

DC Water's

LEAD SERVICE LINE

**Replacement
Plan**



June 2023



On behalf of the DC Water Board of Directors, the executive leadership team, and Team Blue, I am pleased to present our updated plan to remove all lead service lines in the District of Columbia by 2030.

DC Water's 2023 Lead Service Line Replacement Plan details the necessary actions from DC Water, customers, the District, and other stakeholders to accelerate replacement efforts. Since the 2019 launch of the Lead Free DC (LFDC) program, DC Water and our partners have been making significant strides to reduce the sources of lead in drinking water. As of May 2023, we replaced 4,287 lead service lines with copper pipes, using District funding to provide free and discounted replacement programs for customers. Customers have saved nearly \$7 million by taking advantage of these programs.

During the past four years, we have also improved the accuracy of the records of all service lines in the District. Knowing the locations of all lead service lines is the first step to ensuring they are replaced.

Another key to success is getting everyone who has a lead service line to participate in the replacement program. In May 2023, we announced the launch of the Community Activators Program, a workforce development training program in partnership with the District's Department of Employment Services (DOES) Division of State Initiatives. Over the next year, the program's 20 paid trainees from across the District will support the LFDC program by informing and educating customers about the program to increase homeowner participation.

DC Water is also pleased to announce the release of more user-friendly customer tools on the LFDC program website. Our improved Lead Map allows customers to enter their property address to find out if they have a lead service line. In addition, we have updated the Construction Dashboard, which allows customers to see if free replacements for their area are scheduled, in progress or complete. The dashboard will also help homeowners understand which free or discounted lead service line replacement program they are eligible for.

To demonstrate how LFDC will progress toward our mission in coming years, the 2023 Plan includes an updated cost estimate, the discussion of a potential legislative mandate requiring all District homeowners to replace their lead pipes, and an estimate of the additional funding required to avoid adding a financial burden on ratepayers. Acquiring this funding could mean free or discounted lead service line replacements for every resident.

Lead Free DC's vision is to equitably replace all lead service lines in the District to benefit present and future generations. We cannot do this without the cooperation of our community partners, contractors, legislators, and most importantly, our customers. While we work toward this goal, we want customers to experience superior service that advances the health and well-being of our diverse communities. We thank all our partners for making this vision a reality.

David L. Gadis

CEO and General Manager



INTRODUCTION

DC Water’s Lead Free DC program is designed to achieve an ambitious goal to remove all lead service lines equitably by 2030. Since 2019, we have learned more about where lead services are located across the District, how to efficiently complete a District-wide removal of lead service lines, and effective ways to communicate with customers about the replacement program. We have used these lessons to revise the 2021 Lead Service Line Replacement Plan to ensure we remove and replace every lead service line in the District by 2030.

Inside this plan, we describe how the results of recent field investigations and replacement work led us to reevaluate the accuracy of the original service line inventory. We have scrutinized all the data sources used to develop the initial inventory and classified all service lines in the District as verified lead service lines, suspected lead service lines, no information (service lines where there is not a record of the pipe material), suspected non-lead service lines, and verified non-lead service lines. This updated inventory classification system provides DC Water a higher level of confidence when estimating the remaining lead service lines in the District.

To conclusively determine if the suspected service lines are lead or non-lead, we are investigating and verifying the service line material at any home categorized as suspected lead, suspected non lead or having no information. Of the homes that we will investigate, we estimate that approximately 42,000 of those homes will need replacements. As we learn more in the field, we will update the inventory and share it with the public in real time on the Lead Free DC website.

While we estimate that we will need more replacements than we previously anticipated, we know it is our social responsibility to find every lead service line in the District and replace it. With your cooperation, we can still achieve a Lead Free DC by 2030. We have outlined an aggressive construction approach which will need the support of multiple funding sources. The construction approach is in alignment with the Biden-Harris Administration’s Justice40 Initiative and prioritizes lead replacements in areas that have vulnerable populations, a high number of lead service lines, and are historically underserved.

While we have secured some funding, acquiring additional sources of funding for this program is a major component of achieving our goal. This plan shares the current cost estimate for the program, explains what DC Water’s current funding level will cover, and explores additional funding opportunities to equitably replace the remaining lead service lines by 2030.

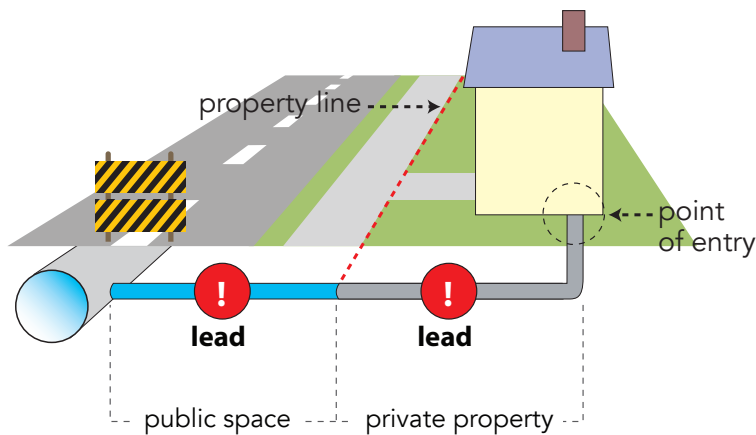
Through this plan, we also describe the legislative and outreach initiatives necessary to accomplish the lead service line replacement goal by 2030. Specifically, we support the approval of a legislative mandate requiring all District property owners to replace their lead service lines. We need the continued partnership of stakeholders including District Government agencies, the Federal Government, community members, property owners, and other interested stakeholders for our collective success in this program.

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SECTION 1: LEAD SERVICE LINE INVENTORY

A key step in meeting our goal of replacing all lead service lines by 2030 is to improve the accuracy of the service line inventory. This inventory includes the home address and pipe material for all service lines in the District. Knowing the locations of all lead service lines is the first step to ensuring they are replaced. Building a complete and accurate service line inventory is an ongoing and challenging task for many older cities. Often, this effort occurs at the same time as the service line replacement effort.



What is a water service line?

The water service line is the pipe that connects the public water supply, typically in the street, to a building. The service line has a designated “public” and “private” side. The property owner owns the service line; however, DC Water maintains the part of the service line in the public space.

1.1 History of DC Water’s Lead Service Line Material Inventory

The US Environmental Protection Agency (EPA) requires all water systems to submit a service line inventory. A service line inventory is a listing of every service line in the water system, including information on both public and privately owned portions of the service line. DC Water is continuously working to update the service line inventory. In the late 1980s, we initiated a study to find sources of lead in the District’s drinking water to comply with the U.S. EPA’s Lead and Copper Rule. The study evaluated DC Water’s existing service line data, plumbers’ records and practices, home build dates, and other information to find known and unknown locations of lead service lines.

