP will be identified by customer-requests and vetted through a third-party administrator. July 2019 Policy at 3. The Dollar Energy Fund, Inc. is the current administrator. PWSA St. C-1SD at 32.⁴
- d. ***Ongoing Maintenance of Line Breaks/Leaks:*** PWSA will replace a private-side LSL when PWSA's operations crew replaces a public-side service line, regardless of material, as a result of line breaks or leaks, including unplanned emergency replacements. July 2019 Policy at 3.
- e. ***Additional Plan to be filed by March 31, 2021:***
 - i. By March 31, 2021, PWSA will formulate a plan and timeline for removing the known public-side and private-side LSLs connected to a residential structure that will not be replaced by PWSA's other LSL

³ In December 2019, PA DEP approved increasing the eligibility threshold from households with income levels below 250 percent of the federal poverty level (FPL), as adjusted annually, to households with income levels below 300 percent of the FPL, as adjusted annually.

⁴ As of July 29, 2019, a total of 269 customers have qualified under the CEP program and returned the customer consent agreement. The PWSA verified the service line matter of 185 CEP households. Of these households, the PWSA found non-lead lines on both sides of the curb stop at 79 locations. The PWSA replaced the private side LSL at 74 locations and the public side LSL at 66 locations, as some of the locations did not require a full LSL replacement. Work on the remaining locations is pending. PWSA St. C-1SD at 32. As of June 30, 2019, the PWSA expended a total of \$233,897.50 of CEP locations funded from the \$1.8 million budget established in the PA DEP COA. The PWSA also spent \$382,217 on the public side and other CEP-location related work that is not eligible to be funded from the \$1.8 million budget. PWSA St. C-1SD at 33.

replacement efforts, including the SDWM replacement program described above. The plan will describe how PWSA will locate and replace the remaining known LSLs in its system, identify a target date for replacing all LSLs, and establish milestones for measuring progress towards replacement of all LSLs by the target date. Partial Settlement at ¶ III.QQ.2.b.

- ii. If PWSA determines that it is not feasible to replace all LSLs by December 31, 2026, the plan will identify a new target date and include an explanation as to why that new target date represents the earliest feasible date for replacing all LSLs. The plan will be presented to the CLRAC for its review and advisory input. PWSA may revise the plan, including milestones and the target date for replacing all LSLs, as needed as new information becomes available. Any such revisions will be presented and explained to the CLRAC for its review and advisory input. In evaluating the feasibility of its plan, PWSA will consider factors such as financial considerations, operational constraints, federal and state regulatory requirements and the results of its inventory. Partial Settlement at III.QQ.2.c.

- f. ***Identification of Additional Funding Sources for LSL Replacements:*** PWSA will make a good faith effort to identify additional funding sources other than rates for lead service line replacements, including but not limited to low or no cost funding opportunities, such as loans and grants. PWSA will request funding from these sources if appropriate and reasonable. This commitment will continue for the duration of the replacement program for lead service lines. Partial Settlement at ¶ III.VV.1.c.

H. Terms and Conditions of Private Side Replacements Performed by PWSA:

The following terms and conditions of PWSA performing replacements of the private-side LSLs will apply:

- 1. Prior to conducting a private-side lead service line replacement, PWSA will provide the property owner with information about the property damage that might occur during the replacement and will describe the restoration that PWSA will perform. Partial Settlement at ¶ III.VV.1.d.

2. Property owners will be contacted in advance and asked to enter into an agreement to allow PWSA employees and contractors to gain access to their private property in order to replace their private LSLs. The agreement will include provisions that require the property owner(s) to release and hold harmless the PWSA from any and all claims, causes of action, damages or losses, of any nature, whatsoever with respect to the work performed by PWSA or its contractors.⁵ July 2019 Policy at 3.
3. Homeowners will then be asked to cooperate with PWSA's timeline for replacement and allow workers access to the service line. July 2019 Policy at 3.
4. PWSA will restore roadways and public sidewalks, backfill any trenches excavated as part of the replacement process and will fill and seal any wall or floor penetrations in the private home. No other restoration will be conducted for the private side replacement. PWSA will not replace any landscaping, interior finishes, paving, seeding, or walkways. All restoration costs shall be borne by the homeowner. July 2019 Policy at 4.

I. Ad hoc replacements initiated by property owners after January 1, 2019: “Ad hoc replacements” refer to when a property owner elects on their own initiative to arrange for the replacement of a private side LSL when PWSA is not then-currently replacing the public side of the line. PWSA developed this program in the context of PWSA's implementation in April 2019 of its new orthophosphate water treatment plan in accordance with DEP requirements, which PWSA expects will reduce lead levels to below the lead action level under the Lead and Copper Rule. PWSA M.B. at 60; PWSA St. C-1RJ at 3, 17-18.

