



# Addressing Lead in Drinking Water with the Drinking Water State Revolving Fund

Communities may use the Drinking Water State Revolving Fund (DWSRF) to reduce this public health concern in their drinking water systems.

## BACKGROUND

Lead is a naturally occurring element. Lead is particularly dangerous to children because their growing bodies absorb more lead than adults and their brains and nervous systems are more sensitive to the damaging effects of lead. Adults and children may be exposed to lead by eating and drinking food or water containing lead or from dishes or glasses that contain lead.

The most common sources of lead in drinking water are lead pipes, faucets, and fixtures. Lead pipes are more likely to be found in older cities and homes built before 1986. One of the ways lead can enter drinking water is when lead service lines (the pipes connecting buildings to the water main) corrode, especially where the water has high acidity or low mineral content.

## DWSRF ASSISTANCE

The DWSRF can provide financial assistance to publicly owned and privately owned community water systems, as well as non-profit non-community water systems, for drinking water infrastructure projects. Projects must either facilitate the system's compliance with national primary drinking water regulations or significantly further the health protection objectives of the Safe Drinking Water Act (SDWA).

Each of the 50 states and Puerto Rico operates its own DWSRF program. They receive annual capitalization grants from the EPA, which in turn provide low-interest loans and other types of assistance to water systems. Repayments of DWSRF loans begin one year after project completion, with loan terms up to 30 years for most communities, and up to 40 years for disadvantaged communities.

Additionally, states may use a portion of their capitalization grant from the EPA as "set-asides" to help communities build the technical, managerial, and financial capacities of their systems. With an emphasis on small systems, these funds help ensure sustainable infrastructure and public health investments.

### EPA's Lead Resource Page:

<https://www.epa.gov/lead/learn-about-lead>

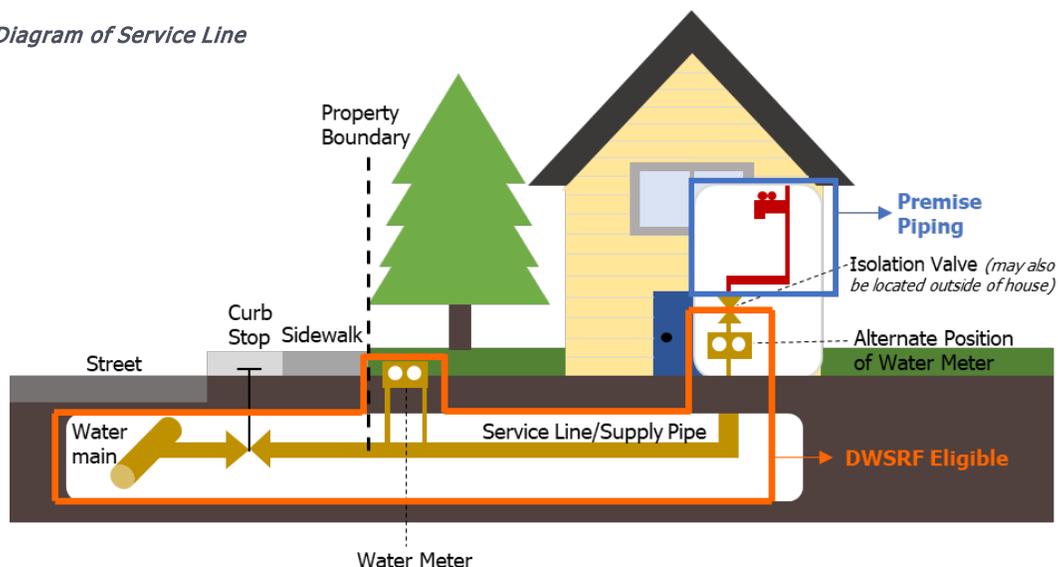
### Infographic: Lead in Drinking Water:

<https://www.epa.gov/ground-water-and-drinking-water/infographic-lead-drinking-water>

### Lead and Copper Rule:

<https://www.epa.gov/dwreginfo/lead-and-copper-rule>

Figure 1: Diagram of Service Line



### Infrastructure Replacement

Complete service line replacement is an eligible DWSRF expense, regardless of pipe material and ownership of the property on which the service line is located. The EPA Science Advisory Board report, [Evaluation of the Effectiveness of Partial Lead Service Line Replacements](#), September 2011, advises against partial lead service line replacement and notes that other pipe materials, including galvanized pipe, can also become compromised if only partially replaced. Therefore, DWSRF funds may only be used for complete lead service line replacement, unless a portion has already been replaced or is being concurrently replaced with another funding source.

Complete service line replacement is defined by replacing pipes up to the point of premise piping. As shown in Figure 1, (continuing from the publicly owned portion of the pipe often found under a street,) the entire service line from the public water main to the point at which it connects with premise piping is DWSRF-eligible. Premise piping is defined as the pipes found on the other side of the isolation valve. That connection may be inside or outside of homes and other buildings. Note that premise piping is *not* eligible for DWSRF funding.

### Corrosion Control Optimization

Corrosion control planning and design, as well as associated capital infrastructure projects, are eligible for DWSRF loan funding. States may also use set-aside funds to assist water systems' development of corrosion control strategies. These strategies could include adding chemicals to modify drinking water chemistry

or wrapping ductile iron distribution system pipe with a corrosion-resistant material.