One of the sources of information is historical “tap cards.” The valve between the service line and the water main is a “tap.” Beginning in the early 1900s, property developers and DC Water would document the tap location, and sometimes the pipe material, on a “tap card.” Tap cards, combined with other data, make up DC Water’s historic service line data.

In the early 2000s, DC Water established a practice to update the inventory using pipe material observations from service line construction projects. This practice provides a more accurate inventory because it includes a visual inspection of the underground pipe. While following this practice, some pipe material reports did not match the material in the inventory from historic tap cards. Reasons for inaccuracies could be undocumented service line replacements, past research estimates, incorrect material recorded on the tap card, such as cases where the meter setter pipe was recorded instead of the service line, and data entry errors.

1.2 The Road to a Complete and Accurate Service Line Inventory

Recognizing that there were some inaccuracies in the historical records, DC Water performed test pits at several locations during service line replacements from 2019 through 2022 to confirm some of the historical service line material data. A test pit, shown below, allows DC Water to have a visual confirmation of the service line material. Results of test pits revealed that some service line materials designated as “non-lead” in the service line inventory were found to be lead.

These field observations led us to reexamine the historic inventory and find more ways to improve its accuracy. In early 2023, we carefully reviewed the data sources used to make up the service line inventory and assessed our confidence in their accuracy. For example, we have a high level of confidence in data sources that include inspection data from field investigations (e.g., test pits), service line replacement or installation data, post-construction engineering drawings, building permits from the Department of Buildings (DOB), and customer-submitted photos of their water service line. We had lower confidence in the accuracy of records that did not have supporting data. Refer to Section 1.3 for additional details on the confidence level associated with the data sources used in the inventory.



Test pit excavation at a residential property in DC

What is a Test Pit?

A test pit is a hole that is dug above the service line. A test pit exposes the pipe in the public space and/or on private property. It provides visual confirmation of the size and material of the service line that is bringing water to a property.

1.3 Classifying Inventory Data

After examining the data sources, DC Water classified and updated the inventory based on the confidence level in the data source. All homes in the District were classified into the five categories shown in the table below.

Categories in the Updated Service Line Inventory

Category	Definition
Verified Lead	Service line is lead and we are confident in the data source.
Suspected Lead	Service line is lead but we are less confident in the data source.
No Information	DC Water's records have no information about the service line material.
Suspected Non-Lead	Service line is non lead but we are less confident in the data source.
Verified Non-Lead	Service line is non lead and we are confident in the data source.



1.3 Classifying Inventory Data continued

In the updated materials inventory, a service line is labeled as “lead” if the service line material listed as lead in either public space, private space or both. Previously, the inventory distinguished between the service line materials in the public space and private side of the property line. Customers can still find the service line material on their property by searching for their address on the LFDC Website. This information is available via a “pop-up” on the interactive Lead Map.

Reexamining the data sources in the inventory resulted in a higher number of estimated lead service lines, when compared to the count published in the June 2021 Lead Service Line Replacement Plan (June 2021 Plan). The table below provides a comparison of the June 2021 and May 2023 inventory analysis. The inventory will be continuously updated as more current and accurate information becomes available.

June 2021 Inventory Review				May 2023 Inventory Review				
Material Category	Count	Percent (%) Replace Expected	Estimated Replacements	Material Category	Count	# Test Pits	Percent (%) Replace Expected	Estimated Replacements
Lead	21,000	100%	21,000	Verified Lead	9,000	9,000	100%	9,000
				Suspected Lead *	12,000	12,000	100%	12,000
No Information	13,950	50%	6,975	No Information	13,950	13,950	50%	6,975
Non-Lead	93,234	0%	0	Suspected Non-Lead*	65,911	65,911	20%	13,182
				Verified Non-Lead	27,323	0	0%	-
Total	128,184		27,975	Total	128,184	100,861		41,157

*This is a new category developed in 2023 as a part of the service line inventory update.
Source: DC Water Service Line Inventory as of May 25, 2023.

Based on the service line inventory at the time, the June 2021 Plan included an estimated count of 27,975 lead service line replacements. This number assumed the need to replace service lines that were classified as “lead” and “no information” in the inventory database. At that time, DC Water estimated that about half of the service lines labeled as “no information,” or 6,975 service lines, would be lead after conducting test pits.

When compared to the June 2021 inventory estimate of 27,975 replacements, the total estimated lead service lines in the May 2023 inventory increases to 41,157. This estimate is based on the following assumptions:

- **Verified and Suspected Lead Service Lines:** The total number of “verified” and “suspected” lead service lines is equal to the “lead” material category in the June 2021 Plan count. DC Water will conduct test pits at the homes in these categories to verify the pipe material. We will also continue to search for records from trusted data sources to improve the accuracy of the “Suspected Lead” category.
- **Verified Non-Lead Service Lines:** DC Water has trusted back up documentation that shows the service line material is non-lead. Neither test pits, nor replacements are needed when both private and public are listed as a verified non-lead service line.

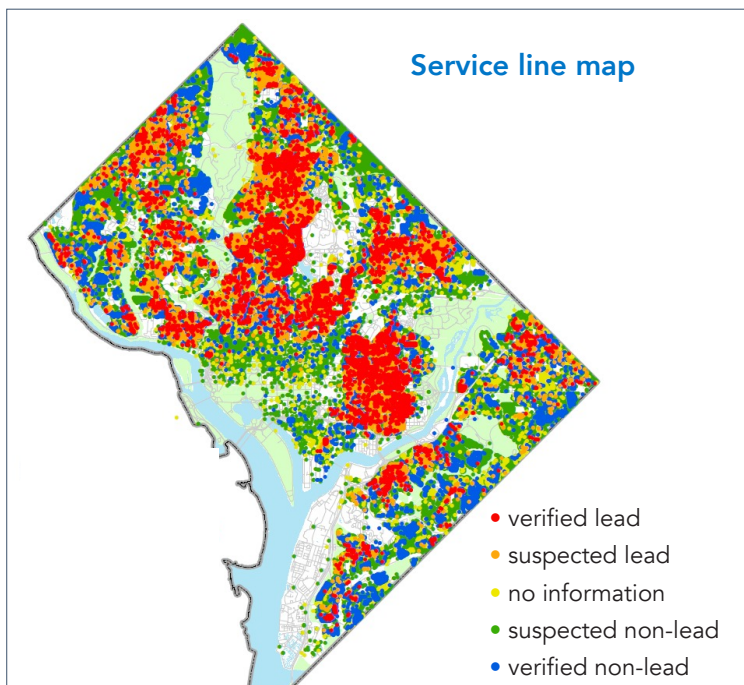
1.3 Classifying Inventory Data continued

- **Service Lines with No Information:** There are 13,950 service lines in the District with missing pipe material information in the inventory. To determine the pipe materials in this category, DC Water will conduct test pits at each of these homes. DC Water estimates that about 50 percent (%) of the service lines (6,975) in this category will be lead and will need replacement.
- **Suspected Non-Lead Service Lines:** DC Water will conduct test pits at homes in this category to verify the pipe material. We will also continue to search for records from trusted data sources to improve the accuracy of this category. We estimate our investigations will identify 20% of the number of “Suspected Non-lead” service lines will be lead. DC Water used a model to develop this 20% estimate. The inputs to the model include a list of the addresses with “Suspected non-lead” service lines, the associated data source (example: tap cards) and the assumptions about the level of confidence in the data. For example, if a home’s data source was from historic tap cards, it was assumed to have a lower level of confidence than test pit results. The model results indicated about 20% of the 65,911 (13,182) suspected non lead service lines could be lead. The model further indicated a 90% confidence level for this estimation.