1. If the private LSL is connected to a public LSL, PWSA proposes to replace the public side portion of the LSL when a customer elects to replace the

⁵ A limitation of liability provision in connection with the PWSA's tort liability for any work it performs to replace the customer-owned service line in accordance with the PWSA's plan must be filed for the Commission's approval in the PWSA's tariff. See 52 Pa. Code § 69.87 (state case law permits tariff provisions to limit the liability of utilities to specified dollar amounts for injury or damages as a result of negligence or intentional torts); see also *In re: Tariff Provisions That Limit the Liability of Utilities for Injury or Damage as a Result of Negligence or Intentional Torts*, Pa. PUC v. PECO Energy Company, M-00960882, R-00943065, Pa. PUC LEXIS 111 (Declaratory Order entered March 17, 1997); see also *DeFrancesco v. Western Pennsylvania Water Co.*, 478 A.2d 1295, 1307 (Pa. Super. 1984) (holding a tariff provision limiting the company's liability was exculpatory and void as against public policy because it completely negated the water company's liability for its acts of negligence or intentional tort); see also *State Farm Fire and Casualty Co. v. PECO Energy Company*, 54 A.2d 921, 926-927 (Pa. Super. 2012) (holding that the tariff provision limiting liability to \$500 was valid and enforceable because the Commission had determined the reasonableness of the tariff and because the provision limited liability rather than negating liability altogether). As clarification, any approved limitation of liability provision for tort liability would not extend to any separate service claim raised in a complaint filed with the Commission against the PWSA under 66 Pa. C.S. § 701.

- private side. This proposal eliminates a partial line replacement.
2. PWSA proposes to reimburse the customer for all or a portion of the cost of the private side replacement based on the customer's income. The proposed income-based reimbursement of the cost to replace private LSL is tiered as follows:⁶
 - a. Full cost reimbursement for households with income levels below 300 percent of the federal poverty level (FPL),⁷ as adjusted annually;
 - b. 75 percent of the cost for households with income levels between 301 and 400 percent of the federal poverty level, as adjusted annually;
 - c. 50 percent of the cost for households with income level between 401 and 500 percent of FPL, as adjusted annually;
 - d. For all other households. a \$1,000 stipend towards the replacement cost of private side LSL replacement. July 2019 Policy at 4.
 3. PWSA is not taking responsibility for replacement of private LSLs when it is not replacing the public side of the service line. A customer would be responsible to determine if they have a private side LSL at their home. UNITED St. C-2SUPP-R at 3. In these circumstances, the customer is required to hire a private contractor, and PWSA will reimburse the customer for the lead line replacement expenses based on the customer's income level. PWSA St. C-1RJ at 9.
 4. PWSA is willing to directly pay the contractor rather than to require the customer to first fund it and wait for reimbursement from PWSA. PWSA St. C-1RJ at 11 (articulating PWSA's desire to do this and that it was exploring the option at the time of submitting rejoinder testimony); *see also* PWSA M.B. at 63.
 5. PWSA estimates that it would incur administrative costs of \$1,000 for each ad hoc replacement. OCA St. 2R-Supp at 5 (citing UNITED-XII-15 Attach. A, note 3). PWSA estimates that the average cost of direct construction work to replace a private side LSL by a customer's private contractor is about 75% of the direct construction cost that PWSA averages (\$5,500).

⁶ The PWSA estimates that approximately 53.3% of households will qualify for full reimbursement, 12.1% will qualify for 75% reimbursement, 9% will qualify for a 50% reimbursement. PWSA St. C-1SD at 31.

⁷ The FPL is a sliding scale that is updated each year by the U.S. Department of Health and Human Services. The scale is based on the number of people living in the household. Each additional person in the household increases the FPL by \$4,420. OCA St. 2R-Supp at 4.

July 2019 Policy at 2. PWSA is budgeting for 8,000 to 20,000 replacements through this program. PWSA St. No. C-1RJ at 6, 9-10.

