UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

National Primary Drinking Water Regulations for Lead and Copper: Improvements (LCRI)

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Comments of:

Natural Resources Defense Council | Earthjustice

Campaign for Lead Free Water | Concerned Pastors for Social Action

Flint Rising | Newark Education Workers Caucus

United Parents Against Lead | Water You Fighting For?

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Due to the volume of cited references in these comments, batches of appendices compiling cited references are being submitted separately to Docket No. EPA-HW-OW-2022-0801. Each appendix contains an index of its contents.

Section 1: Executive Summary

On behalf of the undersigned organizations—Natural Resources Defense Council (NRDC), Earthjustice, Campaign for Lead Free Water, Concerned Pastors for Social Action, Flint Rising, Newark Education Workers Caucus (NEW Caucus), United Parents Against Lead, and Water You Fighting For?—and their millions of members and online activists nationwide, we respectfully submit these comments on the U.S. Environmental Protection Agency's (EPA's) proposed Lead and Copper Rule Improvements (LCRI).[1] The signatories of these comments are local and national organizations that have extensive lived experience with lead-in-drinking-water crises in communities across the nation, deep legal and technical expertise in drinking water safety and regulation, and a long history of advocating for strengthened protections against the risks posed by lead in drinking water.

We strongly support EPA's goal to strengthen and simplify its regulation of lead and copper in drinking water. As EPA candidly acknowledges, there is no safe level of lead exposure, and lead that leaches from water pipes and fixtures, especially lead service lines (LSLs), is a major source of dangerous lead exposure nationwide.[2] To address this threat, the Safe Drinking Water Act[3] requires EPA to specify treatment techniques for controlling lead and copper in drinking water that "would prevent known or anticipated adverse effects on the health of persons to the extent feasible."[4] However, for more than three decades, EPA's 1991 Lead and Copper Rule[5] (LCR) has proven to be a porous safety net that allows unsafe levels of lead to persist in America's drinking water systems, resulting in a long string of lead-in-drinking-water crises in cities and towns including Washington, D.C., Flint, Michigan, Newark, New Jersey, Benton Harbor, Michigan, Portland, Oregon, Clarksburg, West Virginia, and many others. Tragically, time and again these crises have fallen hardest on the most vulnerable, particularly children living in lower-wealth communities and communities of color.

EPA's 2021 Lead and Copper Rule Revisions[6] (LCRR) failed to meet the urgency of the moment. As EPA acknowledged later that year, the LCRR left "significant opportunities to further improve upon it to achieve increased protection of communities from lead exposure through drinking water."[7] Accordingly, EPA embarked on its development of the LCRI to "protect public health and fully and equitably meet the requirements of the Safe Drinking Water Act."[8]

We applaud EPA for continuing to work diligently to improve its regulation of lead and copper in drinking water. The proposed LCRI includes many positive changes that will help to

[1] 88 Fed. Reg. 84,878 (Dec. 6, 2023).
[2] *See* 88 Fed. Reg. at 84,879, 84,897.
[3] 42 U.S.C. §§ 300f *et seq*.
[4] *Id.* § 300g-1(b)(7)(A). As discussed later in these comments, EPA could (and should) regulate lead and copper through a maximum contaminant level (MCL), rather than with treatment techniques, but that is not the regulatory approach that EPA has employed since 1991.
[5] 56 Fed. Reg. 26,460 (June 7, 1991).
[6] 86 Fed. Reg. 4198 (Jan. 15, 2021).
[7] 86 Fed. Reg. 71,574, 71,577 (Dec. 17, 2021).
[8] 86 Fed. Reg. at 71,578.

protect public health for decades to come. We strongly support the core structure of the LCRI including EPA's proposals to:

- **Require most water systems to replace lead service lines within 10 years**, including water systems of all sizes;

- **Require water systems to complete inventories of lead service lines**, update their inventories regularly, and verify service lines of unknown materials;

- **Improve tap water sampling** by requiring testing of both the first and fifth liter of water at locations served by a lead service line, which will better characterize the water that has been sitting in the service line; and

- **Reduce the action level for lead** that triggers requirements for water systems to study and implement corrosion control treatment, source water treatment, and public education and outreach.

Nevertheless, the proposed LCRI contains weaknesses, loopholes, and shortcomings that we fear may imperil the LCRI's ability to achieve President Biden's and EPA's laudable goals to reduce lead exposure in drinking water fully, quickly, and equitably. In the final rule, we urge EPA to make a variety of changes to strengthen and simplify the rule further and to help ensure that its implementation will live up to its promise. To safeguard the LCRI's success, it is essential that EPA, at a minimum:

- **Close loopholes that will allow many lead service lines to be left in place indefinitely**. As proposed, the LCRI would allow water systems to leave lead service lines in use if the system asserts that it lacks access to the full service line for any reason, including because the property owner is unable or unwilling to pay a portion of the replacement cost. The rule should presume that water systems control their service lines, as EPA has concluded previously. The final LCRI must require water systems to provide full lead service line replacements at no direct cost to the customer and to assert "control" over and take responsibility for the replacement of all lead service lines. The LCRI should require that primacy states ensure that their rules will include these measures. Without these changes, the LCRI will fail to achieve full, equitable replacement of lead service lines, and risks exacerbating environmental injustices by disproportionately leaving lead service lines in place in lower-wealth communities and communities of color.

- **Close loopholes that will allow some water systems up to four or five decades to replace lead service lines**. As proposed, the LCRI would automatically give extensions of the ten-year deadline for lead service line replacements (LSLRs) to water systems in many hundreds or thousands of communities nationwide. The final LCRI must eliminate, or at a minimum narrow and shorten, any extensions to ensure that lead service lines are replaced as quickly as possible, and that extensions of time are allowed only in truly exceptional circumstances. The communities affected by any proposed extensions should get notice and an opportunity for comment and a local hearing so their views can be considered before any lengthy extensions are approved.

- **Adopt a more stringent standard for lead action level exceedances by lowering the lead action level to no more than 5 ppb and increasing the percentile used to assess compliance**. Although the LCRI's proposed lead action level of 10 ppb is a substantial improvement, it is not sufficient. There is no safe level of lead in drinking water, and EPA's own evidence demonstrates that a lower action level is feasible. A lead action level of 5 ppb or lower is essential for triggering health-protective actions, including corrosion control treatment and public education, in all water systems where tap sampling finds unsafe lead levels. EPA also must reconsider the continued use of a 90th percentile for calculating compliance with the action level. This allows up to 10 percent of homes at highest risk to suffer from contamination exceeding the action level—often by many-fold—without violating the rule. EPA should assess compliance with the lead and copper action levels using a higher percentile.

- **Prioritize filter distribution following an action level exceedance**. As proposed, the LCRI would require water systems to make available filters certified to reduce lead only after three lead action level exceedances within a five-year period. Providing filters is the fastest, most health-protective immediate action available after an action level exceedance. The final LCRI must require water systems to deliver certified filter and replacement cartridges to all customers, at no direct charge to the customer, after any action level exceedance. Filter provision is essential to protect public health in the near-term after any action level exceedance. It also will spur water systems' desire to be relieved of filter-provision obligations, providing a strong incentive for water systems to work swiftly and diligently to identify and implement effective, optimized corrosion control treatments and to fully remove lead service lines as quickly as possible.

- **Further improve public education and outreach requirements**. Although the LCRI includes some improvements in public education and the mandatory language on lead health effects, the final rule must do more. Effective public education about lead in drinking water is a critical component of the rule and, in many circumstances, is the primary mechanism to protect public health, such as in the years following an action level exceedance and before longer-term corrosion control or other infrastructure changes can be implemented. The final rule must require public education materials to more clearly explain the risks of lead in drinking water—even in the absence of an action level exceedance—and how customers can proactively protect themselves using point of use filters certified to remove lead. It also must expand water systems' outreach obligations, particularly to compel water systems to provide point-of-use filters at no direct cost to all customers after an action level exceedance.

- **Better protect children in schools and childcare facilities**. As proposed, the LCRI would largely maintain the LCRR's weak provisions for testing drinking water at schools and childcare facilities. Children are uniquely vulnerable to the pernicious effects of chronic lead exposures. In the final LCRI, EPA must require water systems to choose between providing and helping to maintain filtration stations at schools and childcares, or providing robust regular testing and public reporting of lead levels in schools' and childcare facilities' drinking water. Testing requirements should be relaxed only if a water system installs lead-removing filtration stations to ensure that children's drinking water is safe.

- **Strengthen and simplify corrosion control treatment requirements**. As proposed, the LCRI both perpetuates and creates numerous loopholes that allow water systems to avoid studying and installing effective, optimized corrosion control treatment to prevent lead from leaching into drinking water. It also fails to require water systems to test corrosion control treatments that are based on the most current and best available science. In the final rule, EPA must strengthen and simplify these provisions to remove unnecessary loopholes and require more water systems to study and install optimized corrosion control treatments.

- **Strengthen enforcement and reporting**. As proposed, the LCRI fails to address widely identified shortcomings in the LCR's mechanisms (or lack thereof) to ensure compliance, facilitate timely and transparent data reporting, and streamline enforcement of the rule. The final rule must incorporate changes that promote accurate, transparent data submission and reporting and prevent continued rampant noncompliance with the rule.

- **Require compliance with the LCRI sooner**. As proposed, the LCRI's critical public health protections would not go into effect until three years after the rule is promulgated. Consistent with the SDWA, EPA should determine that it is "practicable" for most or all of the rule to go into effect no later than one year after promulgation. A faster compliance schedule would maximize the public health benefits from the LCRI and would also align better with the federal funding sources that are available now to assist water systems with lead service line replacements and other safety improvements.

- **Ensure environmental justice.** The proposed LCRI includes many provisions that raise serious environmental justice concerns. The final rule must require water systems to pay for full LSL replacement. Homeowners of color and those with low wealth often cannot afford to pay, and landlords in low-wealth communities and communities of color are likely to refuse to pay these costs. As a result, LSLs at these locations will remain in use, exacerbating the already serious inequities in lead exposure of these communities. The proposed lead action level, while an improvement, combined with the continued use of a 90th percentile to determine compliance, is not health protective. This is particularly true for Black children who have the highest blood lead levels. Violations and inadequate enforcement of drinking water standards disproportionately hit communities of color and of low wealth, and the LCR is infamous for lack of water systems' compliance. Because lead is a greater threat to environmental justice communities, noncompliance with the regulations again disproportionately impacts those communities. The final rule should include direct and transparent electronic reporting of monitoring and violations data, as well as stronger incentives for compliance, to help address these serious environmental injustices.

These urgently needed changes, and many others, are discussed in greater detail below. The remainder of our comments are organized topically, with deep dives into the nuances of the proposed LCRI, detailed proposals for how EPA can strengthen and streamline it, and responses to EPA's specific requests for comment.

* * * * *

At its core, the LCRI rests on a solid conceptual foundation: eliminate lead service lines and strengthen and simplify the treatment techniques of public education and corrosion control treatment that, along with source water treatment, will be the pillars of lead and copper control after all lead service lines are gone. Done right, it can create a clean break from more than 30 years of ineffective regulation of lead and copper in drinking water that has failed over and over to protect public health.

But, as proposed, the LCRI is riddled with provisions rooted in overly optimistic expectations that all water systems and states will be eager partners seeking to achieve EPA's goals and may even choose to do more than the minimum regulatory requirements. There are many states and water systems that take seriously the problem of lead in drinking water, will do their utmost to comply in good faith, and are already working hard to address this crisis. But the ultimate purpose of the LCRI must be to compel action by the laggards. EPA must write the final LCRI with an eye toward incenting and forcing necessary, health-protective actions by water systems and states that are averse to change, unpersuaded that lead in drinking water is a serious concern for them, and prefer to direct their resources to other priorities. The final LCRI's provisions must have in mind the water systems and states that will, first and foremost, prioritize doing the bare minimum they can get away with to reduce costs and minimize burdens. To realize the LCRI's full potential, EPA must eliminate unnecessary loopholes that would allow water systems and states to dodge the LCRI's core requirements, and EPA must strengthen the remaining provisions to fulfill SDWA's mandate to "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[9]

We look forward to working with EPA to ensure that every person—no matter their race, income, or zip code—enjoys the right to safe, affordable, lead-free drinking water.