The results of the modeling exercise are consistent with results from recent test pitting that DC Water conducted. In 2021 and 2022, alongside lead service line replacements, we used test pits to verify the service line material of homes listed as “copper” in the historic service line inventory. These test pits were done on District blocks where we expected to see a high number of lead service lines. Test pits revealed that 20% of homes listed as “copper” were lead. As such, DC Water estimates that 20% of service lines designated as “Suspected non-lead” will be lead service lines. We have included this number in our construction planning and cost estimate. We plan to verify the service line material of all suspected lead lines with test pits and will refine this number as more test pit results become available.

The addition of the category of “Suspected Non-Lead” lead service lines in the inventory accounts for the estimated 13,182 additional replacements needed to meet DC Water’s goal to replace all lead service lines. This additional category is the source of the increase from 27,975 in the 2021 Plan to 41,157 in the 2023 Plan.

1.4 New Lead Inventory Map



DC Water updated the service line map on the LFDC program website to reflect the changes in the service line inventory. Customers can search by their address to learn if DC Water has categorized their property as verified lead, suspected lead, suspected non-lead, verified non-lead or no information. The goal of the new map is to increase the awareness of our data confidence and bring more attention to homes with missing pipe material data.

Material Category	Count
Verified Lead	9,000
Suspected Lead	12,000
No Information	13,950
Suspected Non-Lead	65,911
Verified Non-Lead	27,323



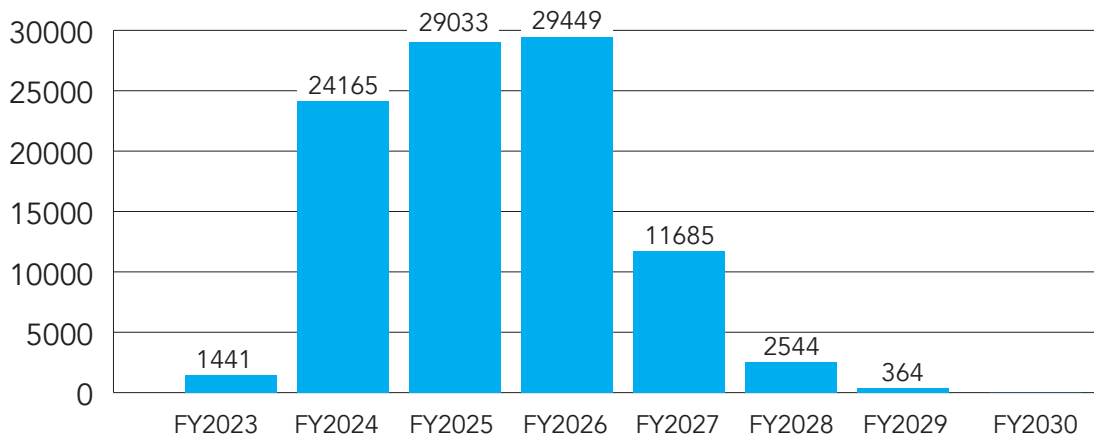
1.5 Identifying Pipe Material for Service Lines

As a commitment to the 2030 Goal, DC Water is publishing the service line inventory, and keeping it current with the most up to date service line material information. DC Water will be verifying service line materials in the field through a Test Pit Program. Simultaneously, we will continue to conduct desktop investigations for service line material data.

1.5.1 Test Pit Program

Over the duration of the program, DC Water will conduct test pits in the District at every location listed in the inventory that is not supported by verified documentation. The chart below shows the number of planned test pits estimated for each fiscal year through 2029 under the current construction plan. As verification from test pit results or other accurate documentation is received, the estimate of required replacements will be updated.

Timeline of Test Pit Program (by fiscal year)



1.5.2 Other forms of Material Identification

In addition to verifying the service line materials using test pits, DC Water continues to use other methods to identify service line materials, including homeowner-initiated inspections of the private property side of the water service line. Customers can see a part of the service line where it enters the home and connects to plumbing pipes, which is referred to as the point of entry (POE). Since 2017, DC Water has identified POE pipe material from 2,600 homes from photos taken during customer-initiated inspections.

DC Water is also collecting past maintenance, operation, and customer documentation that includes the installation date of the service line material. We are researching developer permit records for blocks with unknown service materials. Additional outreach to residential buildings and commercial buildings without service line material data is ongoing. We will continue to update service line materials and the construction plan as more information becomes available.

SECTION 2: LEAD SERVICE LINE REPLACEMENT PROGRAM

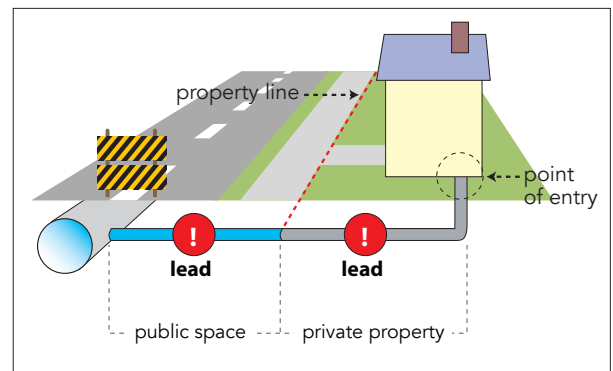
2.1 Lead Service Line Replacement Programs

DC Water has three programs to facilitate lead service line replacements. Every customer in the city with a lead service line is eligible to participate in one of these programs. The programs are either initiated by DC Water or the customer. Under a DC Water initiated program, we will contact the homeowner to let them know that their block is eligible for replacements. Customer initiated programs require customers to contact DC Water to schedule a replacement.

