

PROJECT NARRATIVE

A. Cover Page

Project Title: The Philadelphia Water Department Lead Service Line Replacement for Disadvantaged Communities in South Philadelphia

Funding Opportunity: EPA-OW-OGWDW-24-03

National Priority Area One: Reduction of Lead Exposure in the Nation's Drinking Water Systems through Full Lead Service Line Replacements and Treatment Improvements

Name of Applicant: Philadelphia Water Department (PWD)

Address:

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Total Project Cost:

Federal funds requested: \$6,600,000

Voluntary non-federal cost-share: \$ 1,250,000

Total project cost: \$7,850,000

B. Executive Summary

The Philadelphia Water Department (PWD) is seeking funding via the USEPA WIIN: Reducing Lead in Drinking Water to implement its South Philadelphia Lead Service Line Replacement (LSLR) Project. This application is for NPA-1: Reduction of Lead Exposure in the Nation's Drinking Water Systems through Full Lead Service Line Replacements and Treatment Improvements.

1.1 Description of Project

Since 1991, PWD has been testing for lead levels in drinking water and sharing the information with the public to encourage LSLRs. PWD's October 16, 2024, Service Line Inventory (SLI) identified 15,461 known lead and galvanized requiring replacement (GRR) service lines in the City. Approximately 75%, or 11,575, of the service lines are located within CEJST areas. Current estimates to replace the City's known lead services range from \$232 million to \$382 million. This cost is daunting for any utility dealing with aging infrastructure needs, emerging contaminants, climate resiliency challenges, and workforce needs. Similarly, the average cost for an LSLR is between \$7,000 to \$10,000 inclusive of design and notification requirements and is viewed as unaffordable for many customers, especially those living in disadvantaged communities.

With the requested funds, PWD will implement the proposed project in an area that is 100% disadvantaged as defined by CEJST. These funds will allow PWD to fully replace approximately 1,100 known lead and GRR service lines for residents who would otherwise not be able to cover the costs themselves. PWD will replace all privately owned portions of the lead service lines (LSLs) and GRR service lines at no cost to the property owner for this project.

1.2 Environmental Outputs and Outcomes

The anticipated outputs and outcomes of this project all align with the USEPA Strategic Plan. The anticipated environmental outputs from this project include the following:

- A decrease of approximately 1,100 LSL and GRR service lines in the City of Philadelphia's drinking water system
- An increase of about 1,100 customers and 2,519 residents (see A-000) having tap sampling for lead concentrations between 3 and 6-months following LSLR as a risk mitigation best practice
- An increase of more than 2,600 customers and 5,954 residents (see A-000) with information about lead in drinking water achieved through outreach and public education
- An increase in participation in the South Philadelphia LSLR Project of approximately 1,100 customers in CEJST disadvantaged communities
- PWD will further refine the drinking water system SLI for South Philadelphia

The anticipated environmental outcomes from this project include the following:

- An overall reduction of measured lead concentration in drinking water through implementation of approximately 1,100 LSLRs
- An overall increase in public awareness through outreach to more than 2,600 customers in CEJST census tracts of the health effects of lead in drinking water and the efforts toward reducing lead in drinking water

C. Workplan

2.1 National Priority Area One

The Philadelphia Water Department (PWD) is seeking grant funding through the U.S. Environmental Protection Agency (USEPA) Water Infrastructure Improvements for the Nation (WIIN): Reducing Lead in Drinking Water to implement the South Philadelphia Lead Service Line Replacement Project (LSLR Project). This grant application is being applied solely toward National Priority Area One (NPA-1): Reduction of Lead Exposure in the Nation's Drinking Water Systems through Full Lead Service Line Replacements and Treatment Improvements.

2.1.1 Approach

With the requested funds from this opportunity, PWD proposes to implement a dedicated LSLR project for South Philadelphia residents in the economically distressed and disadvantaged areas as defined by the Justice 40 Climate and Economic Justice Screening Tool (CEJST). These funds will allow PWD to fully replace approximately 1,100 known LSL and GRR service lines with new copper lines. The LSLRs for this project are located in 18 CEJST census tracts that are situated within portions of zip codes 19145, 19146, 19147, and 19148 (see Figure 1 or A-001).

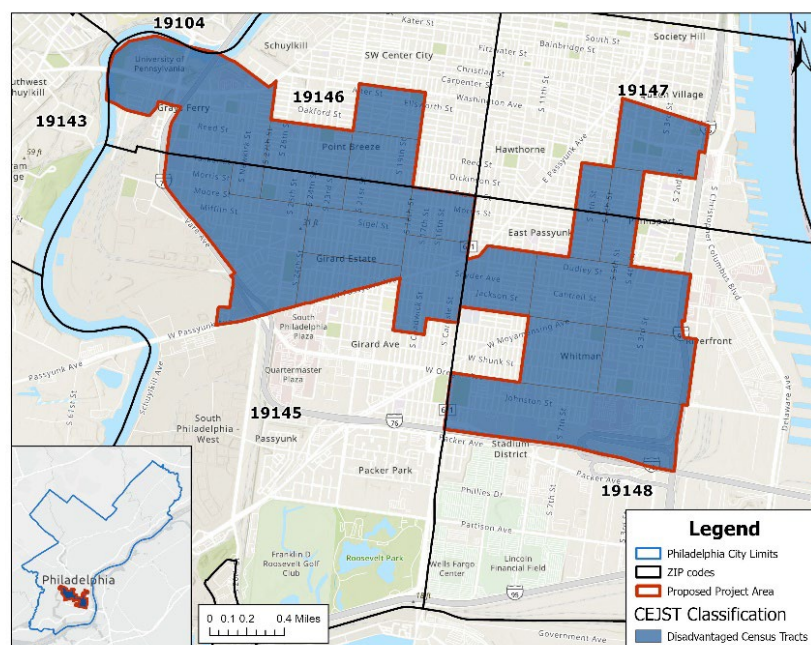


Figure 1. Proposed Project Area (red boundary) within 18 CEJST Disadvantaged Census Tracts

A direct outcome of this project will be the extensive community engagement and education to inform the South Philadelphia community about the health risks of lead and options for replacement. In Philadelphia, the property owner owns the water service line from the point of connection to the main; therefore, PWD needs the property owner's permission to replace lead service lines. PWD will provide outreach and education to more than 2,600 disadvantaged property owners about the project and provide them with the opportunity to sign up for LSLR. The LSLRs will be tailored to meet each property's specific circumstances, replacing everything

that is lead, or is galvanized downstream of lead, and there will be no partial LSLRs through this project.

This project is part of the larger PWD LSLR Program that is replacing lead and GRR service lines throughout the City of Philadelphia. In 2024, PWD received approval through a USEPA Drinking Water State Revolving Fund (SRF) grant/grant/principal forgiveness loan and low-interest loan to implement its first LSLR project for CEJST disadvantaged communities in North Philadelphia. PWD is in the process of applying for a second SRF to conduct LSLR for CEJST disadvantaged communities in West Philadelphia. These USEPA funds will help PWD increase participation in the PWD LSLR Program by approximately 1,100 customers in South Philadelphia. As public education and outreach engages more Philadelphians, it is expected that there will be more interest and increased participation in the PWD LSLR Program.

Through the replacement of LSL and GRR services in South Philadelphia, PWD will improve public health by reducing potential exposure to lead, particularly those in economically distressed areas. Since all the addresses in this project service area are located in CEJST census tracts, the likelihood of the known lead and GRR service lines being replaced by the resident on their own is very low. Households most at risk are often not able to pay for replacements. These same households can be negatively impacted by health problems, such as neurodevelopmental delays in children and heart disease, kidney disease, and high blood pressure in adults. Young children and pregnant women are especially susceptible to the impacts of cumulative lead exposure. The elimination of lead services and reduction of potential sources of lead in drinking water will decrease the lead risk in a vulnerable community where it would otherwise continue to exist. All aspects of USEPA's "Special Requirements for Lead Service Line Replacement Projects" are addressed in Sections 2.1.1 Approach and 2.1.3 Public Education, Public Outreach and Risk Mitigation. Thus, this project ensures full LSLR, ensures customer notifications compliant with LCRR/LCRI, documents provision of risk mitigation measures such as ANSI/NSF filters certified to remove lead to CCT optimization and State notification of any planned replacement of LSLR .documented. See Table 1. South Philadelphia Lead Service Line Replacement Project Outreach Timeline.