[9] 42 U.S.C. § 300g-1(b)(7)(A).

Section 2: EPA Should Require Full Replacement Of 100% of Lead Service Lines, Irrespective of Ownership and Paid for by Water Systems

A. Overview

We strongly support President Biden's, Vice President Harris's, and EPA Administrator Regan's stated goal of the LCRI to replace 100 percent of lead service lines (LSLs) within 10 years.[1] As EPA notes, where present, LSLs are the predominant source of lead in drinking water.[2] Fully removing these pipes is the most effective and permanent method of reducing their contribution to lead in tap water. The monetizable health benefits of removing LSLs also outweigh the costs by manyfold—by our estimate at least 14-fold over 35 years.[3]

While we vigorously support the 10-year goal, unfortunately several provisions in the proposal would undermine achievement of that objective. Specifically, we are deeply concerned about the following key provisions of the proposal that will serve as significant impediments to achieving the goal of removing 100% of lead service lines in 10 years. They also will exacerbate the already serious environmental justice problems posed by lead in drinking water, by making it likely that wealthier, predominantly white communities will get their LSLs replaced, while lower-wealth homeowners and tenants who are disproportionately people of color will be far less likely to have their lead pipes removed.[4] These issues are discussed in more detail after this overview:

- **Systems with large numbers of LSLs get long extensions.** The proposal would allow systems that would have to replace more than 10,000 LSLs per year under a 10-year deadline (i.e. systems with >100,000 LSLs, of which EPA says there are about four, including Chicago) to only replace 10,000 LSLs/year. The proposal also requests comment on allowing as few as 8,000 LSL replacements (LSLRs) per year. That means, for example, that Chicago would get 44.6 to 55.8 years to complete its LSLRs. The proposal says states would be required to determine whether faster LSLR would be feasible, but there is no accountability to ensure this. It is entirely feasible to remove more than 10,000 LSLs per year (Newark was removing 2,200 a month and there is no reason much larger cities cannot do far better) and extending the time frame even longer by going to a cap of 8,000 per year is even more clearly unnecessary and dangerous. **This is a serious deficiency in the proposal as it applies to the handful of big systems with**

[1] The White House, Fact Sheet: Biden-Harris Administration Announces New Action to Protect Communities from Lead Exposure (Nov. 30, 2023), *available at* https://www.whitehouse.gov/briefing-room/statements-releases/2023/11/30/fact-sheet-biden-harris-administration-announces-new-action-to-protect-communities-from-lead-exposure/; The White House, Fact Sheet: The Biden-Harris Lead Pipe and Paint Action Plan (Dec. 16, 2021), *available at* https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/16/fact-sheet-the-biden-harris-lead-pipe-and-paint-action-plan/.

[2] National Primary Drinking Water Regulations for Lead and Copper: Improvements (LCRI): Proposed Rule, 88 Fed. Reg. 84,878 at 84,909 (Dec. 6, 2023).

[3] NRDC, Getting the Lead Out: Removing Lead Pipes Would Yield Hundreds of Billions of Dollars in Health Benefits (Oct. 2023), p. 8, *available at* https://www.nrdc.org/sites/default/files/2023-10/getting-lead-out-health-benefits-ib.pdf. *See,* section 12 of these comments for further discussion of the costs and benefits of reducing lead levels in drinking water and LSL removal.

[4] *See also,* section 15 of these comments for further discussion of the environmental justice concerns with the proposed LCRI,

significant numbers of LSLs like Chicago, Cleveland, New York City, and possibly Houston.

- **Systems with a high concentration of LSLs can get extensions.** The LCRI also allows states to approve extensions for systems exceeding 0.039 replacements per household per year. In other words, for example, if a system serves 50,000 households and would have to complete >1,950 LSLRs per year, they could get an extension. Thus, if that system had 35,000 LSLs, it would get 18 years to replace them. EPA projects that about 700 to over 2,100 systems (1.4 to 4.4 percent of all systems) would exceed this threshold. **This is a significant deficiency that will hit hardest those communities with the highest concentrations of lead pipes—the very communities, often environmental justice communities, that are most important to address.**

- **In addition, more extensions are available, particularly for small systems, further delaying important health protections.** EPA notes in the LCRI proposal that the substantive treatment technique requirements do not go into effect until 3 years after promulgation and may be extended by states another 2 years.[5] In addition, primacy states can extend the deadlines up to six more years for systems serving 3,300 people or fewer.[6] Taken together with other extensions, this means that some systems will not have to complete LSL replacement for decades after promulgation.

- **Systems are also not required or replace LSLs that they claim they do not "control," narrowly defined as utilities having legal or physical access to such pipes.** The LCRI excuses utilities from having to replace LSLs if they don't "control" them. The proposal defines control far more narrowly than EPA defined that term previously in the 1991 LCR, which included a rebuttable presumption that utilities control their service lines. Indeed, water systems can always shut off water to any service line, the ultimate measure of control. As EPA found in 1991, systems generally retain the authority to set standards for construction, repair, or maintenance of the line, have authority to replace, repair, or maintain the service line, or own the line. Furthermore, most utilities either required or installed lead service lines, or required utility approval of the material used in service lines and strongly encouraged use of lead.[7] An additional concern is that under the proposal, if a property owner cannot be located or fails to respond to four attempts at reaching them for approval of a LSLR, the utility is excused from having to replace that LSL. We have seen in Flint, Newark and elsewhere that often property owners, and absentee landlords in particular, cannot be located or persuaded to agree to allow access to the property for LSLR. The proposal would excuse the utility from replacing those lines, rather than taking an approach such as that used in Newark and Benton Harbor, where all LSLs were required to be replaced, and the property owner was given the choice of either completing the LSLR themselves by a specified date, or was presumed to agree to having the utility have access to complete the LSLR at no cost to the property

[5] 88 Fed. Reg. at 84,897.
[6] Id.
[7] See Richard Rabin, The Lead Industry and Lead Water Pipes "A MODEST CAMPAIGN," Am. J. of Pub. Health Vol. 98 Issue 9 at 1585 (2008), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2509614/

owner, with access granted by any building occupant. The LCRI should require such an arrangement.

- **Systems are not required to pay for full LSL replacement, so lead pipes used by low-wealth families and renters are unlikely to be replaced.** EPA is *not* requiring water systems to cover the full cost of LSLR situated under private property. This is a major concern with substantial equity implications. EPA says it has worries about its legal authority to require this. However, as discussed below, we disagree and believe EPA has clear authority under the SDWA to require utilities to pay for full replacement of LSLs.

B. Statutory Provisions Regarding Treatment Techniques and Feasibility

The Administrator may promulgate a national primary drinking water regulation that requires the use of a treatment technique in lieu of establishing a maximum contaminant level (MCL) only if the Administrator makes a finding that "it is not economically or technologically feasible to ascertain the level of the contaminant."[8] As discussed below in section 11, we do not believe that EPA has made an adequately justified determination that it is not economically or technically feasible to ascertain the level of lead. Therefore, EPA should establish an MCL for lead at the tap. However, if the Administrator were to appropriately make such a finding, any treatment technique must "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[9]

The SDWA defines feasible as "feasible with the use of the best technology, treatment techniques and other means which the Administrator finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration)."[10] As EPA has repeatedly recognized for decades, including in the LCRI,[11] this provision was clarified in the legislative history of the Act, which explained that in using the phrase "feasible . . . (taking cost into consideration)," the Congress "intends that the Administrator's determination of what methods are generally available (taking cost into account) is to be based on what may reasonably be afforded by large metropolitan or regional public water systems."[12] And as the agency has correctly noted in the LCRI,[13] the D.C. Circuit in *City of Portland v. EPA*[14] upheld EPA's treatment technique for Cryptosporidium and the Agency's interpretation that "'feasible' means technically possible and affordable and *does not include a cost/benefit determination*."[15]

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[8] 42 U.S.C. § 300g-1(b)(7)(A). As discussed in the following section, the statute further provides that in certain circumstances, water systems may not have to comply with the treatment technique, noting that the agency's rules "shall specify each treatment technique known to the Administrator which meets the requirements of this paragraph, but the Administrator may grant a variance from any specified treatment technique in accordance with section 300g–4(a)(3) of this title." Id.

[9] Id.

[10] 42 U.S.C. § 300g-1(b)(4)(D).

[11] 88 Fed. Reg. 84,978, at 84,901.

[12] H.R. Rep. 93–1185 (1974), reprinted in 1974 U.S.C.C.A.N. 6454, 6471. *See also,* S. Rep. No. 104–169, at 3 (1995) (feasibility is based on best available technology affordable to "large" systems).

[13] 88 Fed. Reg. at 84,901.

[14] 507 F.3d 706 (D.C. Cir. 2007).

[15] 88 Fed. Reg. at 84,901 (emphasis added).

Neither the statute nor its legislative history requires that EPA must find that a treatment technique is feasible for *every single system in the nation.* Rather, the statute provides that EPA's "regulations shall specify each treatment technique known to the Administrator which meets the requirements of this paragraph...."[16] Many large water systems already have removed their lead service lines in less than a decade, and it has been demonstrated to be technically possible and affordable already in multiple cities. Moreover, **EPA has found that lead service line replacement within 10 years is feasible for more than 96 percent of water systems.[17] Therefore, it is feasible to remove all lead service lines in 10 years.**

EPA's original 1991 LCR required LSL replacement for systems exceeding the lead action level at a rate of 7 percent per year (or to be done in about 14 years), so clearly the agency has held the position for decades that replacement at that rate is feasible.[18] **While we oppose any extensions beyond 10 years, there certainly is no justification for backsliding from the original LCR's outside time frame; any extension beyond 7 percent per year for systems exceeding the action level would constitute an unlawful backsliding prohibited by the SDWA.**[19]

Thus, under the SDWA,[20] as clarified by the legislative history, decades of EPA administrative history, and judicial interpretation, the treatment technique for lead must prevent known or anticipated adverse effects on the health of persons to the extent that is technically possible and affordable for large public water systems. Luckily, no guesswork is required in the case of LSL replacement. There are numerous large public water systems that have completed lead service line replacement within 10 years or less, and EPA has found that 96 percent or more of water systems can achieve this requirement. Replacement of all LSLs in 10 years is necessary to reduce lead levels and prevent known or anticipated adverse health effects and is not only technically feasible but also affordable.