J. Partial replacements performed by PWSA after January 1, 2019:

1. “Partial lead service line replacement” means the replacement of a public-side service line made of any material without the simultaneous replacement of a connected private-side LSL. Partial Settlement at ¶ III.OO.6.
2. PWSA will complete the replacement of a public-side LSL without simultaneously completing the replacement of the private-side LSL in the following circumstances:
 - i. If PWSA determines, in its sole discretion, that replacement of the portion of the LSL owned by the property owner at a particular residence or related interior plumbing modification is not technically feasible, the residence is unsafe from a structural or sanitary condition, or will result in excess expense, due to conditions, such as length, terrain, obstructions, structures, pavements, trees, or other utilities, PWSA may exclude such residence and not replace private side of the LSL; (Partial Settlement at ¶ III.VV.1.b.i; July 2019 Policy at 2, ¶ 3.3)
 - ii. PWSA is replacing a public-side service line through the small-diameter water main replacement program or is moving a residential service line from an abandoned water main to a different water main, and PWSA is unable to obtain consent to replace the private-side LSL from the property owner after making at least one attempt to contact the property owner by mail, one attempt by telephone, and one attempt by visiting the residence in person; (Partial Settlement at ¶ III.VV.1.b.ii)
 - iii. A property owner who also resides at the property signs a formal agreement stating that they do not consent to a free private-side LSL replacement and that they understand the risks of a partial replacement; or (Partial Settlement at ¶ III.VV.1.b.iii)
 - iv. PWSA is replacing a public-side service line as a result of an emergency circumstance (e.g., water main leak, broken curb stop, or damage to other infrastructure requiring a public-side service line replacement), and PWSA is unable to obtain consent to replace the private-side LSL from the property owner after making at least one attempt to contact the property owner by telephone and one attempt by visiting the residence in person. (Partial Settlement at ¶ III.VV.1.b.iv.)

- v. In the event PWSA determines it will not complete the replacement of a private-side lead service line due to any of the circumstances described in the Partial Settlement at ¶ III.VV.1.b.i., PWSA will temporarily not replace the public-side service line until it has reported the factual circumstances to the CLRAC in accordance Partial Settlement at ¶ III.WW.4.b. After consulting with the CLRAC, PWSA should make a determination as to the appropriate next steps, including, but not limited to, potentially not replacing the public side of the line while corrosion control treatments and distribution of water filters remain in place or potentially receiving Commission approval to make reasonable changes, substitutions and extensions in or to service and facilities as may be necessary or proper for the accommodation and safety of patrons with extraordinary circumstances or potentially receiving Commission approval of tariff provisions quantifying specific limits on PWSA's financial responsibility for a private-side lead service line replacement in extraordinary circumstances.⁸
- vi. In the event PWSA does not complete the replacement of a private-side lead service line due to any of the circumstances described in the Partial Settlement at ¶ III.VV.1.b.ii-iv., PWSA will not permit the re-connection of the private-side lead service line to the newly installed public-side service line in accordance with PWSA's tariff at Section B, Rules 1 and 4. PWSA will begin the process to terminate service to the residence with prior notice in accordance with PWSA'S tariff at Section C, Rule 3.j. Reconnection of service shall not be permitted until the customer certifies the removal of the private-side lead service line in accordance with PWSA's tariff at Section B, Rule 4.⁹
3. PWSA will provide residents who receive partial LSL replacements with information regarding the risks of lead exposure from partial LSL replacements. Partial Settlement at ¶ III.TT.3.a.

K. Post-Replacement Measures:

⁸ The Commission's March 26, 2020 Final Order unilaterally added this subsection to the Partial Settlement On April 10, 2020, PWSA filed a Petition for Reconsideration, Clarification and/or Amendment of the Commission's March 26, 2020 Final Order and requested modifications to this subsection. As the Petition for Reconsideration, Clarification and/or Amendment is pending before the Commission, this subsection is held in abeyance.

⁹ The Commission's March 26, 2020 Final Order unilaterally added this subsection to the Partial Settlement On April 10, 2020, PWSA filed a Petition for Reconsideration, Clarification and/or Amendment of the Commission's March 26, 2020 Final Order and requested modifications to this subsection. As the Petition for Reconsideration, Clarification and/or Amendment is pending before the Commission, this subsection is held in abeyance.

1. ***Post-replacement notices and instructions:*** Following a LSL replacement, full or partial, PWSA does the following steps:
 - a. Leaves an informational door hanger at the residence. The door hanger informs the resident of the work done, instructs them how to flush their pipes and taps, and directs them to collect a post-replacement water sample after allowing the water to sit unused for 6 to 8 hours.
 - b. Provides the household with a tap water sample kit.
 - c. If a partial LSL was performed, and the resident fails to return the sample, PWSA will provide another door hanger reminder about one month after the date of replacement.
 - d. PWSA provides an additional free test to a customer when their previous post-replacement tap water sample reveals lead levels above 15 ppb.
 - e. If a post-replacement sample shows water lead levels above 50 ppb, PWSA will deliver to the residence at least one case of bottled water per day until PWSA completes a meter drop and flush at the residence. Residents who receive a meter drop and flush will remain eligible for additional filter cartridges and other assistance as described above in ¶¶ III.TT.1 and III.TT.3. Partial Settlement at ¶ III.UU.1.