PWD's Historical and Current Approach to Lead Reduction

The original Lead and Copper Rule (LCR), established by the USEPA in 1991, requires water systems to implement corrosion control treatment (CCT) to minimize the levels of lead and copper in drinking water. This treatment helps to reduce the corrosion or chemical decomposition of pipes and plumbing fixtures, which can release lead and copper into the water supply. In drinking water, the primary source of lead is from pipes, which can present a risk to the health of children and adults.

For more than 25 years, PWD has added zinc orthophosphate during water treatment to form a protective coating on the inside of pipes to reduce the amount of lead that can dissolve from plumbing into water. According to PWD's website, the CCT program has been shown to be effective in keeping lead levels in 90% (see A-002) or more of the City's homes below the previous USEPA standard of 15 parts per billion (15 ppb). Since 1991, PWD has also tested for lead levels to comply with LCR. Going forward, PWD is committed to optimizing corrosion

control through scale analysis and will be conducting a pipe rig study starting in calendar year 2025.

PWD recognizes that different building plumbing systems and usage patterns can affect how well CCT works and that there is no safe level of lead exposure. Thus, long before the Lead and Copper Rule Revisions (LCRR) became effective on December 16, 2021, PWD began replacing lead lines in the system as a part of existing water-main replacement projects. For many years, PWD has also offered financial support to homeowners wanting to replace their LSL's through the Homeowner's Emergency Loan Program (HELP), which offers 0% interest loans for repairs to water service lines.

When the LCRR became effective on December 16, 2021, the revisions included new actions to better protect the public against the harmful effects of lead, including creating a SLI. All community water systems were required to create an inventory of their service lines (drinking water pipes connecting to the interior plumbing) by October 16, 2024. The intent of an SLI is to protect public health by identifying those service lines that contain, or might contain lead, or galvanized pipes are or ever were located downstream of lead services, and then to develop a plan to replace those lines. Additionally, large public water systems, like PWD, must make this inventory publicly accessible. PWD has already taken the following actions:

- Since June 1991, PWD has tested for lead levels in accordance with the USEPA LCR. Results are shared with the USEPA and the public via Water Quality Reports (see A-003)
- For more than 10 years, PWD's Homeowner's Emergency Loan Program (HELP) program has offered its customers zero percent interest loans for the replacement of lead pipes (see A-004).
- Since 2016, PWD has documented and replaced LSL's as part of its water main replacement program.
- PWD submitted the City of Philadelphia SLI to PA-DEP ahead of the October 16, 2024, deadline. Simultaneously, PWD publicized an accessible and [searchable Service Line Material Map](#) (see A-005). This map will also be shared with customers as a part of the annual Consumer Confidence Report (CCR) and annual updates.
- PWD offers free water quality tests for customers with concerns about lead or water quality and has been testing for lead in water at schools for decades. The test results for homes can be viewed in A-003.
- In 2024, PWD established an LSLR project for CEJST disadvantaged communities in three zip codes in North Philadelphia that is being funded by a USEPA Drinking Water SRF and administered by the Pennsylvania Infrastructure Investment Authority (PENNVEST). PWD is in the process of applying for a second SRF grant/loan to conduct LSLR in West Philadelphia in February 2025.
- From October 16 to November 15, 2024, PWD sent letters to all residents and owners informing them of their service line material along with a fact sheet providing the customer service contact and next steps if the service line was identified as lead, GRR, or unknown (see A-006 and A-007).

- PWD has conducted public education and outreach for decades through a variety of methods, including press releases, fact sheets, website, and direct mail/ email and surveys, to encourage customers to participate in sampling, LSLR, and other programs.

There is a tremendous funding gap that PWD must overcome to establish a dedicated LSLR program in compliance with LCRI. The existing data illustrate where PWD is between the Water Main Replacement Program and HELP program (less than 1,000 replacements). In Figure 2, the graph on the top right illustrates that PWD must look at roughly 2,000 to 2,500 replacements per year at approximately \$30 million to \$40 million per year to maintain compliance with LCRI.

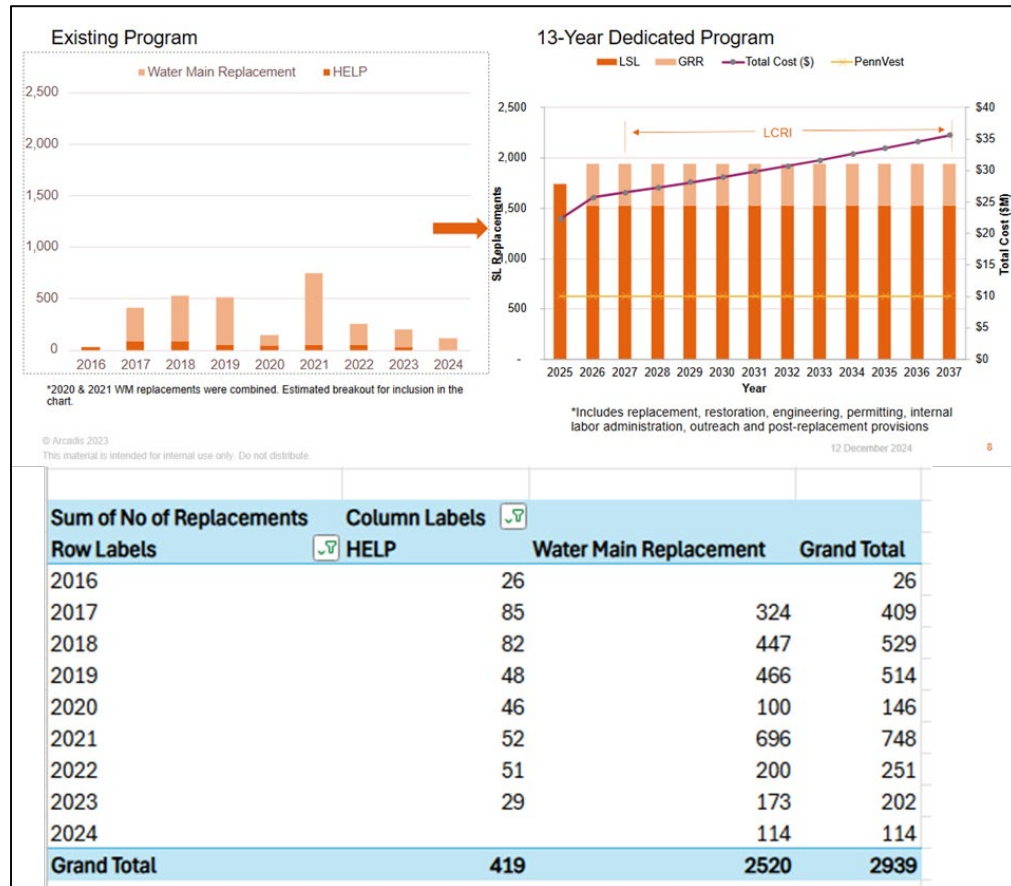


Figure 2. PWD Existing Replacement Program versus 13-Year Dedicated Program

The PWD's October 16, 2024, SLI identified 15,461 known lead and GRR service lines throughout the City. Approximately 75%, or 11,575, of Philadelphia's known service lead lines are located within CEJST-classified disadvantaged areas. The total estimated cost to replace the City's known lead services ranges from \$232 million to \$382 million dollars. This cost is daunting for any utility dealing with aging infrastructure needs, emerging contaminants, climate resiliency challenges, and workforce needs. Similarly, the average cost for a LSLR is \$7,000 to \$10,000 and is viewed as unaffordable for many customers, especially those living in disadvantaged communities (A-008). The logistical challenges of LSLR in disadvantaged communities are significant. The costs associated with replacing LSL's often falls on property owners and can be prohibitively high, resulting in a disproportionate exposure to lead among

those who cannot afford the replacement. Full LSLR programs, which are the best practice for eliminating lead contamination risk, still leave the question of cost to homeowners.

