

LEAD AND COPPER RULE KEY POINTS

Lead in Drinking Water Cost-Benefit Analysis: EPA in the Past Failed to Monetize Most Benefits

- EPA's 2021 Lead and Copper Rule Revisions (LCRR) failed to monetize numerous health impacts that EPA's Integrated Science Assessment¹ found are causally related to lead exposure. A peer reviewed journal article published by former EPA staff scientists now at Harvard found EPA failed to monetize well over 90% of the benefits of the LCRR.²
- Non-monetized health benefits included: cardiovascular disease/death, coronary heart disease, lung cancer, asthma, hypertension, preterm birth, male reproductive impairment, short-term damages to cognitive function, ADHD, depression, dementia, and auditory impairment.
- Additionally, there are enormous non-monetized benefits from corrosion control including reduced corrosion of water system pipes, household pipes, fixtures and water heaters, etc.
- Lead service line replacement is a one-time cost outweighed by benefits by over 14-fold.³

Chicago lead in water issues

- Chicago has more lead service lines (LSLs) than any city (over 400,000), but the current timeline for replacement of 50+ years will mean more generations of lead poisoned kids.⁴ Chicago has inflated LSL replacement costs largely due to one-off costs and many self-inflicted inefficiencies and impediments.⁵
- If low-income families and landlords are required to pay for LSL replacement, they cannot/will not have their LSLs replaced, exacerbating environmental injustices.

Newark lead in drinking water experience

- Lead in school and household drinking water plagued Newark for years. School teachers and parents demanded action due to concerns about the impacts on school children's ability to learn.
- After denying it had a lead in water problem for years, the city faced extensive pressure from Newark residents, litigation, and press scrutiny. Newark finally admitted it had a problem after EPA ordered it to distribute bottled water.⁶
- When the city finally agreed to replace LSLs, it did so quickly, replacing 23,000 in less than 3 years and creating many new local jobs.⁷
- Initially the city charged individual homeowners/landlords ~\$1000 to replace LSLs, so very few did.⁸ When the city decided to fully fund replacements and to allow any adult resident in the building to approve replacement, the job went quickly.

Washington DC lead in drinking water experience

- DC had a severe lead in water contamination problem first observed in 2001 but downplayed and covered up by the local water utility until 2004, when the problem was uncovered by the Washington Post.⁹ Twenty years later, the city still has not replaced the vast majority of its LSLs.
- DC charged customers for LSL replacement, resulting in: a) a very low rate of full LSL replacement (in 2003-2006, when the city was still trying to resolve its contamination crisis, only 18% of the utility's 10,000+ replacements were full); and b) what a published peer-reviewed journal article found caused, in 2009-2018, a disproportionate impact on lower-income parts of the city with predominantly African-American residents.¹⁰
- DC's and other utilities' misleading public education that downplays the presence and impacts of lead in water undermines customer support for out-of-pocket payment of private-side LSL replacement (and, in some cases, for LSL replacement altogether), despite the fact that many customers continue to draw their drinking water from dangerous partially replaced LSLs.

Inflated AWWA/industry cost estimates for LCR/LSLR

- Water utilities and industry groups including the American Water Works Association (AWWA) have recently inflated the predicted costs of LSL replacement. For example, EPA and AWWA said average planned LSL replacement costs were about \$5,000-\$6000 in 2020,¹¹ and Safe Water Engineering, LLC documented similar actual costs through surveys of water utilities.¹²
- But when EPA began to seriously consider requiring universal LSL replacement, AWWA's estimated costs skyrocketed, with exaggerated cost estimates.
- A study evaluating the Washington DC water utility LSLR plan by Safe Water Engineering found that opportunities to reduce costs in all aspects of the program that could save up to \$200 million while replacing an additional 14,000 potential LSLs.¹³
- Recently published research demonstrates that the benefits are greater the sooner LSLs are replaced, even if replacement costs are increased due to reduced planning time.¹⁴

Key improvements needed to LCR

- All LSLs must be replaced at utility expense within 10 years, as has repeatedly been called for by President Biden and Vice President Harris.
- Even AWWA supports full replacement of all LSLs,¹⁵ as do many utilities, states, community groups, scientists and health and environmental organizations.
- A Maximum Contaminant Level (MCL) would cap the allowable level of lead in tap water.
 - If EPA decides an MCL is infeasible, many homes will have lead >> EPA Action Level.
 - Complete LSL replacement is required under the Safe Drinking Water Act if EPA doesn't adopt a Maximum Contaminant Level.
- Monitoring requirements must be strengthened to capture both first draw and fifth draw (levels in the LSLs), as currently required in Michigan.
- The action level for lead must be reduced to 5 ppb.
- Schools and childcares must be protected with rigorous testing, so parents and teachers aren't misled about lead levels. Incentives should be included to get water systems to help schools and childcares install lead filters, which are more cost effective than replacement of lead plumbing, in part because new plumbing still contains lead.

Affordability: already a problem but cannot be used as an excuse for weak, unprotective rules

- Everyone has a right to safe, affordable drinking water. Low-income consumers are not asking for weak rules so that they can be provided more lead-contaminated water; they want health-protective rules but also meaningful water affordability programs.
- LSL replacement is not the biggest driver for utility expenditures: the total need for drinking water infrastructure in next 20 years is from \$625 billion (EPA estimate¹⁶) to more than \$1 trillion (AWWA estimate¹⁷). Some estimates are in the multiple trillions (US Water Alliance estimate.)¹⁸
- There are numerous ways to address water affordability, many of which EPA identified in its February 2023 Clean Water Act Financial Capability Assessment Guidance, and many that have been submitted to EPA and OMB in a recent letter on the LCR from many low-income advocacy, environmental justice, Tribal, environmental and other groups.¹⁹ For example, water rates can be structured to help low-income consumers and low-income water assistance programs can help.
- Michigan is paving the way, requiring utilities to pay for LSL replacement and developing utility industry-supported legislation to address water affordability issues broadly.