2. ***Post-replacement water filter distribution program:***
 - a. PWSA presently offers an NSF-certified pitcher (not tap) filter and three replacement cartridges to customers free of charge after a partial or full LSL replacement. PWSA St. C-1 at 62-63.

 - b. PWSA will continue to provide, at no charge, a tap water lead testing kit, water filter NSF-certified to remove lead, and six months of filter cartridges to a residence whenever PWSA performs a LSL replacement. Partial Settlement at ¶ III.TT.3.
 - i. PWSA will provide residents who receive partial lead service line replacements with information regarding the risks of lead exposure from partial lead service line replacements. Partial Settlement at ¶ III.TT.3.a.

 - ii. If a resident's post-replacement tap water lead test reveals lead levels above ten (10) parts per billion, PWSA will provide to the resident an additional testing kit, at no charge, and instructions to return a follow-up test result three months after the initial test. Partial Settlement at ¶ III.TT.3.b.

- iii. If the three-month follow-up test result shows lead levels above ten (10) parts per billion, PWSA will assist the resident in determining why lead levels remain elevated. Partial Settlement at ¶ III.TT.3.c.

L. Interior Plumbing Inspections:

1. Whenever PWSA replaces a residential water meter, PWSA will inspect the interior plumbing adjacent to the water meter and inform residents in writing of the materials observed. If the interior plumbing is composed of galvanized steel or iron, PWSA will inform customers of the risks of lead release from such plumbing. Partial Settlement at ¶ III.RR.1.
2. Whenever PWSA performs a private-side lead service line replacement without a simultaneous meter replacement, PWSA will make good faith efforts to document the material making up the interior plumbing adjacent to the private-side lead service line and inform residents in writing of the materials observed. If the interior plumbing is composed of galvanized steel or iron, PWSA will inform customers of the risks of lead release from such plumbing. Partial Settlement at ¶ III.RR.2.

M. Meter Replacements and Processes Related to Potential LSLs:

1. Starting September 1, 2019 and ending three months thereafter, PWSA will provide, at no charge, a tap water lead testing kit, whenever PWSA replaces a water meter at a residence that has a private-side lead or galvanized service line or lead-bearing or galvanized interior plumbing adjacent to the water meter. Partial Settlement at ¶¶ III.SS.1 and III.TT.1.
2. Starting September 1, 2019, PWSA will conduct a three-month study to determine the potential impact of replacing a water meter at locations with a lead service line or adjacent lead-bearing or galvanized interior plumbing. Partial Settlement at ¶ III.SS.2.
3. By January 31, 2020, PWSA will present CLRAC with the results of the samples received pursuant to Section III.SS.1 to demonstrate potential impacts, for CLRAC's information and to solicit feedback. Partial Settlement at ¶ III.SS.3.
 - a. If more than ten percent of the results received exceed ten parts per billion of lead, PWSA will provide a water filter NSF-certified to remove lead, six months of filter cartridges, and written information

on how to request a free tap water lead testing kit whenever PWSA replaces a water meter at a residence that has a private-side lead or galvanized service line or lead-bearing or galvanized interior plumbing adjacent to the water meter. Partial Settlement at ¶ III.SS.3.a.

- b. PWSA will start providing the water filters NSF-certified to remove lead and the filter cartridges as soon as PWSA has evaluated the results of the study and determined that more than ten percent of the results received exceed ten parts per billion of lead. Partial Settlement at ¶ III.SS.3.b.
4. PWSA will ensure that a new meter installed at any residence is “lead free,” as defined at 42 U.S.C. § 300g-6(d). Partial Settlement at ¶ III.SS.4.