Coordination of consent to achieve consensus between the water utility and property owners for full replacement is a major challenge that requires targeted community engagement and clear communication to ensure that all parties understand the importance of the project and the benefits. Effective community engagement is necessary to build trust and to accelerate LSLR. Utility officials may need to tailor outreach strategies to directly address the needs of specific neighborhoods or demographic groups that have not always been well served by traditional utility outreach methods. The replacement process must be well-planned and executed efficiently to minimize disruptions to water services. This includes coordinating with other local utilities, contractors and community members.

As part of the proposed South Philadelphia LSLR Project, PWD will explore the use of existing trusted local community networks and community organizations to enhance community engagement around LSLR. Lessons learned from the North Philadelphia LSLR Pilot project will inform this proposed project. Participation in the PWD LSLR Program is currently voluntary for customers, so extensive public outreach is required to obtain property-owner authorizations for replacement. Funds from this grant will be used to cover the cost of replacements for customers.

PWD's Future Approach to LCRI: Address and Remove Barriers to Dedicated LSLR

On October 8, 2024, the USEPA released the final Lead and Copper Rule Improvements (LCRI; A-009), which shifted certain deliverables of LCRR and lowered the action level from 15 ppb to 10 ppb. Note that PA-DEP LCRI requirements have not been issued to date and may be stricter.

Key provisions in the final LCRI guiding PWD actions include the following:

- Locate all existing lead pipes
- Replace all LSL's within 10 years
- Strengthen tap sampling by collecting first-liter and fifth-liter samples at sites with an LSL and use the higher value to calculate the 90th percentile lead
- Reduce exposure at homes
- Communicate transparently and frequently with the public
- Continue to adjust treatment to reduce exposure to lead – PWD will continue to evaluate further optimization

Upcoming LCRI deadlines for PWD will include the following:

- Submit baseline SLI with connectors, addresses, and total numbers of lead and GRR full and partial replacements by November 1, 2027
- Submit a Lead Service Line Replacement Plan by November 1, 2027
- Submit a list of schools and childcare facilities by November 1, 2027

- Request in writing to be approved for a waiver of validation requirements for non-lead service lines by November 1, 2027
- Lowered Action level of 10 ppb goes into effect by November 1, 2027
- Submit a site sample plan by January 1, 2028
- Conduct semi-annual lead and copper sampling beginning January 1, 2028

2.1.2 Known Lead Issue

The SLI Process and Findings

Cities like Philadelphia were lobbied aggressively by the Lead Industries Association (see A-010) to utilize lead in customer service lines in the early 1900s. By 1916, there were more than 350,000 service pipes in use throughout Philadelphia and ordinances mandated the use of lead material for service pipes. Today, PWD estimates that 1 in 20 Philadelphia properties may have an LSL (see A-002). The PWD's October 24, 2024, SLI identified 15,461 known lead and GRR service lines. There is still, however, more than 400,000 services lines of unknown material throughout the City. Most of these services of unknown material are not anticipated to be lead, however, current estimates indicate that upwards of 20,000 to 25,000 of the service lines in the City could be an LSL.

In Philadelphia, the property owner owns the water service line from the point of connection to the main. Since the service line is not owned or maintained by PWD, the challenge has been accessing, identifying, and documenting service line material outside of leaks, repairs, breaks, and construction projects. This section briefly describes PWD's SLI data sources and strategy used to determine the composition of unknown service lines per the LCRR and PA-DEP guidance in preparation for the October 16, 2024, submittal deadline. The existing SLI includes service line information gathered from the following sources:

- Construction documents and plumbing permit records review
- Field observations as part of distribution system improvements projects (e.g., water main replacement projects, Advanced Metering Infrastructure (AMI) installations, leak repairs and meter replacements)
- Proactive service line investigations administered in the home by the Water Quality Department
- Targeted inspections conducted to test and train a predictive model
- Tap cards digitization and meter shop records review
- LCR Tap sample monitoring sites
- HELP loan records
- 400 in-home QA/QC service line investigations to validate data sources and refine service line material categorizations in the inventory.

To categorize a service line as non-lead, lead, GRR, or unknown, PWD is required by PA-DEP to identify material at three points – material between main and curb stop, material between curb stop and meter, and material at the meter. Acceptable methods of material verification listed by PA-DEP are summarized in A-011. PWD publicized an accessible and searchable SLI Map (see A-

005). This link will also be shared with all customers as a part of the annual Consumer Confidence Report (CCR) and annual updates.

The majority of homes in the Philadelphia area were built in the early 20th century, with lead and galvanized steel service lines permitted until the late 1970s (see A-010). According to A-003, water samples for lead analyses were obtained from 104 homes of the homes sampled, 3 had elevated levels of lead in their drinking water. These results were determined based on customer tap sampling conducted in 2022 as part of the 3-year testing cycle. Since PWD implemented CCT in 1992, PWD has not had a lead action exceedance level of 15 ppb or more in their water system. Full removal of all existing lead and galvanized steel service lines, however, remains a high priority and now a regulatory requirement that PWD is addressing through this project.

As described in Section 2.1.5, all 18 census tracts within the proposed project area are classified as disadvantaged under CEJST. These 18 census tracts all have a significant concentration of LSL's, emphasizing the need for targeted LSLRs in this area. Approximately 2,600 households have known lead or GRR service lines within the project area. Completing this project will help the City reduce approximately 1,100 lead and GRR service lines from the system. See A-012 for a complete list of proposed project addresses that are known to have lead and/or GRR service lines and that are all located within the CEJST census tracts.

Since the list of addresses in the proposed project are all in a CEJST disadvantaged census tracts, the likelihood of residents seeking LSLR are minimal despite the known health hazard the current service line poses. This grant would allow for the replacement to take place without the homeowner having to fund the work taking place, significantly lessening the burden on both the homeowner and/or ratepayers.

While PWD has its Homeowner Emergency Loan Program (HELP), which has been in operation since 2015, it is incumbent on the homeowner to finance the replacement line. Only 419 lines have been replaced through HELP over an 8-year timespan (2016 to 2023). This program would have to be significantly upsized to handle an estimated annual replacement rate of 2,000 to 2,500 known lines throughout the City. HELP's average annual rate is 52 lines. See A-004 for more information on how the HELP program works, a HELP fact sheet, the HELP application, and the number of LSLRs conducted through HELP.

PWD anticipates that there will be some residents who will not agree to have their line replaced through the proposed project. As PWD communicates more about LSLR and its importance, it is anticipated that more residents will request to be included in the proposed project and the PWD LSLR Program as a whole.

2.1.3 Public Education, Public Outreach, and Risk Mitigation

Equitable and inclusive public outreach, as well as precise communication about the risks of lead and mitigation measures, are fundamental to the success of the PWD LSLR Program. PWD has developed an outreach methodology based on best practices and will employ lessons learned from the pilot LSLR to this project area. Utility officials will tailor outreach strategies to directly address the needs of specific neighborhoods and demographic groups that have not

always been well served by traditional utility outreach methods. PWD will grow their experience in implementing dedicated LSLR in low-to-moderate income communities. In the months ahead of construction, a desktop analysis will be conducted to review properties needing LSLR's. It is recognized that the mix of single-family and multi-family housing may vary by neighborhood and this tool will be used to better inform the outreach methodology. Demographic and cultural information may be assimilated into the LSLR model for this project. Simultaneously, PWD will outreach to existing trusted networks of community influencers and organizations (see A-013 and A-014), to understand the conversations that already occur about lead in drinking water and where these conversations take place. This will help inform PWD's public involvement plan and communications strategy. In the early stages of dialogue with the community, PWD will attempt to define "the why" or communicate the higher-level purpose to build awareness of the project into the community's informal communications. As awareness of the project grows amongst the community, PWD will move to relationship building.

PWD will collaborate with community groups in the project area, including churches, schools, clinics, and civic organizations, that have strong relationships with the residents and the neighborhoods. PWD will work with these organizations to disseminate the LSLR information to their membership through meetings, email lists, social media, websites, and by word of mouth. PWD will work with the community groups to attend local events to encourage households to sign up for LSLR via the Right-of-Entry (ROE) forms. PWD will build upon an existing successful practice to meet the community at local events and festivals to exchange information. PWD will use its website to encourage the community to provide feedback on the proposed project to improve the project while increasing community trust. Feedback will be reviewed and incorporated into the outreach methodology. PWD has compiled a list of registered community organizations that may assist with outreach (see A-013 and A-014).