The Capital Improvement Project and Emergency Repair Replacement (CIPERR)

CIPERR is a free replacement program with three DC Water initiated options for lead service line replacement:

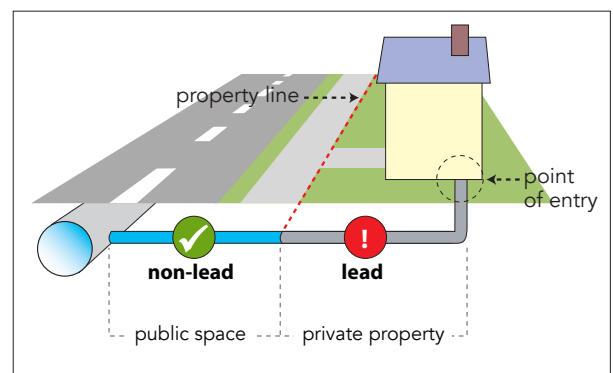
- **The Block-By-Block Program** targets the replacement of all lead service lines on a District street. DC Water's criteria for scheduling construction includes factors that prioritize public health, social equity, and vulnerable populations.
- **The Small Diameter Water Main Rehabilitation Program (SDWMR)** replaces all service lines on a street that is undergoing construction for a water main replacement. Each year, DC Water selects water mains for replacement according to their age and condition. The construction crew replaces lead service lines when replacing the water main.
- **The Emergency Repair Program (ERP)** will replace lead service lines when emergency repairs are necessary.



Service line materials for properties eligible for the Capital Improvement Project and Emergency Repair Replacement program.

The Lead Pipe Replacement Assistance Program (LPRAP)

The Lead Pipe Replacement Assistance Program (LPRAP) is a customer-initiated discount program for private-side only replacements. When customers have a lead service line on their property and not in the public space, they are eligible to receive financial support for their replacement. The LPRAP is co-administered by DC Water and the District of Columbia's Department of Energy and the Environment (DOEE). Starting in the Summer of 2023, all homeowners enrolled in LPRAP will receive a 100% discount for service line replacements on private property, due to funding recently obtained by the District and DC Water.



Service line materials for properties eligible for the Lead Pipe Replacement Assistance Program.

There are two types of assistance to reach the 100% discount:

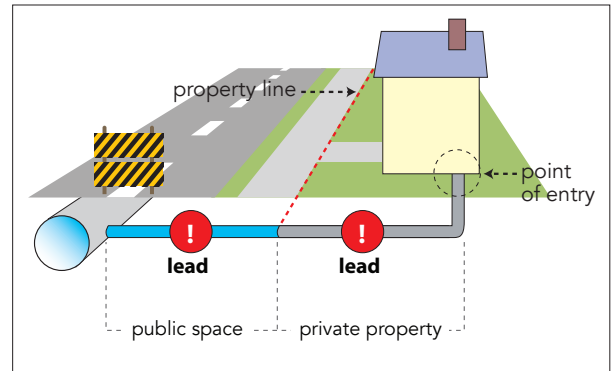
- **Income-Eligible Assistance:** The entire service replacement is paid for by the District's DOEE, depending on mean household income.
- **Standard Assistance:** The entire service replacement is paid for through a combination of District and DC Water Bipartisan Infrastructure Law (BIL) funds. District funds will cover the 50% replacement costs up to \$2,500 and DC Water BIL funds will cover the remaining cost of the service line replacement, which was previously the homeowner's responsibility.

2.1 Lead Service Line Replacement Programs continued

Early Voluntary Full Replacement Program (VFRP)

All homeowners in the District are eligible for the customer initiated the Early Voluntary Full Replacement Program (VFRP). DC Water pays 100% of public-side costs. The property owner pays 100% of the private-side replacement costs. By participating in this program, homeowners in the district can schedule their service line replacement sooner than the DC Water initiated programs.

Under the VFRP program, customers can enroll and schedule lead service line replacements on a rolling basis. It is possible that customers that start as VFRP-eligible may become eligible for free replacements under the Block-by-Block or SDWMR Programs as DC Water selects new blocks for construction. A customer in the VFRP program could also receive a free lead service line replacement under the ERP if emergency repairs are necessary.



Service line materials for properties eligible for the Voluntary Full Replacement Program.



2.2 Prioritization for the Block-By-Block Program

A prioritization model determines the selection of blocks for lead service line replacements in the Block-by-Block program. The model incorporates DC Water’s commitment to water quality and health equity. The results of the model are used to schedule blocks for construction. District blocks with populations that are more vulnerable to the health impacts of lead exposure, including communities of color, will be eligible for free lead service line replacements first. The model also prioritizes the selection of blocks where privately funded lead service line replacement were historically unaffordable.

DC Water’s prioritization model is in alignment with the Biden-Harris Administration’s Justice40 Initiative. The Justice40 Initiative aims to prioritize lead service line removal in disadvantaged communities that are already marginalized, underserved, and overburdened by pollution. While DC Water uses the prioritization model to select blocks for replacements and conduct outreach to property owners, the final scheduling of individual replacements on a block will depend on the approval of District Department of Transportation (DDOT) construction permits. For construction efficiency, blocks that have higher customer participation may also be considered for construction sooner than blocks with lower participation.



JUSTICE40

A WHOLE-OF-GOVERNMENT INITIATIVE



ENVIRONMENTAL JUSTICE

“We’ll create good jobs for millions of Americans...and we’ll do it all to withstand the devastating effects of climate change and promote environmental justice.”

PRESIDENT JOE BIDEN, 2022 STATE OF THE UNION

What is the Justice40 Initiative?

In January 2021, the Biden-Harris Administration created the Justice40 Initiative to confront and address decades of underinvestment in disadvantaged communities. The initiative mandates that at least 40% of the benefits of certain federal programs must flow to communities that are most impacted by climate change, pollution, and environmental hazards.

The Block-by-Block program prioritization model calculates a score for each block in the District, based on the value of five indicators and their weights, as shown in the following table. The model uses data from the service line inventory, vulnerable populations data, and socio-economic data as inputs to calculate a score for each block. The block scores inform the selection and prioritization of blocks for construction execution. Blocks with higher scores are prioritized before blocks with lower scores.