N. Tap Water Testing, Filter Distribution and Bottled Water (not in connection with PWSA’s completion of a LSL replacement):

1. PWSA will provide, at no charge, a tap water lead testing kit to any resident within its service area who requests one. Partial Settlement at III.TT.1. PWSA will also provide, at no charge, a tap water lead testing kit to any resident within its service area who receives a meter replacement pursuant to Section III.SS.1 of the Partial Settlement. Partial Settlement at ¶ III.TT.1.
 - a. If such testing reveals lead levels above ten (10) parts per billion, PWSA will provide to the resident, at no charge, a water filter NSF-certified to remove lead, six months of filter cartridges, and an additional tap water lead testing kit with instructions to return a follow-up test result three months after the initial test.
 - b. So long as the resident continues to return testing kits, PWSA will continue to provide additional testing kits at three-month intervals and additional filter cartridges at six-month intervals until the resident’s lead levels fall below ten parts per billion.
 - c. PWSA will include information on this filter distribution policy in all materials publicizing the availability of tap water lead testing kits.
2. PWSA will offer, at no charge, a NSF-certified water filter to remove lead and six months of filter cartridges to any customer enrolled for PWSA’s Customer Assistance Programs and any tenant that would be eligible for PWSA’s Customer Assistance Programs if they were a customer, when PWSA’s records (including predictions from the machine-learning model

described above in Inventory) indicate that the customer's or tenant's residence has a public-side or private-side service line made of lead or unknown material. This term will remain in effect until PWSA's Lead and Copper Rule sampling results fall below the lead action level during two consecutive six-month monitoring periods. Partial Settlement at ¶ III.TT.2.

“Customer Assistance Programs” means PWSA's Bill Discount Program, Hardship Fund program, Winter Shut Off Moratorium, Community Environmental Project, and any future programs created by PWSA to assist customers in paying for water service or securing access to safe drinking water. Partial Settlement at ¶ III.OO.9.

3. If a residence's tap water lead test reveals lead concentrations above 50 parts per billion, PWSA will deliver to the residence at least one case of bottled water per day until PWSA completes a meter drop and flush at the residence. Residents who receive a meter drop and flush will remain eligible for additional filter cartridges and other assistance as described above in Sections ¶¶ III.TT.1 and III.TT.3. Partial Settlement at ¶ III.UU.1.

O. Community Lead Response Advisory Committee (CLRAC):

1. “CLRAC” means the Community Lead Response Advisory Committee established pursuant to pages 9-13 of PWSA's Joint Petition for Partial Settlement, and as approved by Final Order of the Commission entered on February 7, 2019 in PWSA's first jurisdictional base rate case docketed at R-2018-3002645 *et al.* Partial Settlement at ¶ III.OO.13.
2. The term of the CLRAC is extended through December 31, 2026, unless active CLRAC members vote unanimously to terminate the CLRAC at an earlier date. Partial Settlement at ¶ III.WW.1.
3. Notwithstanding ¶ III.WW.1, PWSA may terminate the CLRAC after January 1, 2022, if there are just and reasonable circumstances for its termination, including insufficient participation and/or engagement in the CLRAC. Termination of the CLRAC will be effective 120 days after notice is provided by PWSA to CLRAC members. Partial Settlement at ¶ III.WW.2.
4. If a CLRAC member is no longer willing or able to continue to participate in the CLRAC, another representative of the departing member's organization may fill the departing member's position on the CLRAC. If no other representative of the departing member's organization is willing or able to fill the departing member's position, PWSA or any member of the CLRAC,

including the departing member, can nominate a candidate to fill the departing member's position. At least one active committee member must be a public health expert. Candidates must be approved by two-thirds of current CLRAC members. Partial Settlement at ¶ III.WW.3

5. PWSA will consult with the CLRAC regarding its lead remediation efforts on at least a quarterly basis. PWSA's consultation will include, but not be limited to:
 - a. Prioritization of residences for lead service line replacements based on children's blood lead levels, the prevalence of children under six years of age and women of child-bearing age, income, lead service line density, or any combination of factors recommended by the CLRAC, as part of:
 - i. Small-diameter water main replacements performed after January 1, 2021, including designation of Priority Lead Neighborhoods, as described above at ¶ III.VV.2.a; and
 - ii. The neighborhood-based lead service line replacement program, as described above at ¶ III.VV.3.
(Partial Settlement at ¶ III.WW.4.a.i-ii)
 - b. An update every six months on the number of instances in which PWSA has been unable to replace a private-side lead service line because of the conditions set forth in ¶ III.VV.1.b. (Partial Settlement at ¶ III.WW.4.b)
 - c. An analysis of the costs incurred by customers seeking reimbursements for private-side lead service line replacements under Paragraph 3.2 of PWSA Exh. RAW/C-46 (PWSA Lead Service Line Replacement Policy Approved July 26, 2019), for CLRAC's information and to solicit feedback; (Partial Settlement at ¶ III.WW.4.c)
 - d. A quarterly update on PWSA's efforts to secure additional funding for lead service line replacements as described above at Section III.VV.1.c.; (Partial Settlement at ¶ III.WW.4.d)
 - e. Implementation of PWSA's water filter policies, including methods for reducing residents' burdens to obtain filters under the filter programs described above at ¶¶ III.SS and III.TT; (Partial Settlement at ¶ III.WW.4.e)