Outreach for the South Philadelphia LSLR Project will have five main goals:

- Raise awareness about the South Philadelphia LSLR Project
- Educate community members about the risks associated with lead pipes and how to mitigate these risks
- Assist eligible community members to sign and submit Right of Entry forms
- Follow-up after replacement to mitigate risk
- Provide post implementation monitoring

PWD will build an education program that communicates the risks of lead and fosters LSLR from its extensive communication materials. These materials include the publicly available SLI map (see A-005); PWD's City Wide Guide to Lead (see A-002); a public outreach packet communicating risks of lead pipes and how to mitigate including daily flushing tips, water testing, cleaning of aerators and use of a filter certified for lead reduction (see A-005); SLI material notification letters (see A-006); information on PWD's LSLR Program (see A-002); and the Drinking Water Quality Report (see A-003). PWD has developed a customer contact sequence to plan for timely communication (see A-015).

PWD is developing additional materials for this education program, including the following (see A-016 for draft examples):

- A customer intake form to collect contact information
- An ROE authorization form for households that are interested in participating in LSLR in English, Spanish, and other appropriate languages along with a customer letter describing the LSLR project and why customer participation is important

PWD will make at least four attempts via two different communication methods per household, as listed in Table 1. There will likely be more communication touchpoints to the approximately 2,600 eligible households in the project area. Each outreach attempt to customers will be tracked in a database. Direct household-level outreach may include the following:

- Mailing a packet of information on how to participate in the South Philadelphia LSLR Project with risk mitigation information pertaining to lead pipes. A call to action will include signing up to participate in the LSLR project by submittal of the ROE form
- Follow-up door hangers and/or postcards delivered to non-responsive households
- A second round of mailings, door hangers and/or postcards will occur with non-responsive households
- Possible door-to-door campaigns to ensure effective outreach
- Setting up a local LSLR office that is accessible to community members
- Information sharing on social and traditional forms of media with contact information (telephone number and website)
- Neighbors sharing information about the project

Table 2. South Philadelphia Lead Service Line Replacement Project Outreach Timeline

Outreach Timeline	Customer / Owner* Education Materials Provided	Who will Distribute?
First and second quarter of grant performance period	<ul style="list-style-type: none"> • State Notification of LSLR project • Notification of eligibility for South Philadelphia LSLR Project; link to public facing service line inventory map and guidance to customer to review • Customer Letter and fact sheet that includes risk information and mitigation instructions • Link to website and PWD phone number • Link to fill out Customer Intake Form and ROE online • Physical copy of Customer Intake Form and ROE form • Outreach to obtain signed ROEs and address customer concerns (4 attempts, 2 different communication methods at a minimum) • Notice of public meeting, webinar or Townhall to discuss the LSLR project 	PWD
45 days prior to LSLR	<ul style="list-style-type: none"> • Notify customer of LSLR work • Provide program packet and education materials to customers and property owner to identify risks and mitigation measures 	PWD

Day of LSLR	<ul style="list-style-type: none"> • Replace full service line (no partials left in system) • Provide post-LSLR education materials (e.g., elevated lead, risk mitigation) ** • Instructions on how to conduct high velocity flushing** • Provide point- of- use approved ANSI/NSF 53 certified filter and 6-month supply of replacement cartridges with instructions to customer ** • Sample request instructions for customer collection 	Construction Inspectors and PWD
Day after LSLR	<ul style="list-style-type: none"> • Reminder email/text/doorhanger to resident to conduct high velocity flushing • Customer conducts high velocity flushing with protocol provided by PWD immediately after and for at least one day after replacement • Update service line inventory as soon as possible 	PWD
One to Two Months after LSLR	<ul style="list-style-type: none"> • Reminder to customer on offer to perform lead tap sampling 3-6 months after replacement 	PWD
Three to Six Months after LSLR	<ul style="list-style-type: none"> • PWD offers to collect a follow-up tap sample • Customer performs lead tap sampling; PA-DEP requires 1st and 5th liter sampling • Notify customer of sampling results within 3 days of receipt of sampling result 	PWD and Customer

* Property owner can only sign and authorize LSLR in Philadelphia. Customers associated with the SL who are not owners must receive all educational materials.

** Provided before water is returned to service; customers associated with the SL who are not persons served at the SL (e.g., property owner) must be provided with educational materials and flushing instructions within 30 days following completion of replacement. Pitcher filter/point-of-use device certified by an American National Standards Institute (ANSI)/NSF accredited certifier to reduce lead.

Within 6 months of a change in property ownership, water systems must offer full LSLR to the new property owner. Within 1 year of any change in ownership of the property, the system must make a reasonable effort to obtain the property owner's consent.

Summary

- This grant will fund approximately 1,100 residential LSLRs, requiring the collection of approximately 1,100 ROE forms.
- Outreach efforts will inform all community members about the LSLR project, provide the necessary educational materials documenting the risks of lead in drinking water, and promote mitigation and participation in LSLR.
- Notification will include an explanation that the customer may experience a temporary increase of lead levels in their drinking water due to replacement and will provide contact information for the water system.
- Written information about a procedure for the consumer to flush service lines and premise plumbing of particulate lead following replacement.
- A pitcher filter or point-of-use device that is certified by an American National Standards Institute (ANSI) accredited certifier to reduce lead along with 6 months of replacement cartridges and instructions for use.

- For any service line replacement, notification and risk mitigation measures will occur before the affected line is returned to service. Additionally, PWD will offer to collect a follow-up tap sample between 3 and 6 months after the replacement to test for lead.
- The outreach methodology spans written, digital, verbal and direct in-person channels providing clear instruction for filling out and submitting forms.
- The community engagement strategy will be tailored to the audience in the project area and may include multiple touchpoints for effective communication and feedback.
- A streamlined approach will be developed to ensure that ROE forms are easily accessible, fillable, and submittable online, in-person, and by mail.
- A system will be established for promptly collecting and digitally storing ROE forms, with precautions in place to protect the private information of participants.
- All customer and owner communications will be documented and tracked per the requirements of LCRI.
- Risk mitigation measures and post implementation monitoring are addressed in Table 1.
- Examples of Risk Mitigation Measures and Documentation per PA-DEP (see A-017)
- All LSLRs will comply with applicable construction requirements (e.g., assuring adequate capacity and grounding) and will be conducted in accordance with AWWA Standard C810-17, Replace and Flushing of Lead Service Lines. PWD provides instructions for residents to flush their taps to remove particulate lead after an LSLR. Residents are instructed to remove all aerators from faucets and flush all taps simultaneously for 60-90 minutes. This flushing time requirement exceeds the ANSI/AWWA C810-17 and Water Research Foundation (WRF) guidelines of flushing all available taps for 30 minutes with the aerators removed, starting at the lowest level of the home and opening cold water taps of all faucets to the highest flow possible.
- At the end of the flush, faucets are turned off in the order they were turned on. The procedure also recommends cleaning each aerator before it is reattached to the faucet. These flushing instructions will be provided in the information packet provided to the resident immediately after the LSLR.
- In addition, PWD recommends customers flush their plumbing any time water has remained stagnant for an extended period. Specifically, if the water has been stagnant for more than 6 hours, residents are instructed to flush their cold water tap for a minimum of 5 minutes before drinking or cooking.

2.1.4 Maintenance

PWD will offer post-replacement tap sampling to the customer between 3 and 6 months after each replacement to confirm lead levels at the tap remain low. The customer can either call PWD or fill out the sampling request form to request a post-replacement sample. Sample bottles and instructions will be provided to customers. The sampling protocol will be in accordance with LCRI 141.86(b) and includes collection of the first and fifth liter following a minimum of 6 hours of stagnation. Internal dashboards at PWD will track sample bottle distribution and results via Lead Insights, an LCRI program management software. PWD will provide the results of the sample in accordance with LCRI 141.85(d) within 3 business days of the receipts. See Table 1 for more information.

