

Lead Service Line Replacement Cost Calculator (LSLRCC) for Climate Resilient Drinking Water Systems

A free UNEP recognized tool helping cities model lead service line replacement costs and strengthen climate resilient drinking water systems.

Summary

The Lead Service Line Replacement Cost Calculator (LSLRCC) is a free, multilingual tool developed to help Tribal and local governments plan and estimate the cost of replacing lead service lines. It supports the national effort to replace millions of lead service lines across the United States and assists water utilities in complying with EPA's Lead and Copper Rule Improvements. The tool also strengthens climate resilient drinking water planning by helping communities evaluate future cost risks and infrastructure needs.

Lead exposure remains a major public health threat that contributes to developmental delays, cardiovascular disease, kidney damage, and reproductive harm. Impacts fall disproportionately on vulnerable and underserved populations, creating long standing environmental justice challenges.

The LSLRCC was created to fill a critical resource gap for historically disadvantaged and under resourced communities. Anonymous analytics indicate that billions of dollars in potential replacement costs have already been modeled through the tool, helping localities make informed and data driven infrastructure decisions.

By lowering economic and technical barriers, the LSLRCC empowers communities to address one of the most persistent environmental health challenges facing drinking water systems. Recognized by the United Nations Environment Programme, UNESCO, and the UN Global Compact Water Action Hub, the tool advances equitable access to safe drinking water, strengthens climate and health resilience, and supports multiple UN Sustainable Development Goals.

City

Chicago

Project Area

United States

Main Actors

Local Government

City Government

Regional Government

National Government
Supranational and Intergovernmental Institutions
Private Sector
NGO and Philanthropy
Community and Citizen Groups
Public Utility
Other
Research Institutes and Universities

Project Start

2025

Project End

Ongoing

Background and Objectives

Lead exposure remains one of the most persistent public health threats in the United States, affecting millions of lead service lines still in use. Cities and Tribal Nations face significant barriers when planning large scale lead service line replacement, including limited funding, lack of technical capacity, uncertainty about true project costs, and increasing climate pressures that strain already vulnerable drinking water systems. These challenges disproportionately harm underserved, low income, and historically marginalized communities, many of which lack access to technical tools needed to make informed infrastructure decisions.

In response to this need, Environmental and Public Health International (EPHI) in Chicago developed the Lead Service Line Replacement Cost Calculator (LSLRCC), a free, multilingual tool designed to help governments estimate replacement costs and plan climate resilient drinking water infrastructure upgrades. The tool supports utilities working to comply with EPA's Lead and Copper Rule Improvements, which require communities nationwide to develop inventories, improve public communication, and accelerate full lead service line replacement.

The project's objectives are to reduce technical and economic barriers to safe drinking water, support cost effective implementation of the LCRI, and strengthen community resilience to climate driven shocks such as extreme heat, cold, flooding, and drought. By providing accessible cost modeling, the LSLRCC empowers local governments and Tribal Nations to plan equitable infrastructure investments, prioritize vulnerable neighborhoods, and better advocate for federal and state funding.

Recognized by the United Nations Environment Programme, UNESCO, and the UN Global Compact Water Action Hub, the LSLRCC advances multiple Sustainable Development

Goals including good health, safe water and sanitation, resilient cities, and climate action. The tool fills a critical national resource gap and serves as a scalable, replicable model for climate aligned drinking water planning.

Implementation

Development of the Lead Service Line Replacement Cost Calculator began following the establishment of Environmental and Public Health International (EPHI) in Chicago. Drawing on lessons from the Flint Water Crisis, where aging lead service lines, inadequate oversight, and cost driven decisions contributed to one of the most severe drinking water emergencies in United States history, founder Anthony Ross applied insights from his 12 years with the United States Environmental Protection Agency, including his role as EPA's Flint Safe Drinking Water Act Emergency Coordinator.

Through this work, EPHI identified key barriers facing municipalities and Tribal governments such as cost uncertainty, limited local data, and the lack of accessible tools for under resourced communities.

Financing and Resources

The development of the Lead Service Line Replacement Cost Calculator was fully self funded by Environmental and Public Health International. The project did not rely on external grants, public funding, or private sector financing. This allowed the tool to remain independent, free, and accessible to all users.

Results and Impacts

Since its release in April 2025, the LSLRCC has been used nationwide, with analytics showing billions of dollars in modeled replacement costs that support grant applications, LCRI compliance, and local infrastructure planning. It is positioned to benefit small, rural, and under resourced communities by reducing cost uncertainty and expanding access to technical planning tools.

Its growing visibility, including recognition from UNEP, UNESCO, the UN Global Compact Water Action Hub, and formal documentation through both an OSF DOI and a UNESCO IHP WINS DOI, suggests it could continue to advance safe drinking water access, climate resilience, and equitable infrastructure investment across diverse regions.

Barriers and Challenges

A key challenge has been limited awareness of the tool in its early stages, which reduced initial uptake and made it harder for some communities to discover and use the LSLRCC.

Lessons Learned and Transferability

A key lesson learned is that simple, accessible digital tools can significantly reduce barriers for municipalities and Tribal Nations when planning lead service line replacement. The LSLRCC showed that multilingual, browser based resources increase usability for under resourced communities and that clear cost modeling strengthens funding readiness.

The tool's design is fully transferable and adaptable to any city's data inputs, making it easy to scale. Its recognition by global platforms and formal documentation through OSF and UNESCO IHP WINS support broader adoption. The LSLRCC provides a replicable model for other cities and countries seeking low cost, scalable tools to improve safe drinking water planning and climate resilience.

References

United States Environmental Protection Agency. Proposed Lead and Copper Rule Improvements. 2023.

External Links

Lead Service Line Replacement Cost Calculator

<https://ephillc.com/lead-service-line-replacement-cost-calculator/>

EPHI Newsroom and Media Updates

<https://ephillc.com/category/news/>

LSLRCC Partnership and Sponsorship Page

<https://ephillc.com/public-health-sponsorship-opportunities/>

Categories (Tags)

Topics

Biodiversity

Lead Service Line Replacements

Circular economy

Citizen engagement

Climate adaptation

Climate mitigation
Economic development
Environmental protection
Governance
Health and wellbeing
Housing
Inclusion and equity
Resilience and risk management
Smart city and technology
Sustainable Water Management
Urban design
Urban development and infrastructures

Sustainable Development Goals

2 Zero Hunger
3 Good Health and Well Being
6 Clean Water and Sanitation
9 Industry, Innovation and Infrastructure
10 Reduced Inequalities
11 Sustainable Cities and Communities
13 Climate Action
16 Peace, Justice and Strong Institutions
17 Partnerships for the Goals