- f. Improving outreach efforts and exploring other methods for obtaining customer consent for private-side lead service line replacements conducted as part of the small-diameter water main replacement program, neighborhood-based lead service line replacement program, in response to a main or service line leak or break, or through the Community Environmental Project. PWSA will continue to report quarterly to the CLRAC, for its information and to solicit feedback, on the number of property owners who refuse to consent to private-side lead service line replacements, the reasons for their refusal, and PWSA's follow-up efforts to obtain consent; (Partial Settlement at ¶ III.WW.4.f)
- g. PWSA's efforts to increase customer participation in its pre- and post-lead service line replacement and post-meter replacement tap water lead testing programs; (Partial Settlement at ¶ III.WW.4.g)
- h. Public display of the machine-learning model's predictions of the locations of private- and public-side lead service lines and PWSA's plans for completing its inventory, as described above at Section III.QQ.1; (Partial Settlement at ¶ III.WW.4.h)
- i. PWSA's plan for replacing all known remaining lead service lines, as described above at ¶ III.QQ.2; (Partial Settlement at ¶ III.WW.4.i)
- j. PWSA's estimate of the number of private-side lead service lines located in its service area, as described above at ¶ III.QQ.2; and (Partial Settlement at ¶ III.WW.4.j)
- k. The results of the information determined in ¶¶ III.QQ.2 and III.QQ.3 above. (Partial Settlement at ¶ III.WW.4.k)

P. Corrosion Control:

1. PWSA will provide the Commission, the Parties, and the CLRAC with quarterly updates regarding the progress of PWSA's orthophosphate program, when PWSA started testing for lead levels, and the results of the lead level testing. Partial Settlement at ¶ III.XX.1.
2. PWSA's obligation to provide the quarterly updates set forth in this paragraph will cease when it is no longer required to provide quarterly updates on its orthophosphate program to the Pennsylvania Department of Environmental Protection. Partial Settlement at ¶ III.XX.2.

Q. Cost Tracking Relating to LSL Replacement Costs

1. PWSA will separately identify all projected lead service line replacement costs and details on its cost projections in its rate filings. Partial Settlement at ¶ III.YY.1.
2. PWSA will continue to provide information regarding actual replacement costs as part of its quarterly report provided to the parties pursuant to the Rate Case Partial Settlement Par. A.2.c. (Docket Number R-2018-3002645) that includes quarterly and cumulative year-to-date data. This reporting requirement will continue through the term of the lead service line replacement program. Partial Settlement at ¶ III.YY.2.

Actual replacement costs will be evaluated in future base rate proceedings and shared with the CLRAC. Partial Settlement at ¶ III.YY.2.

3. When PWSA adopts the Uniform System of Accounts, it will show projected and actual lead service line replacement costs as a sub account; PWSA will determine whether it would be appropriate to include in a sub account of Account 333. Partial Settlement at ¶ III.YY.3.

Exhibit BK-5

Supplement No. X
Tariff Water - Pa. P.U.C. No. 1

THE PITTSBURGH WATER AND SEWER AUTHORITY

RATES, RULES AND REGULATIONS GOVERNING

THE PROVISION OF WATER SERVICE

TO THE PUBLIC IN THE TERRITORY DESCRIBED HEREIN

Issued: XXXXX

Effective:

XXXXX

BY: Robert A. Weimar, P.E., BCEE, Executive Director
1200 Penn Avenue, Pittsburgh, PA 15222
Tel: 412-255-8800

NOTICE

Filed in compliance with the Order of the Pennsylvania Public
Utility Commission entered XXXXX at Docket No. XXXXX.

Supplement No. X
Tariff Water - Pa. P.U.C. No. 1
XXXXX Revised Page No. 2
Canceling XXXXX Page No. 2

LIST OF CHANGES

LEAD SERVICE LINE REMEDIATION (PAGE NOS. 63-69)

Describing PWSA's Lead Infrastructure Plan in Part VI: Lead Service Line Remediation.