Even when all the LSLs are replaced within the system, it may be important for PWD to maintain and optimize levels of CCT. To date, PWD has not experienced an exceedance of lead levels due to its proactive evaluations and optimization of corrosion control. PWD will continue these efforts in a 2025 pipe rig study and ongoing scale analysis of harvested lead pipe. The study will examine the effects of increasing the corrosion inhibitor chemical dose on harvested lead lines. Any steps to optimize CCT prior to removing all LSLs will be revisited following total removal of LSLs in the system. The goal is to maintain optimized CCT to protect against potential premise plumbing sources of lead that may remain (such as soldered connections behind walls or faucets parts). To maintain any lead level reductions, PWD requires that all materials used in the drinking water system comply with NSF 61 requirements and recommends residential plumbing meet the current definitions of lead-free set by NSF 372.

2.1.5 Public Health and Justice 40

Executive Order 14008, the Biden-Harris Administration initiated Justice40, directs 40% of certain federal investments to benefit disadvantaged communities. Disadvantaged communities have a heightened susceptibility to the adverse effects of natural hazards and disasters. Residents of disadvantaged communities are more at risk for exposure to lead sources, which can cause adverse health effects, including neurological, developmental, reproductive, and kidney issues. Since there is no safe level of lead exposure, mitigating lead exposure through removal of lead services, especially in disadvantaged areas, is crucial for promoting public health and community vitality. As part of the Justice40 initiative, the CEJST was developed to identify disadvantaged communities on a census tract level based on 36 burden indicators. A community is identified as being disadvantaged if it is in a census tract that is at or exceeds the threshold for a burden indicator.

The LSLRs for this project are located in 18 CEJST census tracts that are situated within portions of zip codes 19145, 19146, 19147, and 19148 in South Philadelphia (see Figure 1). Figure 3 shows the disadvantaged areas within Philadelphia, as determined by CEJST, and highlights the proposed project area in South Philadelphia with a red outline. Figure 3 also shows the locations of the 2,596 lead and GRR service lines within the 18 CEJST census tracts, showing the significant concentration of LSLs in the project area and emphasizing the need for targeted LSLRs in this area. A-001 includes larger versions of these CEJST maps.

Based on PWD's October 16, 2024, SLI, there are 15,461 known lead and GRR service lines requiring replacement within the City of Philadelphia. Of those, 11,575 are located in disadvantaged areas as determined by CEJST. The proposed project area consists of 2,596 services out of the 11,575 services located in CEJST areas (see A-001). The project will result in the removal of approximately 1,100 of 2,596 known lead and GRR service lines – a reduction of more than 42% in the project area. The estimated 1,100 service lines to be replaced also represent 9.5% of the 11,575 lead line services in the CEJST area. See A-012 for a complete list of addresses for the proposed project. All of these addresses are located within a CEJST disadvantaged census tracts.

Table 2 lists the CEJST census tracts within the proposed project area, the number of burden categories exceeded in each tract, and the specific burden categories exceeded. This highlights

that every tract in the project area has multiple burden categories exceeded. Therefore, the project area is an ideal beneficiary of LSLR, as it will significantly reduce lead exposure from drinking water in disadvantaged communities and promote public health.

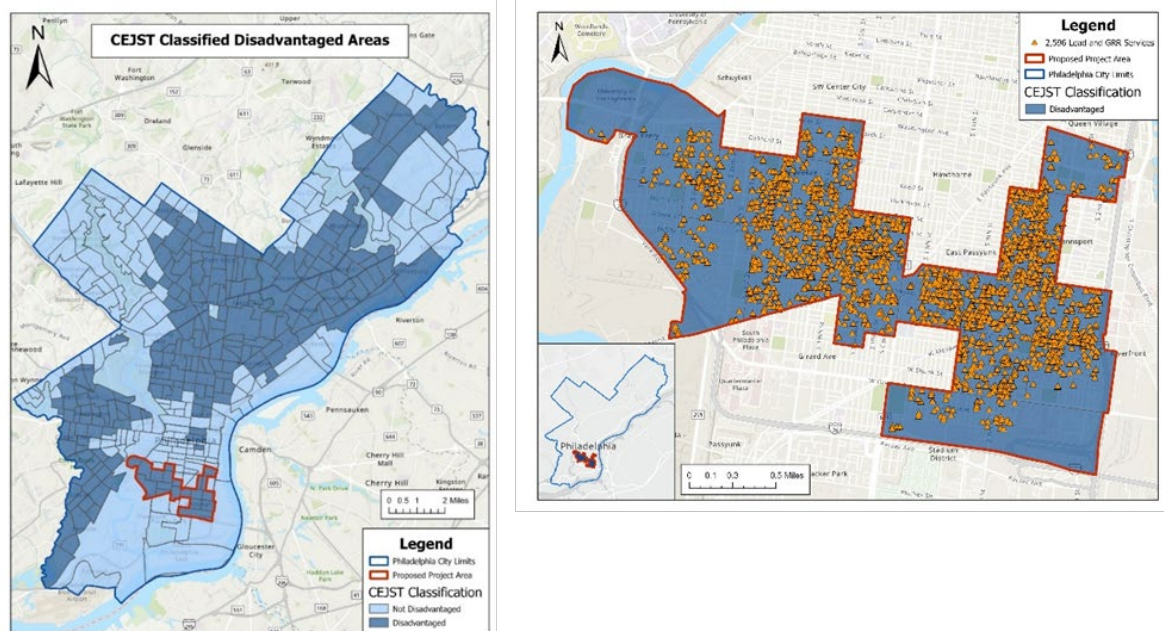


Figure 3. CEJST Classification of Disadvantaged Areas in Philadelphia (left). Proposed Project Area and Known LSL and GRR Locations (right). See A-001 – CEJST Maps for larger views.

Table 3. CEJST Category (Water and Wastewater (WW), Workforce Development (WD), Climate Change (CC), Energy (En), Transportation (T), Housing (Hou), Legacy Pollution (LP), and Health (H)) Threshold Exceedance Data for the Proposed Project Area

Census Tract	Number of Categories Exceeded	WW	WD	CC	En	T	Hou	LP	H
21	6	Yes	No	Yes	No	Yes	Yes	Yes	Yes
25	5	Yes	No	No	No	Yes	Yes	Yes	Yes
27.01	5	Yes	Yes	No	No	Yes	Yes	Yes	No
28.01	4	No	Yes	No	No	Yes	Yes	Yes	No
30.01	5	Yes	Yes	No	No	Yes	Yes	Yes	No
31	5	Yes	No	No	No	Yes	Yes	Yes	Yes
32	6	Yes	Yes	No	Yes	No	Yes	Yes	Yes
33	6	Yes	Yes	No	No	Yes	Yes	Yes	Yes
36	6	Yes	Yes	No	No	Yes	Yes	Yes	Yes
37.01	6	Yes	Yes	No	No	Yes	Yes	Yes	Yes
37.02	6	Yes	Yes	No	No	Yes	Yes	Yes	Yes
39.01	4	Yes	No	No	No	Yes	Yes	Yes	No
40.01	4	Yes	No	No	No	Yes	Yes	Yes	No
41.01	4	No	Yes	No	No	Yes	Yes	Yes	No
41.02	5	No	Yes	Yes	No	Yes	Yes	Yes	No
42.01	4	Yes	No	No	No	Yes	Yes	Yes	No

42.02	5	Yes	No	Yes	No	Yes	Yes	Yes	No
372	4	Yes	No	No	No	Yes	Yes	Yes	No

Affordability

PA-DEP's Drinking Water SRF Intended Use Plan utilizes the Ranking Framework for PENNVEST Drinking Water Projects to prioritize drinking water projects (see A-018). Within the ranking framework, there is an affordability criterion that is based on the general philosophy that the ultimate determinant of a community's ability to pay for a project hinges on the ability of the applicant's users to pay for the services they receive (e.g., the drinking water, wastewater, or stormwater services provided by a PENNVEST-funded project). They utilize specific demographic information, including median household income (MHI), percentage of the population over age 64, percentage of the population below the poverty level, the rate of population changes in the community between census data collection, and the Early Warning System measure of economic distress developed by the Pennsylvania Department of Community and Economic Development (PA-DCED) to determine what is affordable for the applicant's users.