2.2 Prioritization for the Block-By-Block Program continued

Block-by-Block Program Prioritization Model Inputs

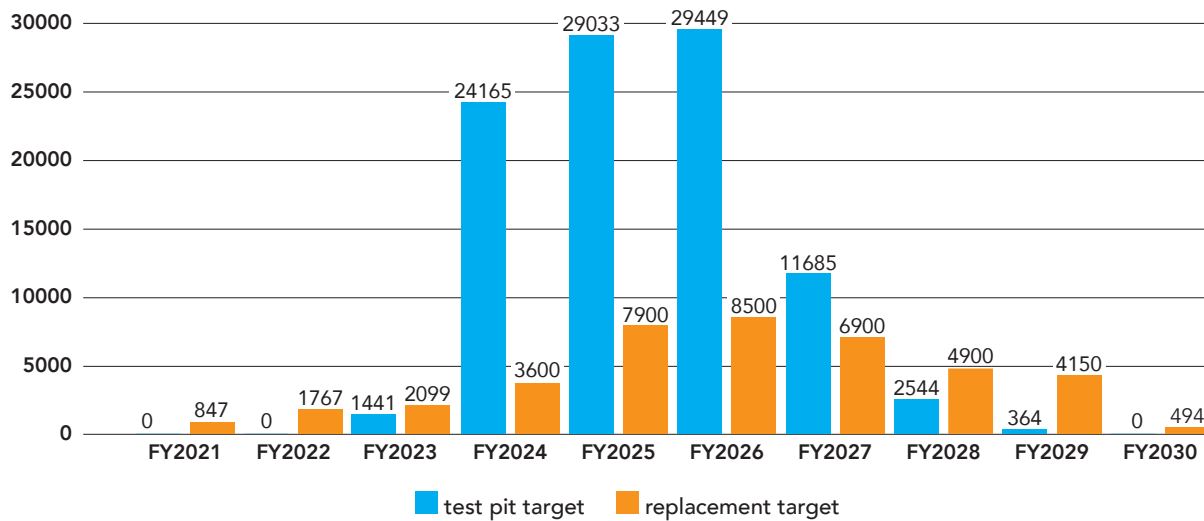
Indicator	Weighting	Reasoning for Indicator	Methodology	Data Sources for Indicator
Service Line Material (Calculated Indicator)	50%	Blocks with more lead service lines reported in the inventory receive priority.	Calculated score based on the count of verified lead service lines, suspected lead service lines, service lines with no information, suspected non lead service lines, and verified nonlead service lines. A multiplier is applied to each category to calculate a final indicator score. The multipliers are as follows: Verified and suspected lead service lines = 10 Service lines with no information = 5 Suspected non lead service lines = 1	Service Line Inventory
Black/African American Population	12.5%	In a March 2020 case study of 3,400 District homes prepared by the Environmental Defense Fund and American University, it was concluded that during the period between 2009 and 2018, when DC Water required customers to pay for replacement on the private side, there were lower rates of full lead service line replacements in wards and census tracts where there were lower MHIs and a higher percentage of African American/Black residents. Blocks with a lower MHI and African American/Black population will receive priority.	Percentage of Black/African American households per census block.	US Census American Community Survey Data (2017–2021)
Median Household Income (MHI)	12.5%	MHI per census block	MHI per census block.	US Census American Community Survey Data (2017–2021)
Children Under 5	10%	Pregnant women and young children are most vulnerable to lead's effects. Before age six, young children's brains and central nervous systems are still forming and are easily susceptible to damage. Pregnant women are also at special risk to lead exposure because lead they absorb crosses the placenta and enters the fetus. Blocks with a higher percentage of children under 5 will be prioritized.	Percentage of children under the age of 5 on a block.	US Census American Community Survey Data (2017–2021)
Blood Lead Level Indicator (Calculated Indicator)	15%	The amount of lead in blood is the blood lead level (BLL), which is measured in micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$). Blocks with higher median BLLs will receive priority	Calculated score based on the median BLL on a District block. A multiplier is applied to the median BLL. The multipliers are as follows: Less than ($<$) $2 \mu\text{g}/\text{dL}$ = 1 $2\text{--}4 \mu\text{g}/\text{dL}$ = 2 $4\text{--}5 \mu\text{g}/\text{dL}$ = 5 More than or equal to (\geq) $5 \mu\text{g}/\text{dL}$ = 10	District DOEE. The core of the data is generated through the District's "Twice by Two" Program, which requires children's blood to be tested twice by age two.

SECTION 3: LEAD FREE DC PROGRAM SCHEDULE

3.1 LFDC Program Schedule

The chart below shows the number of lead service line replacements that DC Water aims to complete each year for the remainder of the program. The Test Pit Program will occur simultaneously to identify locations where there are lead services. Over the next few years, as shown in the figure below, we aim to have records that confirm the locations of at least 90% of the lead service lines in the District by January 1, 2027. In the last three years of the program, the remaining pipes will be replaced.

Annual Targets for Replacements and Test Pits (by fiscal year)



Note: The number of replacements shown for Fiscal Year (FY) 2021 and 2022 are actual numbers and not projections.

3.2 LDFC Construction Dashboard

This year, we upgraded the Construction Dashboard hosted on the LFDC Program website. Customers can search the Construction Dashboard by the property address to see the construction status of each block in the LFDC Program. The Dashboard displays which LFDC Program is planned for each block. The dashboard will also provide more detailed information about the construction schedule for blocks in the Block-by-Block and SDWMR Programs when they become available, as well as the contractor’s name and contact information. Homeowners may wish to accelerate their lead service line replacement by enrolling in the LPRAP and VFRP programs. Properties that are eligible for the LPRAP and VFRP are scheduled on a case-by-case basis. The Construction Dashboard does not show a schedule for these programs.

DC WATER Lead Free DC Lead Service Replacements (LSR) Construction Dashboard

Premise Info: Please use drop-down to search and select address.
 Please Select an Address: 1426 MASSACHUSETTS AVE SE

Block Name: 1400 BL MASSACHUSETTS AVE SE

Program Type: By Type | **Package Number:** 6

Lead Free DC Block Construction Status
 Lead Free DC is currently working to replace the lead service line connected to your property. Your block could be in the design phase or undergoing permitting reviews. DC Water will contact you when construction is scheduled for your block, within the next two years. Email lead@dcwater.com or call 202-787-4044 to get more detailed information about the status and future updates for your replacement.

Contractor Info:

Contractor	Construction Start Date	Construction End Date	Contractor E-mail	Contractor Phone
Capitol Paving	3/20/2023	9/30/2024	fernando.chicas@capitolpaving.com	(202) 529-7225

Prepared by: LFG | Version Number: 1.0 | Program Information as of: 4/7/2023 5:06:53 PM