C. LSL Replacement in 10 Years or Less is Necessary and Feasible

If EPA issues a treatment technique in the final rule, it must include a universal mandate for full lead service line replacement, independent of any finding that an action level has been exceeded. We strongly agree with the **agency's finding that "mandatory service line replacement programs initiated by 90th percentile lead levels are now known not to be sufficient to prevent known or anticipated adverse health effects from lead exposure in**

[16] 42 U.S.C. § 300g-1(b)(7)(A). The statute does provide that in certain limited circumstances, the Administrator or primacy state may grant a variance from any specified treatment technique in accordance with 42 U.S.C. 300g–4(a)(3). Additionally, systems that contend that they cannot comply can in certain cases apply for an exemption under 42 U.S.C. §300g-5. As discussed in the section on effective dates, we do not believe exemptions can be granted for LSLR, as prolonged exposure to lead service lines is per se an unreasonable risk to health.
[17] 88 Fed. Reg. at 84,913.
[18] 56 Fed. Reg. at 26,552 (40 C.F.R. 141. 84(b)).
[19] 42 U.S.C. 300g-1(b)(9) ("Any revision of a national primary drinking water regulation...shall maintain, or provide for greater, protection of the health of persons.")
[20] 42 U.S.C. § 300g-1(b)(7)(A).

drinking water to the extent feasible."[21] The agency has made a compelling case for the need for a universal LSL replacement requirement, including finding that:

> Over the 30 years of implementing the LCR, EPA has found that the sampling and process steps of that rule created implementation uncertainties, difficulties, and errors that, in some cases, resulted in significant lead exposures. Improper implementation of the sampling and corrosion control treatment process has been the cause, or one of the primary causes, of significant lead exposures in multiple water systems. Moreover, disturbances of LSLs can potentially cause lead particulates to be released into drinking water, causing higher lead levels at those sites. Although the proposed LCRI includes risk mitigation requirements for water systems if they disturb the service line, other utilities or heavy traffic may also disturb the line [citations omitted], events which would be unknown to the water system and not subject to risk mitigation steps. In addition, particulate lead can be released sporadically (i.e., not associated with a disturbance), even in systems that have OCCT and have measured generally low lead levels. [citation omitted]. Research has also shown that lead exposure is not fully eliminated by CCT due to a variety of factors including individual home and service line characteristics, water quality, water use (including water stagnation following extended periods without water use), treatment, infrastructure, and disturbances to service lines (e.g., meter installation, road repair, and freezing of the ground that can have unintended and unpredictable effects), causing lead releases in the water when LSLs or GRR service lines are present [citations omitted]. Examples of isolated cases of lead poisoning in children have been documented and attributed to drinking water in communities whose systemwide lead levels remained below the action level of 0.015 mg/L [citations omitted].[22]

Thus, a mandatory LSL replacement regime is necessary, because the regulatory scheme under both the original 1991 LCR and the 2021 LCRR are simply inadequate action "to prevent known or anticipated adverse health effects from lead exposure in drinking water to the extent feasible," as required by SDWA section 1412(b)(7)(A).

As noted earlier, the statutory test of whether a treatment technique such as lead service line replacement within 10 years or less is feasible is whether a large municipal water system can technically achieve this action affordably.[23] There are abundant examples of such systems that have completed such actions in EPA's record and available elsewhere, and at least two states (New Jersey and Rhode Island) have mandated lead service line replacement within 10 years, making it clear that this is feasible. As established in Tables 1 and 2, many large and small public water systems have done so, generally voluntarily without being required to do so by regulation.

That a 10-year LSL replacement requirement is feasible also is made clear by the agency's admission that "a 10-year replacement deadline is feasible for 96 to 99 percent of CWSs nationwide."[24] Nowhere in the statute or the legislative history is it required that EPA must find that a treatment technique is feasible for *every single system in the nation.* Thus, by

[21] 88 Fed. Reg. at 84,912.
[22] 88 Fed. Reg. at 84,911.
[23] See 42 U.S.C. § 300g–1 (b)(4)(D) (definition of feasible).
[24] 88 Fed. Reg. at 84,913.

definition, lead service line replacement within 10 years or less (i.e. a 10 percent annual replacement rate) is feasible under the statute and must be included in the LCRI by law.

As shown in Table 1 below, an EPA-conducted analysis in the record for the LCRR shows that a 10-year mandate for all LSL replacement—i.e. a 10 percent annual replacement rate—is entirely feasible. According to this analysis, large water systems (serving a population of more than 100,000) conducting voluntary full lead service line replacement did so at an *average* annual rate of 11.5 percent where the utility claims it does not own the full LSL, and 21.5 percent where the utility owns the full LSL.[25] Thus, a 10-year mandate with a 10 percent annual replacement rate for LSLs is feasible for large systems.

Table 1
EPA Analysis of Average Lead Service Line Replacement (LSLR) Rates by Size of Water Systems and Type of LSLR Replacement Program

Type of LSLR Program	Population Served		
	< 10,000	10,000 - 100,000	> 100,000
Bin 1: LSLs only replaced when found during routine construction work (not relevant if LSLR is required on specific schedule)		7.3%	5.3%
Bin 2: LSLs replaced on aggressive schedule, utility does not own private side of LSL. Funding is from loans or rates or funding does not cover entire private side cost.	33.3%	13.2%	11.5%
Bin 3: LSLS replaced on aggressive schedule, utility owns private side of LSL or there are few LSLs. Funding is in the form of grants and covers entire private side cost.		73.1%	21.5%

Source: EPA LSLR Rates. 2019 EPA Unpublished Raw Data, Nov 13, 2019 (tab 4, table 1b) EPA-HQ-OW-2017-0300-0699

Similarly, as highlighted in yellow in Table 1, the average LSL replacement rate for systems serving 10,000 to 100,000 people also was more than 10 percent per year, showing that such a requirement is feasible.

Furthermore, as noted in Table 2, after further factfinding EPA determined that dozens of large and small water systems have fully replaced lead service lines at a rate faster than ten percent per year. While some other systems took longer, it is important to remember that these systems were undertaking LSL replacement programs without a regulatory requirement to do so within 10 years.[26] With a regulatory mandate to complete LSLR within a decade, these data

[25] EPA, LSLR Rates. 2019 EPA Unpublished Raw Data, Regulations.gov, EPA-HQ-OW-2017-0300-0699, at tab 4 "Summary Tables". (Table 1b)(average replacement rates for systems serving more than 100,000 people).
[26] Neither the NJ nor the RI 10-year LSL replacement laws were in effect yet, and the 1991 LCR 7 percent replacement per year requirement for systems with lead action level exceedances was generally not the driving force for these replacements since few if any were documented to have such ongoing exceedances, and in any event the LCR did not require 10 percent replacement per year.

show that a 10-year mandate is "feasible" for large public water systems and thus under the statute must be required by the rule.[27]

Table 2
EPA-LISTED SYSTEMS MEETING OR EXCEEDING
10-YEAR LEAD SERVICE LINE REPLACEMENT GOAL (10%/YEAR)
From EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 3-6 (Ex. 1)

City	State	Population	Size Category	Total Number of LSL/ GRR	Duration of LSLR Program	Avg. # Replaced Per Year (% of Total LSLs and GRRs)
Fort Worth (Fort Worth)	TX	853,762	Large	1,790	2016 to 2021	233 (13%)
Central Arkansas Water (Sweeney, 2020)	AR	330,667	Large	175	2016-2017	115 (66%)
Saskatoon (City of Saskatoon)	Can.	313,000	Large	4,582	2017 to 2022	488 (11%)
Newark (City of Newark)	NJ	294,274	Large	23,189	2019 to 2022	7,730 (33%)
Grand Rapids (City of Grand Rapids, 2022)	MI	273,005	Large	1,608	2021-2022	304 (19%)
Spokane (Feist 2018)	WA	244,817	Large	486	2016 to 2018	162 (33%)
Sioux Falls (Kelley, 2017)	SD	198,524	Large	230	2016-2017 (32 months)	115 (50%)
York (The York Water Company, 2023)	PA	197,177	Large	2,300	2017-2021	380 (17%)
Green Bay (Green Bay Water)	WI	107,395	Large	2,028	Jan 2016 to Sep 2020	357 (18%)

[27] 42 U.S.C. §300g-1(b)(7)(A).

City	State	Population	Size Category	Total Number of LSL/ GRR	Duration of LSLR Program	Avg. # Replaced Per Year (% of Total LSLs and GRRs)
Quincy (MWRA, 2023)	MA	101,636	Large	285	April 2017-September 2018	206 (72%)
Flint (City of Flint)	MI	98,310	Large	12,035	2016 to 2022	1,946 (16%)
Newton (MWRA, 2023)	MA	89,103	Large	433	2017-2019	144 (33%)
Somerville (City of Somerville)	MA	81,045	Large	449	2021 - 2022	86 (19%)
Revere (City of Revere, 2023)	MA	59,075	Large	350	2019-2021	83 (24%)
Bozeman (City of Bozeman, 2020)	MT	56,000	Large	170	2016-2019	35 (20%)
Bloomfield (Bloomfield Water Department, 2021)	NJ	47,315	Medium	500	2018 - 2021	130 (26%)
Marlborough (MWRA, 2023)	MA	38,499	Medium	1,350	May 2018 - Sept 2018	176 (13%)
Galesburg (IEPA, 2023)	IL	31,745	Medium	3,500	2016 to 2023	530 (15%)
Village of Montgomery	IL	28,956	Medium	106	Fall 2019 to	106 (100%)
Norwood (MWRA, 2023)	MA	28,284	Medium	200	2004-2008	40 (20%)
Winchester (MWRA, 2023)	MA	22,800	Medium	21	2017 to 2019	7 (33%)

City	State	Population	Size Category	Total Number of LSL/ GRR	Duration of LSLR Program	Avg. # Replaced Per Year (% of Total LSLs and GRRs)
Birmingham (City of Birmingham)	MI	20,472	Medium	730	2020 to 2022	182 (25%)
Frankfort (IEPA, 2023)	IL	20,296	Medium	82	2021-2022	41 (50%)
Menasha (Menasha Utilities, 2023)	WI	14,792	Medium	636	2017 to 2023	106 (20%)
Stoughton (City of Stoughton Utilities Committee, 2022)	WI	13,078	Medium	700	2021	700 (100%)
Mayville (City of Stoughton Utilities Committee, 2022)	WI	5,112	Medium	220	2021	220 (100%)

These EPA-generated data demonstrate that a 10-year LSL replacement requirement is feasible. This is reinforced by the agency's admission that "a 10-year replacement deadline is feasible for 96 to 99 percent of CWSs nationwide."[28]

If EPA determines that there truly is a very small percentage of systems that may not be able to meet the treatment technique requirements, this can be dealt with through the enforcement process.[29] If the agency chooses to allow extensions beyond 10 years in any case,

[28] 88 Fed. Reg. at 84,913.

[29] Negotiated consent decrees allowing extensions of time should be subject to public comment. *See*, for example, Department of Justice, Proposed Consent Decrees (requesting public comment on proposed EPA consent decrees including enforcement cases) https://www.justice.gov/enrd/consent-decrees; EPA, Proposed Consent Decrees and Draft Settlement Agreements (soliciting public comment on settlement of cases filed against EPA) https://www.epa.gov/ogc/proposed-consent-decrees-and-draft-settlement-agreements; Michael Regan, EPA Administrator, "Consent Decrees and Settlement Agreements to Resolve Environmental Claims Against the Agency." March 18, 2022 (requiring proposed settlements of claims against EPA to be made available for public

which as noted we believe is unnecessary and unlawful, at a minimum they should not be automatic under the rule. They should be governed by a reasonable cap on allowed time (certainly not decades) and should only be approved on a case-by-case basis after public notice and a local public hearing held with ample opportunity for affected residents to express their views on a possible extension. This is a minimum protection, particularly for environmental justice communities that may be especially hard hit by the impacts of any extensions of the LSL replacement requirements. We note, for example, that in Illinois,[30] New York City,[31] and Washington D.C,[32] studies have indicated that LSLs or LSLR projects can disproportionately affect communities of color, and thus automatic extensions of the sort proposed in the LCRI would disproportionately harm these communities without providing them any opportunity to provide comment on the issue.[33]

Moreover, as briefly noted earlier, EPA's original 1991 LCR required LSL replacement for systems exceeding the lead action level at a rate of 7 percent per year (i.e. to be completed in about 14 years).[34] The agency has thus held the position for more than 30 years that replacement at that rate is feasible. So, while we oppose any extensions beyond 10 years, the LCRI certainly should not allow backsliding from the original LCR's outside time frame of 14 years. Any extension beyond the 7 percent per year requirement for systems exceeding the action level would constitute an unlawful backsliding prohibited by the SDWA.[35]

In sum, EPA should adopt a mandatory 10-year full LSL replacement requirement (which as noted below should be paid for by the water utility.) Such a deadline is, according to the agency's findings, readily feasible for virtually all water systems.