The PA-DCED has identified Philadelphia as distressed (see A-019). According to the U.S. Census, while Philadelphia is the 6th largest city in the United States of the 20 largest cities in the nation, Philadelphia has the highest percent of its population living in poverty, the lowest MHI, and the lowest per capita income. Table 3 displays how the City of Philadelphia as a whole and the proposed project area compare with the nation regarding the key indicators of affordability. While portions of the project area have an MHI higher than that of the City of Philadelphia, it remains below the national MHI.

Table 4. Affordability Criteria Indicator Summary comparing U.S., City of Philadelphia, and Project Area

Summary of Social Vulnerability	United States	City of Philadelphia	Proposed Project Area
Total Population*	328,267,709	1,538,247	86,661
Person Below 150% of Federal Poverty Level*	67,521,723	499,261	24,266
Percent of Persons Below 150% of Federal Poverty Level*	20.6%	32.5%	28%
Median Household Income	\$77,719	\$60,302	\$72,500
Percentage of the population over age 64	17.7%	15.2%	12.6%
Rate of Population Change between 2010 – 2020	+7.4%	+5.1	+4.3%
Unemployment[§]	5.7%	8.7%	9.4%
Education**	10.7%	12.6%	15.1%

* ACS Population Living Below the Federal Poverty Level 5-year estimate

§ ACS Employment Status Variables 5-year estimate

**ACS Educational Attainment Variables 5-year estimate for Population 25 Years and Over whose Highest Education Completed is Less Than High School

For the past 3 years, PWD has been implementing rate increases to their customer's water bills. Table 4 displays the percent rate increase compared to the MHI.

Table 5. PWD Customer Water Bill Rate Increases Compared to Philadelphia Median Household Income

Year	Percent Rate Increase *	Median Household Income [§]
2022	6.5%	\$56,517
2023	7.9%	\$60,302
2024	12.3%	-

* Rate Increase documents listed in Appendix A-020

§ Citywide median household income data from Census [2022](#), [2023](#) data

Eleven out of the 18 census tracts within the project area have a lower MHI than the national MHI. A-020 displays the billing rates for 2022 to 2024. With customer's rates increasing, it is increasingly difficult for customers to afford their water bills let alone replace LSL's.

2.1.6 Lead Service Line Replacement Approach (if applicable)

This project will replace lead and GRR service lines. Only full LSLRs will be conducted to ensure that the service line has no lead remaining from the main to the meter. Where there is a confirmed or suspected LSL or GRR (determined by the SLI), PWD will notify the customer of the service line material and provide information that describes the LSLR project, how customers can participate, and information on the risk and mitigation strategies associated with lead exposure (see A-007). As part of the customer notification for this grant funded LSLR project, PWD will communicate that all the service lines will be replaced (the property owner owns the entire service line from main to curb and curb to meter) at no charge to the customer.

Before conducting any replacements, PWD will expend reasonable efforts (at least four attempts by a minimum of two methods) to procure ROE forms for legal and physical access to replace LSLs. These forms will also ensure that owners and customers are aware and approve of the replacement efforts. Forty-five days prior to the planned LSLR, PWD will notify the owner and residents of the upcoming work via letter (see A-021). This effort will be supported by the Public Outreach approach detailed in Section 2.1.3. The day of the LSLR, before the water is turned back on, all customers affected by the disturbance will be supplied with a point-of-use (POU) pitcher filter with the manufacturer's instructions and 6 months of replacement cartridges, certified by ANSI/NSF 53 (or equivalent), for lead removal. They will also receive instructions on flushing and sample water testing kits (see A-022). Table 1 displays the timeline of the distribution of these materials.

This South Philadelphia LSLR Project is part of the larger PWD LSLR Program that is replacing lead and GRR service lines throughout the City of Philadelphia. Experience and lessons learned from PWD's North Philadelphia LSLR pilot project will be incorporated into this project. PWD will coordinate this project with applicable City agencies, including Streets, Licensing and Inspections, and Philadelphia Gas Works (PGW). PWD coordinates its LSLR projects with its Capital Improvement Plan to maximize the number of LSLRs each year.

2.1.7 Monitoring

Monitoring is a vital aspect of the PWD LSLR Program, essential for achieving lower lead levels in drinking water and safeguarding public health. During the LSLR process, PWD maintains

decreased lead levels by utilizing CCT and tracking monitoring data into database tools to oversee replacements, sampling results, and ensure regulatory adherence (see A-023).

With LSLR, PWD maintains a structured approach that includes pre-replacement communication, during-replacement safety measures and risk mitigation measures, and post-replacement sampling. Pre-replacement notification begins with water testing. Notifications begin at least 45 days in advance, with four attempts using two communication methods to secure consent. If the testing is positive for lead, affected households are notified as soon as lead is identified and are provided educational materials about the PWD LSLR Program. During replacement, residents receive water filters with 6 months of cartridges and post-LSLR educational materials, including guidance on whole-house flushing during replacement. Post-replacement monitoring includes high velocity flushing the next day and lead sampling 3 to 6 months later. First- and fifth-liter sampling protocols assess lead levels in water and from service lines. Certified laboratories analyze the results, and customers are notified within 3 days.

2.1.8 Alternatives Analysis

PWD has evaluated a range of options for reducing lead concentrations in drinking water to ensure compliance with federal regulations and to protect public health. Historically, PWD has utilized zinc orthophosphate for corrosion control, which has been effective in reducing lead release from service lines and maintaining compliance with the USEPA LCR. However, regulatory changes introduced by the LCRI require a more comprehensive approach, requiring the full replacement of LSLs within a 13-year timeline.

Corrosion control remains a valuable tool for mitigating lead exposure but cannot eliminate risks entirely. Full LSLR is the only solution that fully addresses the regulatory requirements and ensures the complete removal of lead hazards from drinking water systems. This approach aligns with best practices and the latest federal requirements, offering long-term benefits for public health and promoting environmental justice.

2.2 Expeditious Project Readiness to Proceed

PWD is ready to initiate this project from Day 1 of award. PWD staff have proven experience in LSLR and, as Philadelphia residents, they have a vested interest in ensuring their drinking water is lead free and that their City is healthy and resilient. PWD has templates for customer outreach documents, and standardized specifications and contract documents are available from similar LSLR projects. All project planning, design, public outreach, and permits and approvals will be in place and ready to go upon award.

2.2.1 Past and Current Practices

PWD's Historical and Current Approach to Lead Reduction is discussed in more detail in Section 2.1.1 above. In summary, PWD has implemented robust and proactive practices to reduce lead exposure in drinking water, achieving consistent compliance with the regulatory standards. PWD integrates LSLR into broader water main replacement projects, ensuring systematic and efficient upgrades that reduce lead exposure risks for vulnerable populations. For more than 25 years, PWD has effectively utilized zinc orthophosphate treatment to create protective barriers inside pipes, preventing lead leaching and safeguarding public health.

Public engagement is a cornerstone of PWD's approach. PA-DEP has endorsed PWD's service line material notification letters, which provide actionable information to residents and serve as a model for best practices across the state. Additionally, PWD ensures sustained community awareness of its activities through regular updates on its website and communications with residents. These efforts have resulted in no action level exceedances for the 15 ppb lead action level, underscoring PWD's commitment to public health protection.

2.2.2 Project Planning and Design Phases (if relevant)

PWD has completed all necessary planning and design phases for the proposed project, ensuring project readiness upon grant award. For planning stages, PWD is developing a Lead Line Replacement Plan that includes prioritization of areas for LSLRs. For the design stage, PWD has developed templates for customer outreach documents, standardized specifications, and contract documents from similar LSLR projects that will allow PWD to release the project for public bidding soon after notification of funding award. As per City requirements, all construction contracts must be publicly and competitively bid. This approach promotes transparency and accountability in the procurement process while ensuring compliance with state and local regulations. The availability of standardized documents enables rapid project initiation and minimizes the potential for delays during the bidding and construction phases.

2.2.3 Permits and Approvals

The proposed activities do not require state or federal permits due to the nature of the work, which focuses on replacing existing infrastructure without triggering environmental permitting thresholds. By avoiding impacts, such as new infrastructure development or wetlands crossings, the project will benefit from a streamlined implementation process. PWD has significant experience in securing rights-of-entry or other authorizations for LSLRs from customers in past projects, including water main replacement projects.