Issued: XXXXX

Effective:

XXXXX

Supplement No. X
Tariff Water - Pa. P.U.C. No. 1
XXXXX Page No. 63
Canceling XXXXX Page No. 63

PART VI: LEAD SERVICE LINE REMEDIATION

1. Definitions: For purposes of Part VI (Lead Service Line Remediation), the following definitions apply:
- a. **CLRAC**: The Community Lead Response Advisory Committee established pursuant to PWSA's first jurisdictional base rate case docketed at R-2018-3002645 *et al.*
 - b. **Customer Lead Service Line**: A Lead Service Line extending from the Curb Stop to a point of consumption.
 - c. **Lead Service Line**: Any service line made of lead, galvanized iron, or galvanized steel.
 - d. **Partial Lead Service Line Replacement**: The replacement of a Customer Lead Service Line made of any material without the simultaneous replacement of a connected Public Lead Service Line.
 - e. **Public Lead Service Line**: A Lead Service Line from the distribution facilities of the Authority which connects to the customer service line at the hypothetical or actual line or the actual property line, including the control valve and valve box.
 - f. **Residence**: A residential property with no more than four (4) dwelling units or a dual use property (commercial & residential) with service lines 1-inch in diameter or less, for which the PWSA has maintenance responsibility for the water service line from the water main to and including the curb stop. The term also includes a single-family residence that is served by a lead service line greater than 1-inch diameter.

2. Lead Infrastructure Plan:

- a. Notwithstanding Part III, Section B.1 of this Tariff, the Authority will replace Customer Lead Service Lines pursuant to its Lead Infrastructure Plan (as approved at Docket Nos. M-2018-2640802 and M-2018-2640803 and set forth in Appendix C to the Authority's 5-Year Long-Term Infrastructure Improvement Plan), subject to an expenditure cap of \$11.0 million per year. The Authority may modify its annual expenditure cap for Customer Lead Service Line replacements with Commission approval. The costs incurred by the Authority to undertake remediation efforts pursuant to its Lead Infrastructure Plan shall be recoverable in rate proceedings.
- b. PWSA's Lead Infrastructure Plan is in effect until December 31, 2026, and applies to any Lead Service Line (1) serving any Residence; (2) of which PWSA is aware; (3) the replacement of which is operationally feasible; and (4) in the case of a private-side line, the Property Owner authorizes the replacement or replaces the line in accordance with PWSA policy.
- c. PWSA's Lead Infrastructure Plan and the provisions in Part VI, Section 4, subsections b. and c. of this Tariff, are subject to review and revision based on the Commission's decision regarding petitions for reconsideration, clarification and/or amendment filed in the Authority's compliance plan proceeding at Docket Nos. M-2018-2640802 and M-2018-2640803.

3. Replacement of Customer Lead Service Lines:

- a. Customers who received a partial Public Lead Service Line replacement after February 1, 2016 due to a PWSA action, such as, for example, a lead service line replacement contract, PWSA operation replacement or water main replacement, will be eligible to have their Customer Lead Service Line replaced by PWSA, at no direct cost to the customer.

- b. For customers who elected to replace their Customer Lead Service Line as a result of a PWSA Public Lead Service Line replacement between February 1, 2016 and December 31, 2018, PWSA will offer a direct reimbursement for costs incurred up to a maximum of \$5,500.
- c. For ad hoc replacements initiated by customers between February 1, 2016 and December 31, 2018, PWSA will not offer reimbursement. An "ad hoc replacement" refers to when a Property Owner elects on their own initiative to arrange for the replacement of a Customer Lead Service Line when PWSA is not then-currently replacing the public side of the line.
- d. For ad hoc replacements initiated by Property Owners after January 1, 2019, if the Customer Lead Service Line is connected to a Public Lead Service Line, PWSA will replace the Public Lead Service Line when a customer elects to replace the Customer Lead Service Line. For ad hoc replacements after January 1, 2019, PWSA will reimburse the customer for all or a portion of the cost of the Customer Lead Service Line replacement based on the customer's income. The proposed income-based reimbursement of the cost to replace Customer Lead Service Lines is tiered as follows:
1. Full cost reimbursement for households with income levels below 300 percent of the federal poverty level (FPL),⁷ as adjusted annually;
 2. 75 percent of the cost for households with income levels between 301 and 400 percent of the federal poverty level, as adjusted annually;
 3. 50 percent of the cost for households with income level between 401 and 500 percent of FPL, as adjusted annually;
 4. For all other households, a \$1,000 stipend towards the replacement cost of Customer Lead Service Line replacement.