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review and comment for at least 30 days unless a different period of time is required by law). https://www.epa.gov/system/files/documents/2022-03/ogc-22-000-2698_0.pdf The DOJ and EPA practice of soliciting public comment on consent decrees in enforcement and defensive cases could and should be applied to any consent decrees extending timelines for LSL replacement.

[30] Justin Williams, Data Points: the environmental injustice of lead lines in Illinois, Nov. 10, 2020, *available at* https://www.metroplanning.org/news/9960/Data-Points-the-environmental-injustice-of-lead-lines-in-Illinois.

[31] Columbia University, Mailman School of Public Health, Lead Service Lines in NYC Disproportionately Impact Hispanic/Latino Communities and Children Already At Risk, Aug. 30, 2023, *available at* https://www.publichealth.columbia.edu/news/lead-service-lines-nyc-disproportionately-impact-hispanic-latino-communities-children-already-risk-lead-exposure; Nigra AE, Lieberman-Cribbin W, Bostick BC, Chillrud SN, Carrión D. Geospatial Assessment of Racial/Ethnic Composition, Social Vulnerability, and Lead Water Service Lines in New York City. Environ Health Perspect. 2023 Aug;131(8):87015. doi: 10.1289/EHP12276. Epub 2023 Aug 30. PMID: 37646509; PMCID: PMC10467360.

[32] Baehler KJ, McGraw M, Aquino MJ, Heslin R, McCormick L, Neltner T. Full Lead Service Line Replacement: A Case Study of Equity in Environmental Remediation. Sustainability. 2022; 14(1):352. *available at* https://doi.org/10.3390/su14010352.

[33] See also section 15 of these comments regarding the environmental justice implications of the proposed LCRI and of the LSL replacement requirements.

[34] 56 Fed. Reg. at 26,552, 40 C.F.R. §141.84(b).

[35] 42 U.S.C. 300g-1(b)(9)("Any revision of a national primary drinking water regulation ... shall maintain, or provide for greater, protection of the health of persons.").

i. The LCRI cannot authorize extensions beyond 10 years for systems that would be required to remove 8,000 or 10,000 LSLs per year

Under the LCRI proposal, EPA says that about six to seven systems with large numbers of LSLs could get long extensions beyond the 10-year deadline.[36] As highlighted in Table 3 below, some systems would be given additional decades to comply because they would have to replace from 8,000 to 10,000 or more lead service lines per year if the 10-year deadline applied to them, with Chicago as an extreme example receiving nearly six decades to comply. EPA refers to this extension as a "technical possibility deferral,"[37] based upon the implied contention that it would be technically impossible for this handful of systems to comply within 10 years. The agency also proposes a second extension program that it calls an "affordability deferral,"[38] applicable to one to four percent of water systems, which means hundreds or possibly thousands of systems would be eligible.[39] This second program is discussed in the following section of these comments.

Both extensions are unnecessary and unlawful. The SDWA requires the treatment technique to "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[40] As noted above, EPA acknowledges that removing all lead service lines within 10 years is feasible for more than 96 percent of water systems, and the Act does not authorize EPA to carve out a regulatory exclusion for hundreds or thousands of systems. This is particularly the case because the systems that would receive regulatory extensions are likely to be those with the biggest lead pipe problems. The extensions would allow more generations of Americans to continue to be exposed to toxic lead in their water with no legal consequence. In addition, since they would be automatically granted by regulation, there would be no local hearings or opportunities to weigh in for community members who are most directly affected and whose children and vulnerable family members could exposed to high lead levels, potentially for decades.

These extensions also run contrary to the goals of the lead service line replacement program. They would allow the very systems posing the most significant health risks to continue threatening the health of their customers with lead-contaminated water for up to several decades.

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[36] 88 Fed. Reg. at 84,914.
[37] EPA, Technical Support Document for the Proposed Lead and Copper Rule Improvements, 2023, at 15 (Exhibit 7: Deadlines for systems eligible for the technical possibility deferral compared to their affordability deferral status), *available at* https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0709
[38] Ibid.
[39] Ibid; see also LCRI, 88 Fed. Reg. at 84,914 ("663 to 2,134 systems (1.3 to 4.3 percent of all systems) would . . . be eligible for the proposed deferred replacement deadline").
[40] 42 U.S.C. § 300g-1(b)(7)(A).

Table 3. EPA's Proposed deadlines for systems eligible for an extension based on the number of LSLs vs. an extension based on their per household rate of replacement. Systems could choose the longer of the two deadlines.

Source: EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 15 (Ex. 7)

System	Population	Estimated Number of LSLs or GRRs*	Replacements per Household per Year	Deadline Based on Per-Household Rate	Deadline Using 10,000 Threshold	Deadline Using 8,000 Threshold
Chicago	2,700,000	446,489	0.042	10.7 years	44.6 years	55.8 years
Houston	2,202,531	331,689	0.038	N/A	33.1 years	41.5 years
Cleveland	1,308,955	185,409	0.036	N/A	18.5 years	23.2 years
New York City	8,271,000	137,542	0.004	N/A	13.8 years	17.2 years
North Texas MWD	1,835,456	95,558	0.013	N/A	N/A	11.9 years
Detroit	713,777	84,616	0.030	N/A	N/A	10.6 years
Wichita	395,699	80,612	0.051	13.2 years	N/A	10.1 years

* "GRR" is a service line that is galvanized requiring replacement because it is now or previously was downstream of a lead pipe

Under the proposal, systems that would have to replace more than 10,000 LSLs per year under a 10-year deadline (i.e. systems with >100,000 LSLs, of which EPA says there are about four, including Chicago, Houston, Cleveland, and New York City) will have to replace only 10,000 LSLs/year.[41] The proposal also requests comment on allowing as few as 8,000 LSL replacements (LSLRs) per year.[42] We oppose both of these options.

As highlighted in Table 3, that would mean that Chicago, with a presumed total number of LSLs and GRRs of 446,489, would get 44.6 to 55.8 years to remove said lines. If the city were to determine that it had more than the currently assumed number of LSLs and galvanized lines requiring replacement (GRRs), it could get an even longer extension. The LCRI proposal would provide that states are required to determine whether faster LSLR would be feasible, but there is no accountability to ensure this. Based on EPA's estimate of about 9.2 million LSLs nationwide,[43] the handful of systems in Table 3 have a wildly disproportionate number of LSLs. The four that would get more time based on 10,000 LSLRs per year have a total of 1,101,129 LSLs, or nearly 12% of EPA's estimated nationwide total. All seven have 1,361,915 LSLs, or

[41] 88 Fed. Reg. at 85,065 (§ 141.84(d)(5)(v)).
[42] 88 Fed. Reg. at 84,914.
[43] EPA Office of Ground Water and Drinking Water, *Lead Service Lines*, *available at* https://www.epa.gov/ground-water-and-drinking-water/lead-service-lines (last accessed Feb. 2, 2024).

almost 15% of the nationwide total. These seven systems are less than 0.02% of CWSs (~50,000 total, 88 FR 84912)) nationwide.

We also note that some cities have large numbers of service lines listed as "unknown." In New York, for example, an analysis by Columbia University researchers found that of over 850,000 residential service line records analyzed, over 136,000 (16 percent) were potentially made of lead, and over 227,000 (27 percent) were made of an unknown material, which could also include lead.[44] In total, over 40 percent of service lines in the city could contain lead. If the 227,000 unknowns were listed as lead in the city's inventory used to determine whether it would get an extension, that could mean that there were 363,000 LSLs, allowing 36 years for the city to remove its lines with a 10,000 LSLRs per year cap, or 45 years with an 8,000 LSLRs per year cap.

EPA says that it selected 10,000 as the proposed upper threshold for what is technically possible because of potential system capacity to replace up to 10,000 LSLs per year.[45] The agency notes that Detroit's water system announced they intend to replace 10,000 LSLs per year, which the agency says, "suggests that Detroit's water system expects that this many annual replacements is technically possible."[46] EPA cites as another example the rates achieved by Newark, New Jersey, between January and March 2020, when "Newark replaced as many as 100 LSLs per day and maintained this rate 4 to 5 days per week."[47] The agency concludes that "if this rate of 100 LSLs per day had been maintained for 20 weeks of the year, it would have resulted in between 8,000 and 12,000 replacements," and therefore this "indicates that 10,000 annual replacements could be technically possible for systems."[48]

There are several problems with this analysis. First, Newark has reported that in fact it was replacing "as many as 120 pipes a day as 25 crews worked around the City."[49] EPA perplexingly concludes that the number of pipes Newark replaced each day was the maximum number it was able to replace each day, or the maximum that any city could each day. And EPA's arbitrary limitation that crews can only work 20 weeks a year at removing 100 LSLs a day (which would total 10,000 LSLRs) is also unexplained. Despite a COVID slowdown, Newark was replacing LSLs during the winter, far more than 20 weeks a year.

But even accepting the agency's assumption that 100 LSLs per day is the peak number that can be removed by any city, and assuming that workers can remove LSLs only during

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[44] Columbia University, Mailman School of Public Health, Lead Service Lines in NYC Disproportionately Impact Hispanic/Latino Communities and Children Already At Risk, Aug. 30, 2023, *available at* https://www.publichealth.columbia.edu/news/lead-service-lines-nyc-disproportionately-impact-hispanic-latino-communities-children-already-risk-lead-exposure; Nigra AE, Lieberman-Cribbin W, Bostick BC, Chillrud SN, Carrión D. Geospatial Assessment of Racial/Ethnic Composition, Social Vulnerability, and Lead Water Service Lines in New York City. Environ Health Perspect. 2023 Aug;131(8):87015. doi: 10.1289/EHP12276. Epub 2023 Aug 30. PMID: 37646509; PMCID: PMC10467360.

[45] 88 Fed. Reg. at 84,914.

[46] Id.

[47] Id.

[48] Id.

[49] Kareem Adeem, Director, Newark Department of Water and Sewer Utilities, Witness Testimony before the House Committee on Energy and Commerce, Subcommittee on Environment and Climate Change, "Hearing: Trusting the Tap: Upgrading America's Drinking Water Infrastructure." March 24, 2022. *available at* https://docs.house.gov/meetings/IF/IF18/20220329/114537/HHRG-117-IF18-Wstate-AdeemK-20220329.pdf.

spring, summer and fall (March through October, or 35 weeks), and assuming that work occurs only 5 days a week, that would mean 17,500 LSLs could be removed per year.

Each of these assumptions could be challenged as underestimates. First, Newark was removing up to 120 LSLs per day, not 100. Indeed, the city was replacing up to 2,200 LSLs per month.[50] Second, LSLs can be removed more than 8 months out of the year (Newark continued replacing lines during the winter, for example).[51]

Third, and perhaps most important, the agency is assuming a fixed availability of crews and equipment. But unions have made it clear that they are ready to train more crews. As a White House press release notes, "[t]he EPA and the Department of Labor will collaborate with labor unions to accelerate the replacement of lead pipes, including the potential to leverage existing union training centers to host state training seminars on lead service line replacement technologies and to create good paying union jobs."[52] This is exactly what Newark did, working with its local Laborers' International Union of North America that trained dozens of local residents, some of them previously unemployed, to remove lead pipes, expanding the available workforce.[53] As noted above, Newark had 25 crews working simultaneously.[54] A city like Chicago, Cleveland or New York could replicate such an approach and work with local union training centers to train enough workers to have dozens of crews available to replace lead pipes, more than Newark's 25 crews that were replacing an average of 4 to 5 LSLs per crew per day. The market can be expected to respond over the 10-year implementation period to increase the availability of both workforce and equipment as needed, particularly the decades-long extensions will not be allowed. Allowing extensions would decrease the pressure and incentive for cities, contractors and unions to train, hire and deploy crews, thus undermining the likelihood of expeditious LSL replacements.

ii. Response to EPA request for comment on whether primacy states must approve deferred deadlines and whether required rate should increase after 10 years

EPA has requested comment on whether to require states, as a condition of primacy, to approve the use of the deferred deadline provision where the water system qualifies for it and/or whether to require the primacy agency, as a condition of primacy, to assess whether it would be feasible for a system to meet the 10-year deadline or a shorter deadline even if they system meets

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[50] Jay Tokasz, New Jersey's largest city showed how Buffalo could solve its lead pipe problem, The Buffalo News (Feb. 2, 2024), *available at* https://buffalonews.com/news/local/new-jerseys-largest-city-showed-how-buffalo-could-solve-its-lead-pipe-problem/article_146d84da-bbb9-11ee-a242-7f1d5da158fe.html.