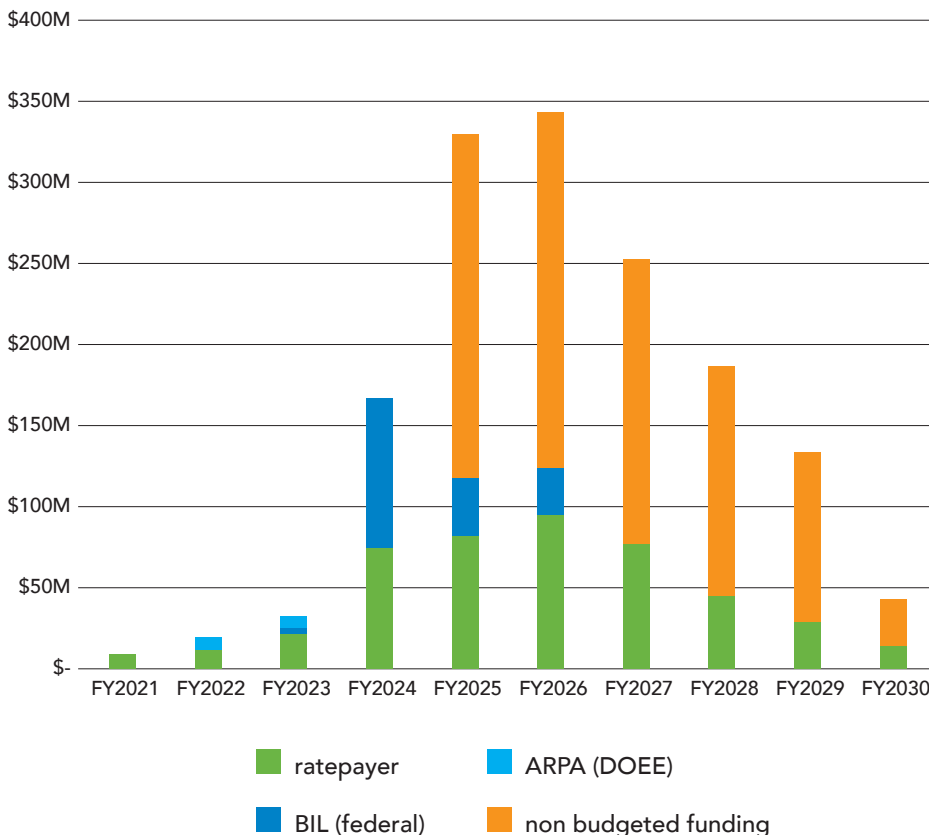


SECTION 4: PLANNING LEVEL OPINION OF PROBABLE CONSTRUCTION COSTS

DC Water has developed a planning level cost estimate of \$1.51 billion to fund the entire program. This cost estimate is primarily based on assumptions about the dollars recently spent in the District on previous service line replacement contracts. It includes assumptions about the future cost of program management, construction materials and labor required to replace 41,157 service lines. Many factors will affect the actual incurred costs of the program, including customer participation, coordination with other District programs and agencies, variable costs of roadway and sidewalk restoration and the actual number of lead service lines replaced as determined by the Test Pit Program. Planning level costs reflect both public-side replacement costs (incurred by DC Water) and private-side replacement costs (incurred by DC Water, the District, and in some cases, the property owner).

DC Water projected the costs over the life cycle of the LFDC Program (2021-2030) to calculate the fiscal impact of the program and identify the funding gap. LFDC program costs include program management, engineering, construction management, administration, DDOT permitting, DOB permitting, test pitting, service line installation and restoration. Total costs are escalated annually at 5% to account for inflation. A 20% contingency for construction costs was used to develop this estimate. Cost estimates conform to the Association of Advancement of Cost Engineering Class 4. The cost of the program by fiscal year is shown below. The costs shown in fiscal years 2021 and 2022 are actual costs.

Lead Free DC Program Costs by Fiscal Year (FY21-FY30)



The increase in the program cost since our 2021 Plan is primarily due to the following factors:

- Increased number of lead service lines estimated to be replaced (27,975 in 2021 vs 41,157 in 2023).
- Additional cost of the Test Pit Program (13,950 in 2021 vs 100,861 in 2023).
- Anticipated cost of inflation (0% in 2021 vs 5% in 2023).
- Commensurate cost increases for road and sidewalk restoration.
- Additional program management fees for an expanded program.
- Increased material and labor costs.

SECTION 5: STAKEHOLDER ENGAGEMENT, MARKETING AND COMMUNITY OUTREACH

LFDC will continue DC Water’s commitment to transparency and customer engagement with a robust communications, marketing, and community outreach strategy. DC Water continues to educate and inform customers about the program through door-to-door direct engagements and indirect communications, stakeholder engagement, community-based organization engagement, targeted outreach, and marketing campaigns. We use a variety of methods, including a revamped program website with a construction dashboard and videos, blogs, mail notifications, phone calls, emails and text alerts, brochures and flyers, yard signs/door hangers, presentations to ANCs (Advisory Neighborhood Commission), mapping tools that use geographic information systems, and media. In addition, DC Water has forged relationships with local agencies to spread the word about LFDC including the DC Council, Office of the Deputy Mayor for Planning and Economic Development/Office of Planning, DDOT, Department of Human Services (DHS), Department of Health (DOH), Office of Racial Equity and the Mayor’s Office of Community Relations and Services. A critical part of our outreach goal is to connect with vulnerable populations (e.g., children, women who are pregnant), and historically underserved communities.



LFDC mailers and yard signs used for community outreach purposes.

5.1 Community Outreach Objectives

- Outreach to all District residents who may receive water through a lead service line (tenants as well as housing providers) to maximize participation in scheduled replacement activities.
- Equitably inform and educate customers about the LFDC program so that all customers understand why replacing lead service lines is important.
- Eliminate barriers to participation among community members who speak languages other than English.
- Inform customers about their service line material with an updated map on the LFDC website. The public facing map allows customers to enter their property address and zip code to search for their expected service line material.
- Provide information to customers about their options for service line replacements.
- Publicize tools to address lead risk (e.g., assistance funding, free test kits, service line map, identification guides, etc.).
- Engage community-based organization leaders and elected officials to advocate for lead service line replacements and advance the inclusion and prioritization of vulnerable populations and historically underserved areas in the implementation of the LFDC program.



5.2 Community Outreach Tactics

5.2.1 Stakeholder Engagement

The LFDC Program is a joint government and community effort. Since 2021, DC Water has worked closely with the Mayor's Office, DDOT, DOB (formerly DCRA), and DOEE to:

- Streamline permitting requirements.
- Coordinate planned construction projects.
- Prioritize lead service line replacements concurrently with other District infrastructure projects.
- Collect service line data during home and permitted work inspections.

DC Water is committed to working with external partners in other capacities including:

- Industry groups plumbers and contractors.
- Community partners including DC Realtors, DC Environmental Network, Resilient DC, etc.
- Faith-based organizations and other nonprofits, such as the Greater Washington Urban League and AARP, to distribute information, co-host workshops and help customers complete agreements.
- DC Office on Religious Affairs, DC Office on Aging and other District government agencies to help reach customers and disseminate information.

5.2.2 Engagement of Community-Based Organizations

DC Water will enlist the partnership of local Community-Based Organizations (CBOs) in a multifaceted community outreach effort to build public trust and support for LFDC initiative. Initiatives will include:

- Working with local community partners to increase public awareness, engage in lead free advocacy, and disseminate information on the LFDC initiative including:
 - Civic/citizen associations, faith-based organizations, environmental organizations, and other nonprofits, such as the Greater Washington Urban League and AARP.
 - Childcare centers.
 - Local universities.
 - DC Office on Religious Affairs, and DC Office on Aging.
 - DC Office of Employment Services (DOES).
 - Environmental organizations.
 - Industry groups, plumbers, and contractors.
- Establishing partnerships with public health and healthcare professionals, housing, landlord, tenant organizations, DC public schools, DC libraries, District Parks and Recreation, and DOEE helps accelerate lead service line replacement by:
 - Serving as a trusted voice to the community and consumers.
 - Providing a bridge to reach specific audiences including homeowners, renters, school age children/families.
 - Supporting proposals to funders, elected officials, and other community leaders.
 - Advising on best practices for identifying lead and replacing lead service lines.
- Collaborating with other key stakeholders, including the DC Council and the Executive Office of the Mayor (EOM), operational offices and agencies, to facilitate momentum and increase program participation.