PWD will adhere to the USEPA LCRI requirements by preparing and maintaining a Service Line Replacement Plan. This plan identifies legal requirements, water tariff provisions, and access constraints while ensuring compliance with state regulations through annual updates. Additionally, PWD will integrate detailed timelines and property access strategies into the plan, addressing potential barriers to SLR and minimizing delays during the project.

If required, PWD will notify the State of Pennsylvania regarding this proposed project and all LSLR projects. PWD will coordinate with other City agencies on other relevant infrastructure projects, including Streets, Licensing and Inspections, and Philadelphia Gas Works (PGW). In addition, PWD's LSLR Plan will be made public and may be submitted to PA-DEP.

2.2.4 Corrosion Control Treatment (if applicable)

CCT is not included in the scope of this project; therefore, no funding is requested for this purpose and this section is not applicable to this project. PWD, however, has implemented CCT since 1992 and, as a result, has not had a lead action exceedance level of 15 ppb or more in their water system since the CCT implementation. PWD will continue to implement its established Zinc Orthophosphate Treatment Program, which has consistently proven effective in preventing corrosion-related risks.

2.3 Environmental Results and Measuring Progress

PWD is committed to reducing lead exposure in drinking water by systematically replacing LSLs and GRRs and enhancing public outreach and engagement. Through this project, PWD aims to meet or exceed the required number of LSLRs while simultaneously implementing strategies to track progress and engage affected communities effectively.

2.3.1 Stated Objective/Link to USEPA's Strategic Plan

Philadelphia is one of the most economically distressed cities in the nation, with significant underserved and overburdened populations. The proposed project area in South Philadelphia is composed of 18 CEJST census tracts. The primary objective of this project is to reduce lead exposure in drinking water and provide reliable water infrastructure by fully replacing approximately 1,100 LSLs and GRRs while addressing affordability challenges for the CEJST disadvantaged populations in the project area. Public outreach, education, and engagement are additional objectives that are closely tied in with the success of this project. These efforts directly align with the USEPA's Strategic Plan Goal 5: Ensure Clean and Safe Water for All Communities and Objective 5.1: Ensure Safe Drinking Water and Reliable Water Infrastructure. In addition, the project directly aligns with the Justice40 Initiative by prioritizing investments in communities disproportionately affected by environmental and health challenges.

2.3.2 Anticipated Environmental Outputs

Anticipated environmental outputs from the proposed project include the following:

A decrease of approximately 1,100 LSL and GRR services in the City of Philadelphia's drinking water system: The primary output of this project is the full replacement of LSLs and GRRs in CEJST disadvantaged areas of the City of Philadelphia to improve infrastructure and ensure safe drinking water. Key metrics in measuring the success of this output will be the reduction of approximately 1,100 properties from the SLI.

An increase of approximately 1,100 customers and 2,519 residents (see A-000) having tap sampling for lead concentrations between 3 and 6-months following LSLR as a risk mitigation best practice: As LSLR is completed per property, PWD will return to each property between 3 and 6 months of LSLR to conduct tap sampling and ensure lead concentrations are mitigated. This sampling will ensure that the LSLR is successful and that the water is safe, and the new infrastructure is reliable. Measures of success for this output will include PWD tracking and compliance reporting and pre- and post-LSLR tap sampling results.

An increase of more than 2,600 customers and 5,954 residents (see A-000) with information about lead in drinking water achieved through outreach and public education: Public outreach and engagement are integral to achieving the project's objectives. PWD's ongoing efforts include distributing rights-of-entry or other authorization forms to affected households and conducting targeted outreach initiatives, such as mailings, door-to-door contact, and community meetings. Informing and involving the public in the LSLR helps build support for the program and increases citizen awareness of the impacts of lead in drinking water. Metrics associated with these activities include the number of households reached, the percentage of responses received, and the frequency of follow-ups for non-responsive households.

An increase in participation in the South Philadelphia LSLR Project by approximately 1,100 customers in CEJST disadvantaged communities: Successful public outreach and engagement will encourage reticent property owners to participate in LSLR, thus helping build support for the project and increasing safe drinking water and reliable infrastructure in the City. This increase will be measured by the participation in the project.

PWD will further refine the drinking water system SLI for South Philadelphia: An accurate and complete SLI is an essential tool in managing and implementing the PWD LSLR Program. PWD is refining its approach to monitoring LSLRs and related activities. All replacements will be recorded in the SLI, which connects to existing dashboards for tracking and compliance reporting. PWD has developed a comprehensive data management platform to streamline the tracking process further. Regardless of the method used, completed replacements will be accurately documented in the inventory to meet state and federal reporting requirements. In addition, to ensure transparency and accountability, PWD plans to integrate data from replacement activities, sampling results, and outreach metrics into existing dashboards and tracking systems. These tools provide a foundation for reporting progress, tracking drinking water and public health improvements, and ensuring alignment with the project's objectives, even as final tracking mechanisms continue to be refined. Measures of success for this output will be SLI records provided at regular intervals and at the end of the Period of Performance (POP), as determined by USEPA and PWD.

2.3.2 Projected Environmental Improvement (Outcomes)

Anticipated environmental outcomes from the proposed project include the following:

An overall reduction of measured lead concentration in drinking water through implementation of approximately 1,100 LSLRs: Through the implementation of approximately 1,100 full LSLRs, this project will increase the reliability of infrastructure and improve the safety of drinking water with the reduction of lead. The success of this outcome will be measured through pre- and post-water sampling.

An overall increase in public awareness through outreach to more than 2,600 customers in CEJST census tracts of the health effects of lead in drinking water and the efforts toward reducing lead in drinking water: The public awareness campaign to 2,600 customers and property owners will result in increased awareness of the impacts of lead in drinking water. Participation in the project is expected to increase support and participation in the overall PWD LSLR Program, thus improving public health. This increase will be measured in the amount of public education and outreach efforts conducted during the project's POP.

2.4 Milestone Schedule

PWD is ready to initiate the proposed project upon award. The project's estimated start date is August 1, 2025, and is expected to be completed by March 30, 2029. PWD plans to complete 30 to 75 LSLRs per month. The total POP is 44 months from time of award to the completion of construction and grant closeout, which is well within the 4-year, or 48 months, required by the NOFO's POP. Table 5 contains a breakdown of the project schedule.

Table 6. Project Schedule

Project Milestone	Estimated Start Date	Estimated End Date	Task Duration
Advertise for Bids	August 1, 2025	August 8, 2025	Minimum 30 days
Open Bids	September 10, 2025		1 day
Procurement, Project Award Notice to Proceed	September 10, 2025	February 9, 2026	5 months
Construction	February 9, 2026	December 11, 2028	35 months
Public Affairs	August 1, 2025	December 11, 2028	41 months
Grant Management	August 1, 2025	December 11, 2028	41 months
Grant Closeout	December 11, 2028	March 30, 2029	3 months

Descriptions of each task include the following:

- Advertise for Bids – PWD will advertise for contractors to perform the construction required for the LSLR, advertisement will be in accordance with the City of Philadelphia requirements for public bidding
- Open Bids – PWD will open bids no sooner than 30 days from the first advertisement for bids, bids received are posted to the City’s contracting webpage which is available for public viewing of the bids that have been received to ensure transparent contractor award.
- Procurement milestone shall include efforts for:
 - Contract Award – PWD will award the project to the lowest responsible bidder for the project.
 - Issue Notice to Proceed – PWD will issue a Notice to Proceed to the contractor authorizing them to start work on the contract.
- Construction – The contractor will work to install 1,100 lead and galvanized service line replacements with PWD providing contract oversight.
- Public Affairs – PWD will also be implementing public affairs tasks outlined in Section 2.1.3 throughout the project to optimize CEJST population participation in the program.
- Grant Management – PWD will be conducting grant management tasks upon award to completion of the project to ensure the project stays on track and within budget.
- Grant Closeout – Site visit by USEPA to ensure that the work has been completed (if necessary), final request for reimbursement, compilation of the grant closeout package, and submission to the USEPA for official closeout.