[51] Personal communication of Erik Olson, NRDC, with Kareem Adeem, Director, Newark Dept. of Water and Sewer Utilities, January 2024.

[52] White House. "Fact Sheet: The Biden-Harris Lead Pipe and Paint Action Plan." Dec. 16, 2021, *available at* https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/16/fact-sheet-the-biden-harris-lead-pipe-and-paint-action-plan/

[53] Kareem Adeem, Director, Newark Department of Water and Sewer Utilities, Witness Testimony before the House Committee on Energy and Commerce, Subcommittee on Environment and Climate Change, "Hearing: Trusting the Tap: Upgrading America's Drinking Water Infrastructure." March 24, 2022. https://docs.house.gov/meetings/IF/IF18/20220329/114537/HHRG-117-IF18-Wstate-AdeemK-20220329.pdf.

[54] Id.

the regulatory criteria for the deferred deadline.[55]While we oppose any such extensions beyond 10 years, assuming arguendo that they will be made available in certain circumstances, we would support such a requirement that primacy states must assess whether it would be feasible for a system to meet the 10-year deadline or a shorter deadline even if they meet the criteria for an extension. At an absolute minimum, the system should be required to make a compelling demonstration with supporting data to the primacy state, and the state should have to formally determine after full consideration and providing notice and public comment that compliance with the 10-year deadline, or a shorter one, is not possible.

The agency also seeks comment on whether the identified maximum replacement rate threshold could increase after ten years, such whether the threshold could double from 10,000 annual replacements to 20,000. *Id.* Assuming arguendo that EPA does include extensions in the final rule, it should at least ramp up the minimum number of LSL replacements to double or triple the rule's maximum required rate after the first 10 years.

EPA notes that the agency anticipates that "after ten years, when most systems have completed their service line replacement programs, there will be less competition for workers as well as supplies to conduct replacements."[56] The agency also says that it anticipates that "following ten years, supply chains will have expanded significantly to meet increased demand and that service line replacement efficiency will increase following a decade of system experience and the potential availability of new technologies or procedures to expedite service line replacement."[57] . But as noted above, the data from Newark and other cities speaks for itself. Replacing Newark's peak 120 lead service lines per weekday for 9 months a year would allow a system to replace over 20,000 lead service lines a year. After the 10-year deadline passes for the vast majority of systems, there will be substantial excess capacity in terms of available equipment and trained workforce otherwise out of work. In addition, there will be expanded materials availability in the supply chain and expanded equipment availability from the past decade of work, as well as additional expertise, experience, new technologies, and better procedures for LSL replacement. This all makes a doubling or tripling of the maximum number of LSLs that must be replaced per year a reasonable expectation.

Finally, while EPA has not specifically requested comment on how it proposes to calculate the number of service lines that would allow extensions under either of the two proposed approaches, this will be an extremely consequential question if the final LCRI includes such extensions. The proposed regulatory language states the deferred deadlines are based on "the total number of known lead and galvanized requiring replacement service lines."[58] This is crucial, because if service lines of unknown material were included, this would create the incentive for systems to say that they have a large number of unknowns and could therefore potentially qualify for a prolonged extension. For example, we note that in Illinois, the initial inventories found that 41 percent of all service lines were unknowns;[59] if extensions were

[55] 88 Fed. Reg. at 84,914.
[56] Id.
[57] Id.
[58] 88 Fed. Reg. at 85,065 (§ 141.84(d)(5)(v)(A) & (B)).
[59] EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 19-20 (Ex. 11), EPA-HQ-OW-2022-0801-0709, *available at* https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0709.

allowed based on the assumption that unknowns were lead, this would add many decades to the LSL replacement deadlines under the EPA proposed extension provisions. Therefore, we strongly urge that if the agency includes extensions, they should only be based upon known LSLs and GRRs.

iii. EPA cannot allow systems with a high concentration of LSLs to avoid removing all lead pipes in 10 years

The LCRI also proposes that public water systems with a high concentration of LSLs can get extensions. States would be authorized to approve extensions for systems that would have to exceed 0.039 replacements per household per year if it were to comply with a 10-year deadline.[60] We oppose this extension and do not believe that it is lawful or necessary under the statute. As illustrated in Figure 1 below, EPA calculates that many systems would get as much as 20 years, and some as long as 28 years to replace all of their lead service lines under this extension proposal.

While we conclude that these extensions are unlawful and unwise, if EPA proceeds with them, it is incumbent upon the agency to provide full disclosure of the number of LSLs and GRRs estimated to be in the systems that would qualify for these extensions. The agency also must disclose which systems are eligible for these extensions. It is puzzling how the agency believes it can codify such extensions and not be clear on how many systems would qualify (the range EPA cites, from about 700 to 2,100 systems,[61] is a threefold difference) and how many lead service lines are at issue. It is entirely plausible, based on the data the agency has provided publicly, that the agency has underestimated the number of systems that would be getting extensions. We are also concerned that some systems might provide an initial overestimate of the number of LSLs they have to get an extension, and then report that these lines were determined not to be lead many years into the extension. These issues further support the need for a local public hearing and public comment, as well as a requirement that the primacy agency make an individualized determination that an extension is warranted for each system.

An analysis of the Michigan data,[62] which is more detailed than publicly available national data, examined the expected impact of the proposed extensions. This analysis by Elin Betanzo of Safe Water Engineering yields the following results:

- 74 Michigan water systems qualify for deferrals out of
- 200 Michigan water systems that took 5th liter samples in 2023 out of
- 275 that reported potential LSLs out of
- 1357 that submitted a preliminary inventory out of
- 1360 that took LCR samples during the last 3 years.

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[60] LCRI, 88 Fed. Reg. at 85,065 ((§ 141.84(d)(5)(v)(B)).

[61] The agency's LCRI Federal Register notice, 88 Fed. Reg. at 84,913, says "EPA projects that a total of 663 to 2,134 systems (1.3 to 4.3 percent of all systems)" would be affected, citing its Technical Support Document. However, the Technical Support Document says 720 to 2,178 systems will likely be affected (*See* Technical Support Document at 16, Ex. 8). We assume the latter is more up to date and correct.

[62] Elin Betanzo, Safe Water Engineering, Jan. 22, 2024, personal communication. This analysis uses total number of service lines as a surrogate for households, since EPA does not define households.

- The deferred replacement rate would vary up to 25 years for River Rouge
    - River Rouge has a population of 7,224, with a reported 3025 known LSLs.

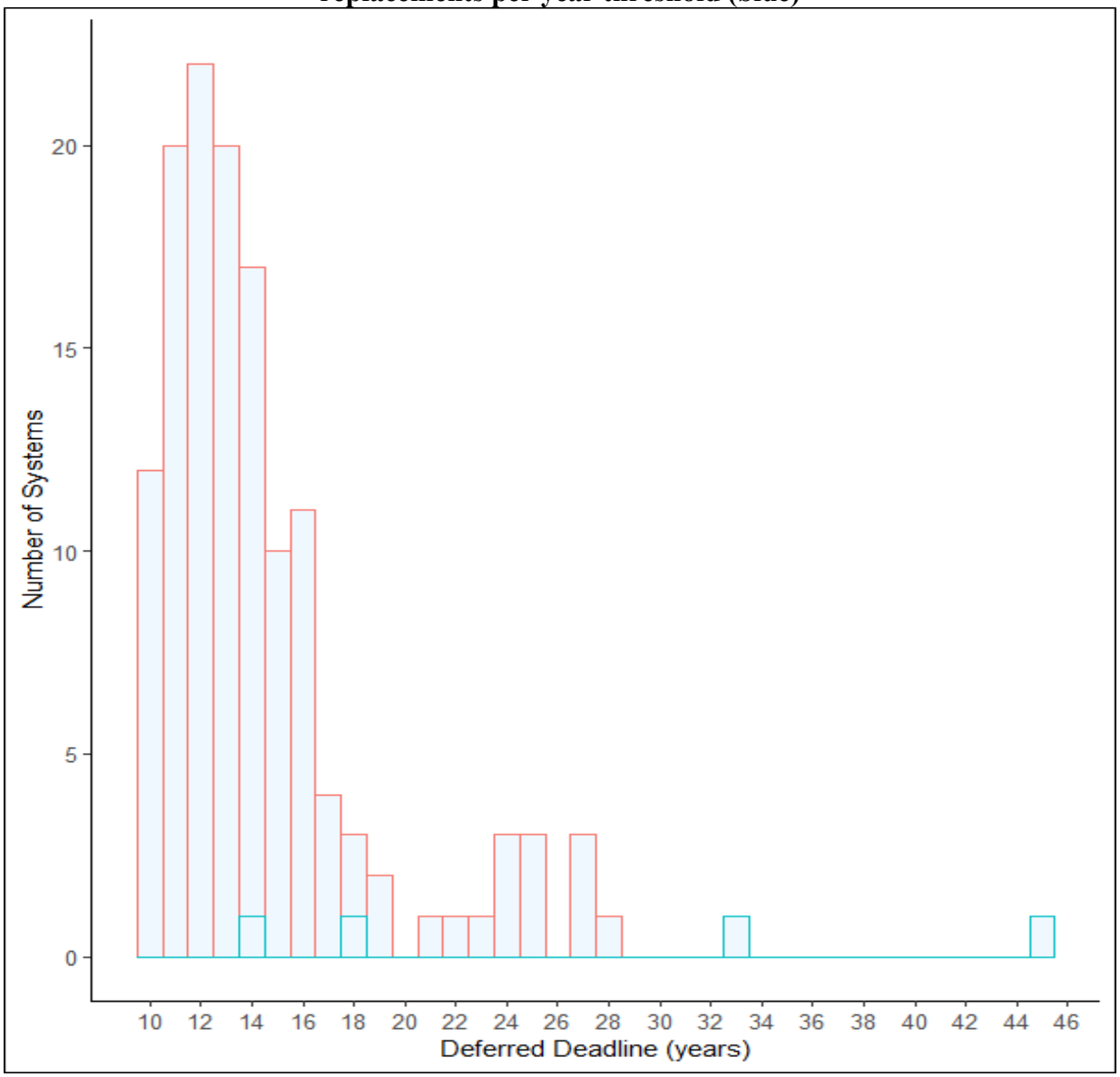
So, according to this analysis, more than one fourth of Michigan water systems with lead service lines (74 out of 275 reporting potential LSLs) would be allowed to take longer than 10 years to replace their lead service lines.

Under this type of exemption, if a system serves 50,000 households and would have to do >1,950 LSLRs per year, it could get an extension. Thus, if that system had 35,000 LSLs, it would get 18 years to replace them. EPA projects that a total of 720 to 2,178 systems, (1.4 to 4.4 percent of all systems)[63] would exceed this threshold. Indeed, EPA's supporting materials for the LCRI indicate that EPA's "Best Estimate" is that 2,178 systems would be eligible for extensions based on the threshold of 0.039 replacements per household per year,[64] and we are concerned based on these estimates that the actual upper bound may even be higher. This could become a major loophole that would allow hundreds or thousands of water systems, including many of the systems that by definition have major lead service line problems because they have a high concentration of these lead pipes, to get a prolonged extension of the 10-year deadline.