5.2.3 Direct Engagement with Customers

DC Water continues to leverage opportunities to engage directly with customers and encourage their participation by:

- Maintaining a LFDC webpage, lead hotline and a designated email inbox for inquiries from customers.
- Hosting public pop-up events in the District at farmers’ markets, outside Metro stations or other high-traffic public locations in the District to hand out information and engage with customers.
- Engaging in door-to-door canvassing in targeted neighborhoods.
- Visiting senior wellness centers to hand out information about LFDC programs.
- Attending Advisory Neighborhood Commission and Civic Association Meetings to offer presentations to share information about the program and explain the application process.
- Coordinating with EOM and Council offices to distribute information to constituents.
- Distributing semiannual bill inserts about programs in LFDC bill envelopes.
- Distributing email blasts and engaging community listservs.
- Expanding website and digital resources.
- Implementing social media campaigns.
- Creating “hubs” for information about lead at DC libraries and recreation centers.
- Educating/informing children about the program to increase participation from parents.

5.2.4 Promotion

DC Water and our partners will pursue traditional means of promoting and advertising to disseminate LFDC messaging and initiatives, including:

- Engage with local media for program updates and announcements.
- Enhance homeowner participation using neighborhood-specific marketing campaigns during door-to-door canvassing.
- Engage in paid advertising exposure to broader audiences, creating high visibility messaging to customers and stakeholders. Paid advertising will include print ads in local publications, digital ads and out of home ads at transit centers and bus advertisements.

2023 Community Activators: Partnership in Action

In May 2023, DC Water partnered with the Department of Employment Services (DOES) Workforce Development Initiative to create 20 new positions on the Lead Free DC Team. The new “Community Activators” positions provide opportunities for DC Residents to receive on the job training in the skills required for community engagement. The Community Activators will work with experienced LFDC Outreach Team members so they can become advocates and leaders in the community to promote the benefits of a city without lead.



DC Water Community Activators join DC Water CEO and General Manager David Gadis during training orientation.

SECTION 6: LEGISLATIVE MANDATE

District of Columbia lawmakers are currently working on a mandate that requires property owners in the District to replace lead service lines. Currently, all the LFDC Programs are optional and require a signed agreement from the homeowner to complete the work. Ensuring that all such replacements are mandatory and free to residents is fundamental to increasing homeowner participation and removing many barriers to a successful program. The most impactful components of the potential legislative mandate pending before the Council of the District of Columbia include, but are not limited to, the following requirements:

1. A requirement to remove lead service lines from public property, District government buildings and privately owned properties by January 1, 2030.
2. A requirement for DC Water to create and maintain a public facing inventory of water service lines identifying those that are or could be lead service lines.
3. The development of a schedule of co-payments for lead service line removal program participation and penalties for noncompliance.
4. A requirement to communicate in plain language with DC Water property owners and tenants the material of their service line, health impacts of lead, information about the mandate to replace lead service lines and options for removing lead service lines.
5. A requirement for DC Water to report on their progress.

DC Water supports a legislative mandate to replace lead service lines in the District along with the support of increased funding for all replacements.





SECTION 7: DISTRICT DEPARTMENT OF TRANSPORTATION (DDOT) PERMITTING COORDINATION

To advance the lead service line replacement initiative, collaboration between DC Water and DDOT is essential. DDOT is a critical partner in the program because the agency issues the public space permits required for construction in the District. To improve coordination and streamline the issuance of permits, a draft Memorandum of Understanding (MOU) between the two agencies has been prepared and is currently under review. Key components of this MOU include the following:

Permitting

- Block closure permits allowing the full shut down of “through traffic” on blocks for up to two months to allow expedited completion of the work on each block and to minimize the duration of impact to residents.
- Up to 300 open block permits may be required in any given month to meet the program schedule to replace all lead lines by 2030. Up to 100 blocks may be closed on any given day where active work is being completed (test pits, replacements, and/or restoration work).
- Work hours would be 7:00 a.m. to 7:00 p.m. and weekends to accommodate homeowners’ schedules to facilitate their presence during the replacement process.
- Blanket permits that put all maintenance of traffic requirements on DC Water in a holistic manner, not on an individual block evaluation.
- DC Water and DDOT will closely coordinate on construction and paving/restoration schedules.

Staffing

- Dedicated third-party permit application reviewers and inspection technicians will be used.
- Funding of dedicated third-party permitting costs for DDOT through DC Water.
- Monthly coordination meetings to review pending applications, inspections, and permit closeout requirements.

Public Outreach

- Detailed public outreach coordination by DC Water related to block closures and traffic patterns.

DC Water’s proposed approach benefits both the DDOT and the District. The benefits include:

- Reduced construction duration on each block.
- Supporting Vision Zero, an initiative that aims to improve roadway safety in the District.
- Saving time and money.
- Fewer complaints.
- Supporting Operation Smooth Streets.



SECTION 8: FUNDING OPPORTUNITIES

The Opinion of Probable Construction Cost (OPCC) for the LFDC Program is estimated to be \$1.51 billion. To support this large program, DC Water has identified the following funding sources:

Bipartisan Infrastructure Law (BIL) Funds

DC Water has been allotted approximately \$143 million under the federal BIL. DC Water has submitted an Intended Use Plan which was approved by EPA and has completed the public comment review period with no comments. DC Water understands that in the future additional funds could be available from the BIL.

American Rescue Plan Act (ARPA) Funds

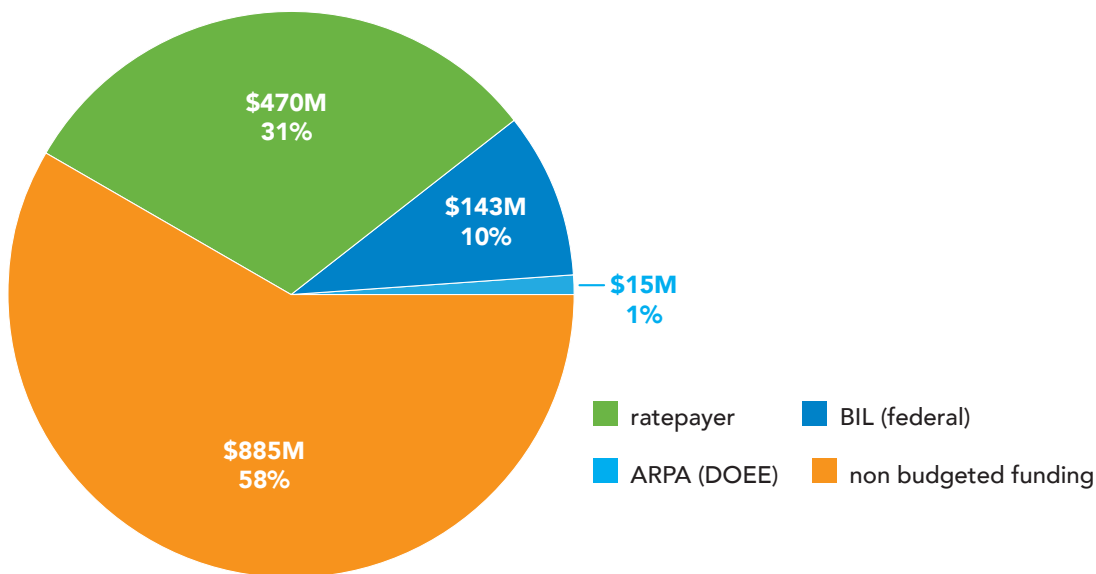
The District DOEE has received funding through APRA from the District and committed \$15 million for Fiscal Years 2022 and 2023 to DC Water for lead service line replacements on private property. The District has not committed to providing additional funds through ARPA.