NOTES

- ¹ US EPA, Integrated Science Assessment for Lead, 2013, <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=255721>. A new external review draft of an updated Integrated Science Assessment for Lead was recently released in 2023. <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=357282>
- ² Levin R, Schwartz J. “A better cost:benefit analysis yields better and fairer results: EPA’s lead and copper rule revision.” Environ Res. 2023 Jul 15;229:115738. doi: 10.1016/j.envres.2023.115738. Epub 2023 Apr 18. PMID: 37080271.
- ³ Levin, R. Full Lead Pipe Replacement analysis, Harvard T.H. Chan School of Public Health, July 26, 2023; NRDC, “Getting the Lead Out,” 2023 (in press).
- ⁴ Erin McCormick, Aliya Uteuova and Taylor Moore, Revealed: the ‘shocking’ levels of toxic lead in Chicago tap water, The Guardian, September 21, 2022. <https://www.theguardian.com/us-news/2022/sep/21/lead-contamination-chicago-tap-water-revealed>
- ⁵ Monica Eng, Eye-popping lead removal prices, Axios, July 21, 2022. <https://www.axios.com/local/chicago/2022/07/21/eye-popping-lead-removal-prices-chicago>
- ⁶ See, NRDC, Fighting for Safe Drinking Water in Newark, January 26, 2021, <https://www.nrdc.org/resources/fighting-safe-drinking-water-newark#:~:text=Alarmed%20by%20high%20levels%20of,secure%20safe%20drinking%20water%20for>
- ⁷ Testimony of Kareem Adeem, Director, Newark Department of Water and Sewer Utilities, Before the House Energy and Commerce Committee, Subcommittee on the Environment and Climate Change, March 24, 2022, <https://docs.house.gov/meetings/IF/IF18/20220329/114537/HHRG-117-IF18-Wstate-AdeemK-20220329.pdf>
- ⁸ Maureen Cunningham, Echoing Newark: How American Cities Can Replicate Newark’s Success in Replacing Over 23,000 Lead Pipes in Under Three Years, Feb 10, 2022. <https://www.policyinnovation.org/blog/echoing-newark-how-american-cities-can-replicate-newarks-success-in-replacing-over-23000-lead-pipes-in-under-three-years>
- ⁹ NRDC, Lead Coalition Report: Getting The Lead Out? The D.C. Tap Water Crisis One Year Later, January 28, 2005. <https://www.nrdc.org/press-releases/lead-coalition-report>
- ¹⁰ Baehler, K.J.; McGraw, M.; Aquino, M.J.; Heslin, R.; McCormick, L.; Neltner, T. Full Lead Service Line Replacement: A Case Study of Equity in Environmental Remediation. Sustainability 2022, 14, 352. <https://doi.org/10.3390/su14010352>
- ¹¹ See, G. Tracey Mehan, AWWA, Comments on National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions, Docket No. EPA–HQ–OW–2017–0300, Feb. 5, 2020, at p. 117 (citing adjusted EPA average cost of planned LSL replacement as \$4923, and AWWA’s estimate of \$6106.
- ¹² Elin Betanzo, Safe Water Engineering, DECONSTRUCTING THE COST OF LEAD SERVICE LINE REPLACEMENT, October 2022, <https://www.nrdc.org/sites/default/files/2023-07/deconstructing-cost-lead-service-line-replacement-202210.pdf>.
- ¹³ Elin Betanzo and Noah Attal, Safe Water Engineering, LLC. “Independent Verification and Validation of DC Water’s Lead Free DC Lead Service Line Removal Plan: FINAL REPORT, Submitted to Council of the District of Columbia, September 2022. <https://lims.dccouncil.gov/downloads/LIMS/51294/Introduction/RC24-0221-Introduction.pdf?Id=146215>
- ¹⁴ Rhyen, Corwin, George Miller, Elin Betanzo, and Mona Hanna-Attisha. “Removing Michigan’s Lead Water Service Lines: Economic Savings, Health Benefits, And Improved Health Equity.” Health Affairs 42, no. 8 (August 2023): 1162–72. <https://doi.org/10.1377/hlthaff.2022.01594>.
- ¹⁵ AWWA, AWWA Policy Statement on Lead Service Line Management, Jan. 14, 2017, <https://www.awwa.org/Policy-Advocacy/AWWA-Policy-Statements/Lead-Service-Line-Management>
- ¹⁶ EPA, 7th Drinking Water Infrastructure Needs Survey and Assessment, April 2023. https://www.epa.gov/system/files/documents/2023-04/Final_DWINSAs%20Public%20Factsheet%204.4.23.pdf
- ¹⁷ AWWA, Buried No Longer, 2013. <https://www.awwa.org/Portals/0/AWWA/Government/BuriedNoLonger.pdf?ver=2013-03-29-125906-653>
- ¹⁸ US Water Alliance, Value of Water Campaign, Challenge and Opportunity, <https://thevalueofwater.org/the-facts/challenge-and-opportunity>.
- ¹⁹ Letter to Radhika Fox, EPA and Richard Revesz, OMB, OIRA, from more than 70 organizations including NRDC, Re: Safe Drinking Water Act Lead and Copper Rule Improvements; Water Affordability, Sep. 19, 2023.