As noted above, A 10-year deadline is feasible by the agency's own admission for the vast majority—97.6 to 99.3 percent of large water systems[65] which are the systems required to be considered in evaluating feasibility—and therefore the extension contemplated in section 141.84(d)(5)(v)(B) should not be included in the rule. This is a significant deficiency that will hit hardest those communities with the highest concentrations of lead pipes, including many environmental justice communities that are disproportionately saddled with LSL and other sources of lead exposure—the very communities that are most important to address.

[63] LCRI Technical Support Document at 16, Ex. 8.
[64] Id. at 11, Ex. 4.
[65] See id.

Figure 1
EPA estimate of the number of systems getting extensions because they exceed maximum number of replacements per household threshold (red) or exceeding the 10,000 replacements per year threshold (blue)



Source: EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 17 (Ex. 9)

EPA justifies this extension by noting that it reviewed the LSL replacement programs of 30 large systems and considers that the "95th percentile normalized rate (0.039 replacements per household per year)" is the "affordability threshold because it avoids setting the rate at the maximum recorded replacements per year rates, which were achieved by systems known to have received technical and financial assistance to support their replacement program that is unlikely

to be broadly available when there is a national requirement to replace LSLs and GRR service lines."[66]

However, our review of EPA's Technical Support Document makes clear that there are several reasons why this 0.039 replacements per household per year rate is likely to be an underestimate of the rate at which systems can be expected to replace their lead service lines to the extent feasible to protect public health. EPA admits:

> All the identified replacement programs reflect replacement rates achieved before the significant [Bipartisan Infrastructure Law (BIL)] funding became available. Therefore, it is possible that an even higher per-household rate is affordable with the availability of BIL funding for some systems than the rates identified in this proposal. In fact, EPA is aware of several systems that project accelerating their annual service line replacement rate as a result of receiving additional funding, including BIL funding [citations omitted]. Secondly, the service line replacement programs identified in this analysis generally had no requirements to replace service lines as quickly as feasible to protect public health "to the extent feasible" … and, therefore, the identified per-household rates might not reflect the limit to what is affordable by systems. Thirdly, … many identified systems are also in the early years of their program, so their per-household replacement rates may not reflect the ability of these systems to conduct service line replacement at full scale.[67]

Moreover, as EPA admits in its Technical Support Document, a replacement rate of 0.066 LSLs per household per day was achieved by Newark.[68] While it is true that Newark succeeded in raising bonds to support its effort, Newark received no Bipartisan Infrastructure Law (BIL) funding and is by no means a wealthy or uniquely well-resourced city. Newark has a median household income of $46,460 and has a 95.3 percent Black, Latinx and mixed-race population,[69] compared to the far higher U.S. median household income of $74,580.[70] With the availability of funding from the Bipartisan Infrastructure Law, Drinking Water State Revolving Fund, American Rescue Plan Act, Water Infrastructure Innovation and Finance Act, and other federal funds discussed at length on EPA's website,[71] as well as bonds and ratepayer dollars, there is no reason any other large water system that is motivated to comply with a 10-year deadline to

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[66] 88 Fed. Reg. at 84,913.
[67] EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 10, EPA-HQ-OW-2022-0801-0709, *available at* https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0709.
[68] Ibid, at 4 Ex. 1.
[69] US Bureau of the Census, Quick Facts: Newark, NJ, *available at* https://www.census.gov/quickfacts/fact/table/NJ,newarkcitynewjersey/PST045221
[70] US Census Bureau, Income in the United States: 2022, *available at* https://www.census.gov/library/publications/2023/demo/p60-279.html#:~:text=Highlights,and%20Table%20A%2D1.
[71] EPA, Identifying Funding Sources for Lead Service Line Replacement, *available at* https://www.epa.gov/ground-water-and-drinking-water/identifying-funding-sources-lead-service-line-replacement#:~:text=Bipartisan%20Infrastructure%20Law%20(BIL)&text=The%20Bipartisan%20Infrastructure%20Law%20invests,State%20match%20is%20not%20required .

replace its LSLs could not do what Newark did.[72] Nor should concerns about water affordability drive calls for these extensions. As discussed in section 13 of these comments discussing affordability, there are many ways to replace all LSLs and still ensure that water is affordable to low-wealth people. For these and other reasons, we do not believe this additional extension is necessary for systems that would have to replace more than 0.039 lead service lines per household per year.

iv. EPA should include a mandatory minimum number of annual LSLRs

As proposed, the LCRI's ten-year LSL replacement mandate does not account adequately for the widely varying numbers of LSLs and GRRs in water systems, even in systems serving similarly sized populations. As a result, it would allow some water systems to replace very low numbers of LSLs and GRRs per year even if the water system has the resources to complete LSLRs much faster.

EPA collected multiple examples of cities with similar population sizes that had total numbers of LSLs and GRRs that vary by an order of magnitude or more.[73] For example, among large systems, Washington, D.C., had 28,000 LSLs and GRRs, which is two orders of magnitude more than the slightly larger (by population) city of Tucson, which had only 600 LSLs or GRRs.[74] Among medium-size systems, Bloomfield, NJ, had 500 LSLs or GRRs compared to 5,000 in Battle Creek, MI, despite similar population sizes.[75] Overall, EPA estimates that the vast majority of water systems nationwide—about 96.5 percent—have fewer than 1,000 LSLs and GRRs and provides examples of multiple systems of varying sizes that were able to replace all LSLs in one or two years.[76]

The LCRI should account for these differences by requiring a minimum number of LSLRs per year. At a 10% annual replacement rate, many water systems with low quantities of LSLs and GRRs would be required to replace comparatively few service lines per year, despite the water systems having similar resources to systems that would be required to replace an order of magnitude more service lines per year. Using one of the above examples, if a water system serving a city similar to Battle Creek would have to replace 1,000 LSLs per year, a water system serving a similarly sized city that has one-tenth as many LSLs and GRRs could reasonably be required to conduct replacements at a similar rate and replace all of its LSLs and GRRs within one year.

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[72] We note again that Newark did not access federal funding for its LSLR program and yet managed to conduct replacements with haste. With additional monetary support, many water systems would be able to match or surpass the success of Newark's program.

[73] EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 3-6 (Ex. 1), EPA-HQ-OW-2022-0801-0709, *available at* https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0709.

[74] Id.

[75] Id. Other examples of cities with similar populations and vastly differing numbers of LSLs and GRRs from Exhibit 1 in the LCRI Technical Support Document include: Sioux Falls, SD (198,524 people, 230 LSLs/GRRs) and York, PA (197,177 people, 2,300 LSLs/GRRs); Quincy, MA (101,636 people, 285 LSLs/GRRs) and Flint, MI (98,310 people, 12,035 LSLs/GRRs); and Framingham, MA (72,362 people, 184 LSLs/GRRs) and Madison, WI (71,160 people, 8,000 LSLs/GRRs).

[76] 88 Fed. Reg. at 84,912 ("the majority of systems—only approximately 1,700 out of nearly 50,000 CWSs nationwide (3.5 percent) are expected to have more than 1,000 LSLs and GRR service lines").

Relying on states to set faster replacement rates on a case-by-case basis is inadequate because many states prohibit state requirements that are more stringent than federal rules.[77] To address this problem, the LCRI's baseline LSLR requirement should be adjusted to be at least 10% of all LSLs and GRRs in the system or at least 500 LSLRs per year, whichever is higher, and States should have authority to require an even faster rate if the State deems it feasible. This would ensure that all systems replace LSLs and GRRs at a reasonable, expeditious, and feasible rate. For example, Newark, New Jersey, was able to replace 100 to 120 LSLs *per day* once its LSLR program was fully operational,[78] so a minimum rate of 500 LSLRs *per year* would be equivalent to the rate that Newark achieved *per week*. EPA's Technical Support Document provides many more examples of water systems of various sizes that successfully replaced at least 500 LSLs per year, including Cincinnati, OH; Washington, DC; Pittsburgh, PA; Trenton, NJ; Aurora, IL; Kalamazoo, MI; Lansing, MI; Flint, MI; Madison, WI; Galesburg, IL; and Stoughton, WI.[79] At least two other systems with fewer than 500 total LSLs—Mayville, WI, and Village of Montgomery, IL—completed all of their replacements in a single year.[80] These results show that a minimum annual replacement rate of 500 LSLs per year is feasible.

D. Service Lines and Connectors Subject to Mandatory Replacement

i. Definitions of Lead Connector and LSL and Replacement of Lead Connectors

We are supportive of EPA's inclusion of lead connectors longer than two feet in the definition of a lead service line to be replaced. However, all lead plumbing poses a public health risk and must be proactively identified and removed, including shorter lead connectors. The proposed rule should be changed to reflect this public health threat. Additionally, EPA's definition of a lead service line leaves open the possibility that the portion of a lead service line that enters a customer's home will remain in place. This too must be remedied to the extent possible in the final rule.

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[77] See, Association of State Drinking Water Administrators, Costs of States' Transactions Study (CoSTS) For Potential Long-Term Revisions to the Lead and Copper Rule (LT-LCR), April 2018 ("Many states have constitutional amendments or state-level policies such that their regulations must exactly match the federal regulations and are no more stringent than the federal regulations.") *available at* https://www.asdwa.org/wp-content/uploads/2018/05/CoSTS-Report-Final-2018.pdf

[78] Kareem Adeem, Director, Newark Department of Water and Sewer Utilities, Witness Testimony before the House Committee on Energy and Commerce, Subcommittee on Environment and Climate Change, "Hearing: Trusting the Tap: Upgrading America's Drinking Water Infrastructure." March 24, 2022. https://docs.house.gov/meetings/IF/IF18/20220329/114537/HHRG-117-IF18-Wstate-AdeemK-20220329.pdf;, 88 Fed. Reg. at 84,914.

[79] EPA, 2023, Technical Support Document for the Proposed Lead and Copper Rule Improvements, at 3-6 (Ex. 1), EPA-HQ-OW-2022-0801-0709, *available at* https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0709.

[80] Ibid.

a. Connector Definition

While we are supportive of EPA's inclusion of lead connectors longer than two feet in its definition of a lead service line to be replaced,[81] all lead plumbing poses a public health risk and must be removed. Pipes such as pigtails and goosenecks can release lead similar to the way a lead service line releases lead,[82] and therefore pose a public health risk.[83] Under some very common circumstances even a short lead connector can pose a substantial threat because of galvanic corrosion. It is well-established that when lead is joined with copper or another metal,[84] lead levels can increase exponentially, even if the remaining lead pipe is relatively short.[85] Both lead spikes and constant increased lead levels have been observed under these circumstances and worsened over time.[86] Further, the SDWA defines a lead service line as "a pipe *and its fittings*, which are not lead free...that connect the drinking water main to the building inlet."[87] For these reasons EPA must include these shorter fittings as part of its definition of a LSL. If EPA decides not to include these shorter lead pipes in its definition, at a minimum EPA should require the proactive identification and replacement of lead connectors that are two feet or shorter as opposed to the proposal's suggestion that lead connectors only be replaced when discovered.

b. Lead Service Line Definition

Additionally, EPA's proposed definition of a lead service line does not include the portion of the line that enters the customer's home. The current definition cuts the service line short,

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[81] 88 Fed. Reg. at 85,054 (§ 141.2), defining a lead service line as "a service line that is made of lead or where a portion of the service line is made of lead," and defining a connector as "a short segment of piping not exceeding two feet that can be bent and is used for connections between rigid service piping, typically connecting the service line to the main."