- e. After January 1, 2019, PWSA will offer to replace Customer Lead Service Lines at no direct cost to the Property Owner: (i) at any Residence where PWSA replaces an Authority Service Line connected to a Customer Lead Service Line; and (ii) at any residence with a private-side only Lead Service Line located within a work order area of a neighborhood-based Lead Service Line replacement program where Lead Service Line replacements are performed after completion of the 2019 Lead Service Line Replacement program which is currently scheduled to be completed by September 2020.
 - f. Through the Community Environmental Project required under a Consent Order and Agreement with the Pennsylvania Department of Environmental Protection, PWSA will offer to replace the Customer Lead Service Lines of low-income customers (defined as households with income levels below 300 percent of the federal poverty level, as adjusted annually) at a program budget of \$1.8 million. Customer Lead Service Line replacements performed under the Community Environmental Project will be identified by customer requests and vetted through a third-party administrator. The Community Environmental Project will conclude on February 14, 2021.
 - g. PWSA will replace a Customer Lead Service Line when PWSA's operations crew replaces an Authority Service Line, regardless of material, as a result of line breaks or leaks, including unplanned emergency replacements.
4. Partial Lead Service Line Replacements After January 1, 2019:
- a. PWSA will complete the replacement of a Public Lead Service Line without simultaneously completing the replacement of the Customer Lead Service Line in the following circumstances:
 - i. If PWSA determines, in its sole discretion, that replacement of a Customer Lead Service Line at a particular Residence or related interior plumbing modification is not technically feasible, the

- ii. Residence is unsafe from a structural or sanitary condition, or will result in excess expense, due to conditions, such as length, terrain, obstructions, structures, pavements, trees, or other utilities, PWSA may exclude such Residence and not replace the Customer Lead Service Line;
 - iii. PWSA is replacing an Authority Service Line through the small-diameter water main replacement program or is moving a residential service line from an abandoned water main to a different water main, and PWSA is unable to obtain consent to replace the Customer Lead Service Line from the Property Owner after making at least one attempt to contact the Property Owner by mail, one attempt by telephone, and one attempt by visiting the residence in person;
 - iv. Property Owner who also resides at the property signs a formal agreement stating that they do not consent to a free Customer Lead Service Line replacement and that they understand the risks of a partial replacement; or
 - v. PWSA is replacing an Authority Service Line as a result of an emergency circumstance (e.g., water main leak, broken curb stop, or damage to other infrastructure requiring a public-side service line replacement), and PWSA is unable to obtain consent to replace the Customer Lead Service Line from the Property Owner after making at least one attempt to contact the Property Owner by telephone and one attempt by visiting the Residence in person.
- b. **Reserved for Future Use.** [This subsection will be updated to reflect the language to be added to Paragraph III.VV.1.b.v. of the Partial Settlement in the Authority's compliance plan proceeding at Docket Nos. M-2018-2640802 and M-2018-2640803 upon a determination regarding petitions for reconsideration, clarification and/or amendment filed in the proceeding.]

- c. **Reserved for Future Use.** [This subsection will be updated to reflect the language to be added to Paragraph III.VV.1.b.vi. of the Partial Settlement in the Authority's compliance plan proceeding at Docket Nos. M-2018-2640802 and M-2018-2640803 upon a determination regarding petitions for reconsideration, clarification and/or amendment filed in the proceeding.]
5. Customer Agreement: The Authority shall enter into an agreement with a Property Owner for replacement of a Customer Lead Service Line that allows PWSA employees and contractors to gain access to their private property in order to replace their Customer Lead Service Line prior to the initiation of any work by the Authority to replace the Customer Lead Service Line. The agreement shall be in a form provided by the Authority and shall include provisions that require the Property Owner(s) to release and hold harmless the Authority from any and all claims, causes of action, damages or losses, of any nature, whatsoever with respect to the work performed by PWSA or its contractors.
6. Limitation of Liability: The Authority's liability relating to Lead Service Line remediation efforts is limited as set forth in Part III, Section I of this Tariff.
7. Warranty on Workmanship: The Authority will provide, at a minimum, a 30-day warranty on workmanship and materials for a Customer Lead Service Line it replaces.
8. Restoration: PWSA will restore roadways and public sidewalks, backfill any trenches excavated as part of the replacement process and will fill and seal any wall or floor penetrations in the private home. No other restoration will be conducted for Customer Lead Service Line replacements. PWSA will not replace any landscaping, interior finishes, paving, seeding, or walkways. All restoration costs shall be borne by the Property Owner.

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9. Ownership and Responsibility for Replacement Line: After a Customer Lead Service Line is replaced by the Authority, the Customer shall own the Customer Service Line and shall have full responsibility for the repair, replacement and maintenance of the new Customer Service Line.

10. Post-Replacement Measures: The Authority will implement post-Customer Lead Service Line replacement measures, including distribution of water filters and filter cartridges, in accordance with its Lead Infrastructure Plan.