### Lead Testing and Education

States can use DWSRF set-aside funds to present workshops, seminars, and other training events that provide operators with ongoing educational opportunities. Set-aside activities for educational purposes may include training school staff members or small system operators on how to perform lead monitoring and testing. Pilot testing and lead sampling (if not for compliance purposes) may also be eligible for set-aside funding. Development of lead service line inventories, including locating lead service lines, is eligible for set-aside funding or via the loan fund.

### Interim/Emergency Protocols

In the case of a "do not drink" order or other lead emergencies, states can fund limited infrastructure that is necessary for trucked-in water (i.e., storage tank and associated piping). This infrastructure must belong to the water system and ownership must continue after the emergency has concluded. Trucked-in water and bottled water are ineligible for DWSRF assistance.

### APPLY FOR FUNDING

Water systems receive DWSRF assistance directly from state agencies. Each state has its own application procedure. Contact information for each state is posted at <https://www.epa.gov/drinkingwatersrf/state-dwsrf-website-and-contacts>.



For more information, visit: [epa.gov/dwsrf](https://www.epa.gov/dwsrf)



# DWSRF Case Studies: Lead in Drinking Water

How communities are using the Drinking Water State Revolving Fund (DWSRF) to address this public health concern in their drinking water systems.

## STOCKTON, UT

The Town of Stockton, Utah, serving 616 people, had approximately 7,400 linear feet of cast iron water main with lead joints in its water system. Most of this piping was over 100 years old. A nearby sewer collection system project caused the water mains to fail at an accelerated rate. Though the sewer project maintained a 50-foot distance between the drinking water mains, ground vibrations during construction caused the pipe joints to leak. This caused the soil underneath to erode, leaving the water mains unsupported, which led to additional leaks. The Town estimated that the leaks were approximately 80 to 100 gallons per minute. On one road, seven new leaks surfaced within 300 feet of each other in just one day. With assistance from the Utah DWSRF, this project replaced all cast iron water mains in the impacted area, addressing the leaks and eliminating a source of lead exposure in the system. This project began in November 2010 and was completed in April 2011. DWSRF financial assistance for this project totaled \$389,000; this project was co-funded by the Utah Department of Environmental Quality.

## ASHLAND, WI

The City of Ashland, Wisconsin, received \$600,000 in DWSRF assistance between 2017 and 2018 as 100% principal forgiveness. The City is using these funds to replace an estimated 200 private galvanized and lead service lines (LSL) at residences, schools, or daycare facilities. Ashland, with approximately 8,000 residents, was designated as a disadvantaged community under the Wisconsin DWSRF program. This project prioritizes LSL replacement for the following situations:

- Households with children under 6 years old;
- Households below the federal poverty level; and
- High-risk minority groups.

To date, the City has requested reimbursement for the replacement of 51 LSL.

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<https://www.epa.gov/ground-water-and-drinking-water/infographic-lead-drinking-water>

### Lead and Copper Rule:

<https://www.epa.gov/dwreginfo/lead-and-copper-rule>

## GEORGETOWN, DE

The Town of Georgetown, Delaware, utilized approximately \$2.2 million in DWSRF assistance to replace undersized water mains, lead gooseneck service connections, galvanized service lines, and water meters. The Town experienced approximately 50 water main leaks per year; in 2009, there were 45 leaks costing the Town over \$100,000 for emergency repairs. This community of over 6,000 residents replaced approximately 400 service lines, resulting in a major reduction of water main leaks and sources of lead throughout the town. Georgetown is currently assessing service lines still in need of replacement and will seek funding to replace those pipes.

## CLAREMONT, NH

Claremont, New Hampshire, with a population of 9,000, utilized \$500,000 in DWSRF assistance to replace lead service lines (LSL) and gooseneck service connections. Additionally, if paid by the homeowner, the City replaced the private portion of the LSL. This project was prioritized after a 2016 lead pipe survey by the NH Department of Environmental Services. Some of the City's LSLs are from the early 1900s and are in the older part of town where many low-income residents and young families reside. As of 2018, the City has approximately 80 LSL to replace.



## WISCONSIN LSL REPLACEMENT PROGRAM

Wisconsin's DWSRF established a two-year program (2017 and 2018) to assist disadvantaged communities in replacing lead service lines (LSL) on private property for projects that result in full LSL replacements. The state provided assistance in the form of principal forgiveness. Communities had the option to issue a Request for Qualifications to prequalify plumbers/contractors for participation in the private LSL replacement program. Homeowners contracted directly with a plumber from the prequalified list and then were either reimbursed by the community or the community paid the plumber directly on the homeowner's behalf. Communities decided how to prioritize and distribute their funds. The private LSL replacement program could be used for costs associated with private homes, pre-K-12 schools, and licensed/certified day care centers. Commercial and business properties were ineligible, except in instances where a building contains both a business and a residence. All associated costs for private LSL replacement were eligible for funding, including lead gooseneck service connections, galvanized service lines that have been served by lead lines/pipes in the past, investigative costs, engineering costs, and force account work. The public portion of the service line was eligible for traditional DWSRF funding.

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