[82] A pilot study by San Francisco Public Utilities Commission (SFPUC) found lead spikes as high as 1,400 ppb after the replacement of lead connectors (whips). SFPUC, *Memo from Elaine Adan Kawaii to Manouchehr Boozarpour Re: LUSL Pilot Study Update* 2 (Oct. 1, 2020).

[83] Even EPA recognizes the risk posed by *any* length of lead plumbing; the LCRI's preamble explains that sites with interior leaded plumbing should be either a tier 1 or tier 2 sample site as these sites are "likely to have elevated lead levels." EPA does not specify a minimum amount of interior lead plumbing, contrary to what is proposed for connectors. 88 Fed. Reg. at 84,930.

[84] Chang et. al, *Prediction of lead leaching from galvanic corrosion of lead-containing components in copper pipe drinking water supply systems,* 436 Journal of Hazardous Materials 12,9169 (Aug. 15, 2022), *available at* https://www.sciencedirect.com/science/article/abs/pii/S0304389422009591.

[85] Cartier et. al, *Impact of treatment on Pb release from full and partially replaced harvested Lead Service Lines (LSLs),* 47 Water Research 661, 664 (Feb. 1, 2013), *available at* *https://www.sciencedirect.com/science/article/abs/pii/S0043135412007634,* finding that even when lead pipes were 80% replaced, the remaining lead materials released more lead than the original full LSL due to galvanic corrosion. *See also* Diana Lutz, Washington University St. Louis, The Source Newsroom, *Lead levels in drinking water spike when copper and lead pipes joined,* (accessed Jan. 31, 2024) https://source.wustl.edu/2011/12/lead-levels-in-drinking-water-spike-when-copper-and-lead-pipes-joined/, Hu et. al, *Copper-Induced Metal Release from Lead Pipe into Drinking Water,* 68 Corrosion The Journal of Science and Engineering 1037 (Nov. 1, 2012) *available at* https://meridian.allenpress.com/corrosion/article-abstract/68/11/1037/163020/Copper-Induced-Metal-Release-from-Lead-Pipe-into?redirectedFrom=fulltext (finding increased lead release due to galvanic corrosion); and St. Clair et. al, *Long-Term Behavior of Simulated Partial Lead Service Line Replacements,* 33 Environmental Engineering Science 53, 55–56 (Jan. 1, 2016) *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4770854/ (demonstrating galvanic corrosion increased over time).

[86] *Id.*

[87] 42 U.S.C. § 300j-19b(a)(4), *emphasis added.*

ending at the point at which the lead pipe touches the building. But typically, an additional 12 to 18 inches of line continues beyond the entrance point into the building into a customer's home, to the point at which there is a shutoff valve or meter in the building. EPA should clarify that replacement of this indoor portion of a LSL or GRR is required if a system has access into a customer's home. This is similar to Michigan's Lead and Copper Rule which requires replacement of the entire line, including "…to customer site piping or to the building plumbing at the first shut-off valve inside the building, or 18 inches inside the building, whichever is shorter."[88] Illinois has adopted a similar definition, that a service line "means the piping, tubing, and necessary appurtenances acting as a conduit from the water main or source of potable water supply to the building plumbing at the first shut-off valve or 18 inches inside the building, whichever is shorter."[89] EPA should define "inlet" as the point at which the lead service line formally ends in the building and connects into the premise plumbing, that is, where it reaches its first shut-off valve or meter inside the building, or 18 inches inside the building, whichever is shorter.

c. Lead Connectors

As discussed above, we are supportive of EPA's inclusion of lead connectors longer than two feet in its definition of a LSL requiring replacement.[90] We are similarly supportive of EPA's proposed requirement to identify lead connectors of two feet or less when systems create their inventories,[91] and the proposed requirement that such connectors are replaced. However, connectors should be proactively replaced, not only when they are (apparently physically) encountered, as the LCRI currently proposes.[92] As outlined above, the SDWA's definition of a LSL includes lead fittings, and customers can be exposed to lead via even a small lead connector; therefore, all lead fittings should be proactively identified and removed. This means that when a system creates its inventory and determines a connector is present and that connector is either categorized as "lead" or "unknown," the system must either replace the lead connector by the mandatory LSLR deadline or identify the material by the deadlines outlined in Section 5 below and take action according to the material encountered (replacing if lead).

Water systems must be required to promptly and physically verify connector material if records indicate a lead connector is present or likely present[93] and replace the connector and downstream galvanized service line if the system finds the connector is in fact lead. The fact is, there are many systems wherein the majority or even the totality of known lead plumbing takes

[88] Mich Admin Code R. 325.10108.
[89] 415 Ill. Compiled Statutes (ILCS) 5/17.12(c).
[90] 88 Fed. Reg. at 85,054 (§ 141.2), defining a lead service line as "a service line that is made of lead or where a portion of the service line is made of lead," and defining a connector as "a short segment of piping not exceeding two feet that can be bent and is used for connections between rigid service piping, typically connecting the service line to the main."
[91] 88 Fed. Reg. at 85,062 (§ 141.84(a)(2)(ii)).
[92] 88 Fed. Reg. at 85,066 (§ 141.84(e)).
[93] Because galvanized lines are inflexible and historically were most commonly installed with a lead connector, systems should assume that a galvanized line has a lead connector, meaning the presence of a galvanized line would trigger physical validation and removal.

the form of lead connectors.[94] In such places, EPA should require systems treat shorter lead and unknown connectors the same way other systems treat LSLs and GRR; systems should systematically identify connector material and create inventories and plans for replacement, to take place within 10 years. Similarly, the same public health education and protections should be in place, including providing filters during lead connector removal. These protections should be in place for all lead connectors and not just those attached to galvanized lines, as lead connectors attached to copper service lines have also been found to result in lead spikes post-removal.[95] There are also several problems with the inventory and validation of lead connectors. This is discussed in section 5.

d. Galvanized Lines and Lead Materials

The LCRI correctly identifies galvanized service lines that are or were downstream of lead pipes or connectors as a substantial risk to human health. The collection and then release of lead by downstream galvanized plumbing is well-established and long-lasting.[96] The final rule must require the removal of all galvanized pipes that currently are or ever were downstream of lead pipes or lead connectors. Omitting such service lines would be completely unjustifiable because of our current understanding of the release of lead from downstream galvanized plumbing.

e. Responses to EPA's Specific Requests for Comment

EPA has specifically requested comment on the defined length of a connector. EPA should require the identification and removal of all lead connectors, regardless of length. This is addressed further in section 2(D)(i)(a), paragraph one, and section 2(D)(i)(b).

EPA has specifically requested comment on whether the Agency should include lead connectors or galvanized service lines that are or were downstream of a lead connector as part of mandatory replacement. Lead connectors and galvanized lines that are or were downstream of a lead connector should be part of the LCRI's mandatory replacement requirement. This is addressed further in section 2(D)(i)(c)-(d).

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[94] Simoni Triantafyllidou, US EPA Office of Research and Development, EPA Tools & Resources Webinar: Identifying Lead Service Lines in the Community 9 (Oct. 26, 2022), *available at* https://www.epa.gov/system/files/documents/2022-11/508%20Compliant%20-%20Identifying%20Lead%20Service%20Lines_Oct%202022.pdf.

[95] SFPUC, *supra* n. 82 at 6.

[96] *See* Clark, B N., et al., *Lead Release to Drinking Water from Galvanized Steel Pipe Coatings, 32 Environmental Engineering Science 713,* (Aug. 13, 2015), *available at* *https://www.liebertpub.com/doi/abs/10.1089/ees.2015.0073?journalCode=ees;* HDR Engineering, Inc., *An Analysis of the Correlation between Lead Released from Galvanized Iron Piping and the Contents of Lead in Drinking Water* 22 (Sept. 1 2009), *available at:* *https://archive.epa.gov/region03/dclead/web/pdf/galvanized%20project%20report.pdf;* and McFadden, M, et al., *Contributions to drinking water lead from galvanized iron corrosion scales, 103 American Water Works Association Journal 76,* (Apr. 1, 2011), *available at* *https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/j.1551-8833.2011.tb11437.x*.

ii. Partial Lead Service Line Replacement

We applaud EPA for allowing only replacement of the full lead service line to count towards the LCRI's lead service line replacement mandate.[97] Replacing only part of a lead service line can cause high lead levels shortly after the partial replacement and does not sufficiently reduce lead exposure.[98] Replacement of the entire service line is both the most health-protective and cost-efficient option. As discussed extensively in the "control" discussion of this section below, we strongly recommend that EPA promulgate a definition of "control" that requires water systems to replace and pay for full replacement of all of the LSLs in their service territories. If EPA follows these recommendations, it would obviate the need for a water system to ever do partial replacement. We agree, however, that if EPA maintains the "control" and "access" loopholes over our strong legal and practical objections, the agency must maintain the requirement that if a water system cannot replace a portion of a lead service line due to issues around access or control, then the water system cannot do a partial replacement. Under the proposal, water systems are required to try to obtain consent to replace the entire service line.[99] Putting aside any concerns about EPA's definition of control, the prevention of partial replacements under this provision is also a good thing. Because water systems are prohibited from doing partial replacements except in specific circumstances, and even in those circumstances the water systems must offer to replace the entire line and provide filters if it does the partial replacement, the rule encourages the water system to expend effort to replace the entire line rather than simply taking the path of least resistance and replacing only a portion of the service line.

Exceptions to replacing the full LSL should be narrow and limited. We accept that in emergencies, there are cases where doing a partial replacement may be unavoidable. The LCRI, however does allow for partial lead service line replacements under two circumstances: as part of emergency repair or in coordination with planned infrastructure work that is not lead service line replacement.[100] These replacements do not count towards the number of lead service lines a water system is required to replace annually under the LCRI. When doing a partial replacement, the water system must notify the owner of a property and any non-owner occupants that the water system plans to do a partial lead service line replacement and the water system must offer to replace the entire service line instead.[101] In emergencies, it may be necessary for the water system to do a partial replacement and then later offer to replace the portion of the LSL it left in

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[97] See 88 Fed. Reg. at 85,054, 85,066 (§ 141.2, 141.84(d)(6)(iii)(D)).

[98] See LCRI, 88 Fed. Reg. at 84,917 ("Research has found that partial LSLR has not been shown to reliably reduce lead levels in the short term and may temporarily increase lead levels due to disruptions of established scales or galvanic corrosion (USEPA, 2011;...) while service lines that have been sampled and have tested-out may contribute to lead at a later date (Del Toral et al., 2013)"); see also, id, at 84,928 ("Partial replacements are often associated with elevated drinking water lead levels in the short-term, from days to months and potentially longer, and have not been shown to reliably reduce lead levels in the long-term") (internal citations omitted). *See also* Letter from Dr. Dr. Deborah L. Swackhamer, EPA Science Advisory Board Chair, and Dr. Jeffrey K. Griffiths, SAB Drinking Water Committee Chair, to Lisa P. Jackson, U.S. Environmental Protection Agency, Administrator (Sept. 28, 2011), *available at* https://www.epa.gov/sites/default/files/2015-09/documents/sab_evaluation_partial_lead_service_lines_epa-sab-11-015.pdf.

[99] See 88 Fed. Reg. at 85,064 (§ 141.84(d)).

[100] See 88 Fed. Reg. at 85,067 (§ 141.84(g), (h)).

[101] Id.

the ground. In those situations, we support the LCRI's requirements to require 1) that the water system offer to replace the rest of the LSL within 45 days and 2) that the water system provide filters/POU devices and six months of cartridges to affected residents if the offer to replace the rest of the LSL is refused. Additionally, as discussed below in the "cost sharing" portion of this section of our comments, we strongly urge that EPA require utilities to cover the cost of full replacement, which would minimize the likelihood of any partial replacements, even in many cases of emergency repairs.