2.5 Detailed Budget Narrative

It is estimated that approximately 1,100 LSLs and GRRs will be replaced through this grant application. For estimating purposes, it is assumed that 550 services will be replaced from the main to the curb stop in addition to 1,100 services requiring replacement from the curb stop to the meter. Included in the estimate is the provision of pitcher filters and limited restoration for disturbed areas. Actual numbers of each type of replacement will vary based on the customers that sign authorization forms for LSLRs. Only contractual costs for LSLRs are requested to be funded through this grant application. Table 6 contains the grant request.

Table 7. Project Budget

Description	Unit of Measure	Quantity	Unit Price	Total
LSLR from Main to Curb	Each	550	\$4,000	\$2,200,000
LSLR Connection to Curb Stop (House Side)	Each	1,100	\$3,400	\$3,740,000
Meter Connection	Each	1,100	\$500	\$550,000
Pitcher Filters	Each	1,100	\$100	\$110,000
Estimated Construction Cost for LSLR				\$6,600,000
Personnel	--	--	\$753,600	\$753,600
Fringe Benefits	--	--	\$333,400	\$333,400
Indirect Charges	--	--	\$163,000	\$163,000
Estimated Soft Costs (Provided as Local Match)				\$1,250,000
Total Project Costs				\$7,850,000

2.6 Programmatic Capability/Experience

PWD maintains a complex infrastructure of more than 3,100 miles of water mains, 3,700 miles of sewers, 6 treatment facilities and 34 pumping stations as the supplier of safe drinking water, treated wastewater, and stormwater services to more than 1.58 million people within the City of Philadelphia. The City obtains 58% of its water from the Delaware River with the rest sourced from the Schuylkill River. The primary mission of PWD is to plan for, operate, and maintain both the infrastructure and the organization necessary to purvey high quality drinking water, to provide an adequate and reliable water supply for all household, commercial, and community needs, and to sustain and enhance the region's watersheds and quality of life by managing wastewater and stormwater effectively. Through this mission, PWD is a customer-focused utility, delivering services in a fair, equitable, and cost-effective manner, with a deep commitment to public involvement and engagement.

PWD has dedicated, knowledgeable, and tenured technical and managerial staff dedicated to the success of this project's implementation. PWD staff have extensive experience in implementing similar projects and have the capacity and capability to implement the LSLR project seamlessly. Lessons learned from similar past projects will be incorporated into the construction of this project.

2.6.1 Organizational Experience

This project will be managed by PWD with contractor support that will be competitively procured. The project will be publicly bid, and PWD, in conjunction with the City's Office of Economic Opportunity, will establish minimum percentage requirements for small, women-owned, and/or minority owned contractor participation in the construction effort.

The PWD inspector and/or contracted inspector services will oversee the installation and monitoring of the new water service lines. These inspectors will also be responsible for overseeing the project schedule to ensure the project remains on schedule and within budget. PWD has extensive experience with the management and implementation of LSLR projects, in particular direct experience with LSLR during water main construction. PWD has replaced residential LSL's from the main to the meter when encountering lead during water main

replacement project since 2017. To date, PWD has replaced more than 2,000 LSLs through this project. Experienced staff have already been lined up to begin work in Summer 2025, ensuring PWD will have the capacity to complete the project.

PWD Public Affairs will oversee public outreach associated with the project. Public Affairs will monitor and track project steps and communicate with community groups and citizens about the project's status and address any concerns or issues. Public Affairs will post project-related announcements to various communication outlets, including [Nextdoor](#), zip-based email campaigns, and registered community organizations. PWD will also post project stories on @PhillyH2OBlog – a PWD blog that provides the community with news, tips, and stories about PWD programs and their impact on the community.

PWD Finance will be responsible for grant management activities and will leverage extensive experience in managing federal grants to ensure all USEPA requirements are met, including the regular submission of requests for reimbursement and quarterly reports. PWD Finance has also procured contractor services for grant management support, which ensures sufficient capacity to handle the increase in grant management needs that would come with this project award.

2.6.2 Staff Expertise/Qualifications

PWD has been working for decades to protect Philadelphians from lead getting into water from plumbing. PWD has extensive experience and dedicated staff to effectively meet the goals and requirements of this grant. PWD maintains an overall staff of more than 2,300 full-time workers across 10 Divisions. Of those, there will be at any given time 10 to 12 PWD full-time equivalent staff who will be devoting some time to this project each month, including full-time site inspectors to approve all replaced lines and approve the work performed. There will be no sub-awards to consultants on this project. There may be sub-awards made by awarded construction contractors, depending on contractor personnel availability and overall workload. See A-024 for the proposed staff structure and biographical sketches for this project.

2.7 Past Performance

PWD has an active and growing grants management program. Since 2021, PWD has been awarded more than \$111 million in grant funding from a variety of federal and state agencies, including the U.S. Federal Emergency Management Agency (FEMA), the U.S. Office of Housing and Urban Development (HUD), the U.S. Department of Energy (DOE), the Pennsylvania Department of Community and Economic Development (PA-DCED), and the Pennsylvania Department of Environmental Protection (PA-DEP). In 2024, PWD obtained a USEPA SRF grant/loan of \$9.975 million for LSLR in North Philadelphia that is administered by PENNVEST.

In addition, since 2021, PWD has successfully worked with PENNVEST to obtain and manage loans for PWD projects, with \$530 million approved of which \$481 million is in construction. PENNVEST utilizes a variety of federal and state funding sources to provide financing for projects that increase Pennsylvania's water quality, including USEPA Clean Water and Drinking Water SRFs and the Bipartisan Infrastructure Law. With each grant, PWD works closing with the awarding agency (grantor) to meet their specific grant management, reporting, and project completion requirements. See A-025 for details about each awarded grant and current status.

2.7.1 Grant Management

Once a grant agreement has been conformed, PWD sets up a grant profile in the City's accounting system to initiate the grant management procedures and protocols that enable PWD to draw against the grant agreement. This profile assigns an individual index code, an individual grant code, and an individual grant detail code to ensure that PWD can track the grant throughout its lifecycle. In addition, before PWD can go to bid on a contract, an appropriation has to be put in place against that specific grant profile for the amount of the grant. PWD can go to bid by using its own capital and conducting an expenditure transfer, but the preferred method is to set up the grant profile and then use the funds against that for the encumbrance.

When the project is under construction, PWD typically assigns a Construction Engineer and Site Inspector to the project. The vendor will have specific reporting requirements to adhere to demonstrate progress and quality of service.

On a monthly basis, PWD checks on the status of each project. If the project has started, PWD checks to ensure that invoices have been issued and paid. Once paid, PWD goes into its accounting system, called FAMIS, and takes a screenshot of the payment detail. PWD sends the reimbursement package, which includes the invoice and the payment detail, to the grantor for reimbursement. To date, PWD and its grantors have had no issues with this process.

2.7.2 Reporting Requirements

Grant reporting requirements can vary from grant to grant. PWD works closely with the grantor to ensure all reporting requirements are met. Transparent communication and consistent coordination with the grantor are mainstays of PWD's grant reporting program.

2.7.3 Progress Reporting (Outputs and Outcomes)

It typically takes PWD 9 months from the time that a bid document is issued to when the contract is awarded, the contract is conformed and notice to proceed is issued. Typically, PWD prepares quarterly reports that are submitted to the grantor to report on project status and progress toward achieving project outputs and outcomes. Project delays can result from a number of causes, including delays in available funds for the City to encumber the contract, issues in conforming the contract (e.g., contract negotiations), and challenges in aligning multiple sources/partners for a project that are outside PWD's control. PWD has processes and procedures in place to address these and other project delays to ensure that the project gets back on track as quickly as possible. These procedures always include maintaining clear and consistent communications with the grantor to ensure transparency of the project's status.

2.8 Quality Assurance/Quality Control

PWD diligently complies with the requirements of the USEPA LCRI and LCRR, including the documentation of existing lead in the SLI. Operating under the principle that any presence of lead in service pipes warrants their replacement, PWD's data collection practices and an understanding of the health implications of lead exposure indicate that additional environmental data collection or Quality Assurance Quality Control (QAQC) processes may not be necessary. Nonetheless, PWD remains receptive to the possibility of additional monitoring and technical support from the USEPA, should it be recommended by grant administrators.