Ratepayer Funds

Approximately \$470 million has been allocated in DC Water’s 10 Year Capital Improvement Program budget toward the LFDC Program. DC Water is persistently looking for additional sources of funding to reduce the program’s impact on ratepayers.

The chart below shows the estimated contribution of each funding source. As of June 2023, approximately \$885 million is not funded. Acquiring this funding could mean free or discounted lead service line replacements for every homeowner in the District. Without this funding, we may need to include this amount in the DC Water Capital Improvement Program, which would require customer rate increases higher than previously forecasted or a reduction in other planned infrastructure investments. DC Water is looking to secure additional funding from grants, low interest loans and philanthropic resources to bridge the funding gap.

Funding Sources for LFDC Program



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8.1 Potential Funding Sources

DC Water continues to research and pursue funding opportunities to reduce the shortfall in program finances, with the goal of minimizing the ratepayers' contribution to the program. Potential funding sources recommended and researched to date include the following:

1. District Funding for Private Side Replacements

The District of Columbia has previously provided funding for replacement of the private side of the service line. DC Water cannot use ratepayer funds to make improvements on private property in the District.

Approximately 40% of the program costs are for restoration, including sidewalk and pavement restoration. DC Water will explore a partnership to leverage District funds for sidewalk and pavement reconstruction. This could include Federal Highway Funds (FHWA) and dollars appropriated for locations that are not eligible for FHWA funds (local streets).

2. Water Infrastructure Improvements for the Nation Act (WIIN Act)

This program assists disadvantaged communities with removing sources of lead in drinking water from drinking water systems and schools. The District Department of Energy and Environment (DOEE) received \$2.3 million in Fiscal Year 2021 to support their childcare center and school lead reduction program. DC Water will continue to pursue future opportunities under the WIIN Act.

3. DC Department of Housing and Community Development (DHCD) | Community Development Block Grant (CDBG) | Capital Fund Formula Grants | National Housing Trust Fund | Preservation Fund | Healthy Homes Production Grant Program.

The District receives a direct allocation of Community Development Block Grant funding from the US Department of Housing & Urban Development (HUD) to provide loans and/or grants for home repairs. These repairs help to alleviate DC building code violations, fix health and safety concerns and make accessibility modifications. Through the Residential Rehabilitation Program, lead service lines can be replaced in addition to other qualifying housing rehabilitation activities.

HUD issues Lead Hazard Control grants that typically address lead hazards in about 300 homes over 3 years. The DC Department of Housing and Community Development is a current grant awardee so there could be an opportunity to include lead service line replacements.

4. EPA: Drinking Water State Revolving Fund – Base Program

DC Water has previously been allocated funds under the Base Program for Small Diameter Water Main (SDWM) projects. Should additional funding become available above the Base Program amounts, future grant applications could be submitted for lead service line replacement projects.

Future funding at the Base Program amount is also allocated to the Small Diameter Water Main projects in the Capital Improvement Program. If used for the lead removal program shifting these funds would create funding shortfalls for the SDWM program or delay those projects.

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5. EPA: Drinking Water State Revolving Fund - Infrastructure Investment and Jobs Act (IIJA) Enacted "General Supplemental" Funds

DC Water has previously been allocated funds under the "General Supplemental" Funds for Small Diameter Water Main projects. Should additional funding become available under the "General Supplemental" Funds above the currently anticipated levels, future grant applications could be submitted for lead service line replacement projects.

Future funding at the enacted levels is also allocated to SDWM projects. Shifting of those funds from the SDWM program to the lead removal program would create funding shortfalls for the SDWM program or delay those projects.

6. EPA: Water Infrastructure Finance and Innovation Act (WIFIA)

This low interest rate loan program is another potential funding resource for DC Water. WIFIA is a loan program, and funds would need to be paid back.

7. Potential funding under pending legislation

Draft legislation that may provide funding for lead service line replacement programs in the future includes the Drinking Water and Wastewater Infrastructure Act (DWIA) of 2021 and The Moving Forward Act of 2020, HR 2. DC Water is tracking the progress of these bills to secure additional funding should it become available.

8.2 Excluded Funding Sources

DC Water's research has excluded the following previously identified funding sources. DC Water is not eligible for these programs, the programs are not applicable for lead service line replacements, or the programs have expired.

- United States Department of Agriculture (USDA): Water and Environmental Programs (WEP)
- USDA: Rural Housing Repair Loans and Grants
- Department of Health and Human Services (HHS)/ Centers for Medicare & Medicaid Services (CMS) Children's Health Insurance Program Health Services Incentives-Lead Abatement
- Head Start Services / Administration for Children & Families (HHS/ACF): Head Start Program
- Denali Commission: Sanitation
- Bureau of Indian Affairs (BIA): Other Program Construction, Water Safety and Sanitation
- BIA: Water Sanitation
- BIA: Facilities Infrastructure and Repair: Environmental Projects
- National Park Service (NPS): Federal Lands Enhancement Recreation Act fees
- NPS: Line-Item Construction
- NPS: Asset Management
- HUD: Lead Hazard Reduction Healthy Homes Supplements
- HUD: Section 202 Housing for the Elderly Capital Advance
- HUD: Section 811 Housing for the Persons with Disabilities Capital Advance
- HUD: Housing Trust Fund (HTF)
- HUD: HOME Investment Partnerships Program (HOME)
- HUD: Public Housing Fund – Healthy Homes Set-Aside
- U.S Department of Commerce's Economic Development Administration (EDA), Public Works and Economic Development Program

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8.3 Private Philanthropy Grant Funding

DC Water plans to continue to explore the option of private foundation grant funding. Based upon preliminary research, funding may be available from the following organizations:

- Kaiser Permanente
- The Greater Washington Community Foundation
- The Morris and Gwendolyn Cafritz Foundation
- Coca Cola Foundation Grant

DC Water has determined that it is not eligible to receive funding from the following organizations identified in the 2021 Plan:

- Plan Walton Foundation
- Rockefeller Foundation
- Lilly Foundation
- Bloomberg Foundation

DC Water will continue to explore additional private philanthropy grant funding sources as the program progresses. DC Water will also continue to explore opportunities with private donors.