However, EPA should not allow partial lead service line replacements when the water system is doing other planned infrastructure work. In those situations, EPA should require water systems to either replace the entire LSL or to leave the LSL in place and in the pool of LSLs requiring replacement so that it can be replaced at a later time. It should be noted in the final LCRI that EPA has clearly stated that if State Revolving Fund money is spent on planned infrastructure work such as water main replacement, lead service lines that are encountered must be fully replaced. EPA explains that "If the customer... refuse[s] access, then the water system should leave the publicly-owned portion of the lead service line in place (so as to not create a partial replacement) and document this action. To be clear, partial service line replacements are not eligible for DWSRF funding (from any DWSRF funding source)."[102]

As currently written, the planned infrastructure work exception for partials creates a loophole for water systems to get out of fully replacing all of their LSLs. Although partial replacements cannot count towards fulfilling a water system's LSL replacement mandate, if water systems claim they don't have control over the portion of the LSL on private property, doing a partial replacement reduces the number of LSLs in the "to be replaced" pool, leaving fewer LSLs for the water system to replace. While we recommend in the control section of these comments below that EPA change the definition of control in the LCRI in order to close loopholes to the LSL replacement mandate, even if EPA doesn't change the definition, the planned infrastructure work exception for partials should still be eliminated to prevent water systems from using it as an end run around full LSL replacement.

Additionally, the provision on partial replacements lacks clarity on 1) who can accept the water system's offer to replace the portion of the lead service line left in the ground after a partial replacement and 2) who must bear the cost of the replacement if that offer is accepted. EPA should allow non-owner occupants to accept the offer and require the water system to bear the cost. As we state elsewhere, if property owners are asked to bear the costs of lead service line replacement, many lines won't be replaced.[103] By allowing non-owner occupants to accept the water system's offer, water systems can get that acceptance quickly and partial LSLs will not remain in place. EPA should require that when the water utility offers to replace a full lead service line when emergency work necessitates partial replacement, the water utility must cover the cost of the full replacement and allow any adult occupant to approve the replacement. Doing so will facilitate acceptance of the water system's offer and will lead to more full LSL replacement.

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[102] EPA, Frequent Questions about Bipartisan Infrastructure Law State Revolving Funds: LSL (Question 4) https://www.epa.gov/dwsrf/frequent-questions-about-bipartisan-infrastructure-law-state-revolving-funds .

[103] For more details, see cost-sharing subsection of our comments.

iii. Filters

EPA must clarify that the language "[t]he water system must provide the consumer with a pitcher filter or point-of-use device . . ., six months of replacement cartridges, and instructions for use"[104] when doing a partial replacement means that the water system must pay for the filter or point of use device and the cartridges. While it is the apparent intent of the LCRI is to require water systems to provide these filters at no cost to individual consumers, this should be made unambiguous in the regulatory language of section 141.84(h). The requirement to provide a free filter after any disturbance to these service lines is a clear improvement over the LCRR. Providing filters after a partial replacement is health-protective because filters mitigate the high lead concentrations that are likely after a partial replacement. Requiring the water system to provide the consumer with the filter and replacement cartridges also protects public health because it makes it easy for the consumer to use the filter. Consumers don't have to pay for the filter and cartridges and don't have to figure out what filter to use or where to get one—the utility will provide it. EPA must also affirmatively state that "must provide" means that the water system must mail or deliver the filter/POU device and cartridges to the resident(s).

Assuming that EPA does clarify that water systems must pay for filters after doing a partial replacement, by not also requiring the water system to pay to replace the entire LSL, the LCRI creates perverse incentives. Many landlords, particularly those owning property in low-wealth communities of color, will often feel that they have no reason to accept the water system's offer of full lead service line replacement and every reason to decline it if they are required to contribute a substantial sum towards the endeavor. If paying to replace the lead service line is perceived by landlords as being too expensive and is too expensive for low-wealth homeowners, the lead service lines will remain in use, creating a serious environmental injustice for these homeowners and tenants. In addition, if the water system simply provides an inexpensive water filter that somewhat mitigates the adverse health effects of the lead service line, many landlords or low-wealth homeowners are likely to decline to contribute a large sum to remove the LSL located on their property. Low-wealth homeowners may feel that the filters are protective enough not to spend money they don't have, and landlords will know that their tenants get something to protect them—which may mitigate complaints or rent withholding—without the landlord having to pay upfront costs they may not be able to recoup. The best solution is for EPA to require water systems to pay for replacing the entire LSL in all circumstances. Doing so will lead to very few dangerous partial service line replacements and will hasten full service line replacement, both of which are aligned with EPA's goals in promulgating this rule. If EPA fails to follow our strong recommendation that the LCRI require utilities to pay for full LSLR, at a minimum, the LCRI should require the distinctly less protective approach of requiring free water filters and cartridges (and education on their installation, use, and maintenance) after a partial replacement, provided by the water system at no cost.

iv. The proposed LCRI greatly undermines the promise of replacing all lead service lines by incorrectly and narrowly defining "control"

EPA serves a devastating blow to its proposed ten-year LSL replacement mandate by proposing, unnecessarily, to limit which LSLs are subject to the mandate. The proposed LCRI

[104] See 88 Fed. Reg. at 85,067 (§ 141.84(h)(iii)).

states that "[a]ll water systems must replace all lead and galvanized requiring replacement service lines **under the control of the water system** unless the replacement would leave in place a partial lead service line."[105] The LCRI then explains that "[w]here a water system has access (*e.g.,* legal access, physical access) to conduct full service line replacement, the service line is under its control, and the water system must replace the service line."[106] EPA, however, chooses not to define access because "of the wide variation of relevant State and local laws and water tariff agreements as well as the potential for these to change over time."[107] Rather, EPA requires each individual water system to identify and cite "any specific laws, regulations, and/or water tariff agreements that affect the water system's ability to gain access," for full LSLR, including those that require customer consent and/or require or authorize customer cost-sharing, in its replacement plans and notices provided to people with LSLs.[108]

These decisions are perplexing because, as discussed further below, they: 1) abandon EPA's original and fact-based understanding of control; 2) do not comport with other sections of the proposed rule that show that utilities often have, or can fairly easily obtain, access; and, 3) create an easy way for water systems resistant to LSL replacement to avoid replacing LSLs—including all LSLs in their system—by claiming a lack of control over/access to, in particular, the portion of LSLs on private property. These provisions would allow a water system to comply with the LCRI, claim to have replaced "all" their LSLs (because they complied with the mandate), and yet still leave large numbers—potentially thousands of LSLs—in the ground and in use, continuously and knowingly exposing people to lead. Assuming EPA is serious about trying to eliminate lead exposure from lead service lines, it must change these provisions in the final LCRI. As also discussed further below, the LCRI should either: 1) require state primacy agencies to adopt rules that presume water systems' authority to replace LSLs as a condition of primacy; or, 2) presume water systems' ability to replace LSL, require all systems to replace all lead service lines, and allow systems to avoid LSLR replacement as a matter of law only through strict mechanisms for showing they do not have and cannot obtain that ability.

a. EPA should require that water systems replace all lead service lines and that water systems, localities, and states overcome any barriers or EPA will retain primacy for the LCRI

As outlined below, EPA should include in the LCRI mechanisms to ensure that water systems do not and cannot inappropriately avoid full lead service line replacement (as set forth above) and gut the promise of the LCRI.

1. EPA should presume water systems have control over full service lines

For all the reasons stated in subsection B of this section, EPA should include in the final LCRI a presumption that water systems have control over the full service line.

[105] 88 Fed. Reg. at 85,064 (§ 141.84(d)(1)) (emphasis added).
[106] 88 Fed. Reg. at 85,064 (§ 141.84(d)(2)).
[107] 88 Fed. Reg. at 84,920.
[108] 88 Fed. Reg. at 85,064 (§ 141.84((c)(1)(viii); § 141.84(d)(2)(i));

2. EPA should require primacy states to adopt rules stating water systems are presumed to have control over full lead service lines and to have authority to fully replace them, as a condition of primacy

Under the SDWA, states have primary enforcement responsibility (primacy) for water systems when EPA has determined that they meet certain criteria, including that the state's rules are at least as stringent as any new or revised EPA standards.[109] If the state fails to adopt regulations as stringent as EPA's new or revised National Primary Drinking Water Regulations (such as the LCRI), EPA will not approve primary enforcement authority for that new or revised rule and the agency will retain primacy for that regulation.[110]

If the LCRI required water systems to replace all LSLs in their service territory and that systems be required to have control to enable such LSLRs, that would be a condition for states to retain primacy. Thus, EPA would not approve continued primacy for implementing the newly revised LCR under 40 C.F.R § 142.12 and would directly implement the LCRI in that state. In such a case, EPA's rules would supplant state laws if the state has not adopted procedures to adequately implement the LCRI—in this case, permitting water systems to replace LSLs in all circumstances.[111]

To implement this provision, EPA should require states to require water systems to replace all LSLs and GRRs in their service territory. And to ensure that mandatory replacement is adequately implemented, EPA should require primacy states to have laws or rules in place stating that utilities are presumed to have control of the full lead service line and are authorized to pay for the full lead service line under state law.[112] Water systems may need to ensure that they have authority (e.g. to change their service contracts or tariffs, work with local legislators to amend local ordinances, etc.) to allow the systems to access all portions of the LSLs in their service territories. If a state does not adopt or have in place such rules and statutes, as confirmed by the state Attorney General or counsel as provided by EPA's regulations, then EPA should retain primacy for implementing the LCRI.[113] And once EPA retains primacy, it should state that water systems are presumed to have control. When it retains primacy, EPA's rules take precedence over less stringent or conflicting state and local law under the explicit terms of the SDWA, and pursuant to the Supremacy Clause of the U.S. Constitution[114] and will force the water systems to replace all LSLs in their service territories.

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[109] SDWA § 1413, 42 U.S.C. §300g-2; 40 C.F.R. §142.11.
[110] 40 C.F.R. §142.12.
[111] *Id*.; *see also* 42 U.S.C. **§ 300g-2(a)(2).**
[112] 42 U.S.C.A. **§ 300g-2(a)(2).**
[113] *See* 40 C.F.R. § 142.12.
[114] Congress has explicitly provided in the SDWA that state rules may not relieve water systems from any requirement under federal rules. *See* SDWA §1414(e), 42 U.S.C. §300g-3(e)("Nothing in this subchapter shall diminish any authority of a State or political subdivision to adopt or enforce any law or regulation respecting drinking water regulations or public water systems, but no such law or regulation shall relieve any person of any requirement otherwise applicable under this subchapter."). Congress' and EPA's authority to adopt and enforce such rules is established by Article VI of the United States Constitution, which states that the Constitution and the laws of the United States "shall be the supreme Law of the Land." U.S. Const. art. VI, cl. 2. The Supreme Court has found that this clause "unambiguously provides that if there is any conflict between federal and state law, federal law shall

Courts have held that the SDWA preempts local regulations conflicting with federal law in other situations. For example, in analyzing a provision of the SDWA, the Western District of Pennsylvania held that a local ordinance regulating the deposit of oil and gas extraction waste created "a direct obstacle to Congress' intentions to create a cooperative system . . . to regulate and protect drinking water and any underground processes which might endanger that resource" and was therefore preempted by federal law.[115] If there is a direct conflict with state or local law, federal regulations must prevail.

3. EPA can institute different conditions for primacy as an alternative

While we strongly encourage EPA to condition primacy on state laws providing that utilities have control over full service lines and will pay for full LSLR, if EPA does not do that, it can and should at a minimum require states to have laws stating: a) there is a rebuttable presumption that water systems have control over full lead service lines; and b) utilities are authorized to pay for LSLR, as a condition for primacy.

The details regarding such a rebuttable presumption are discussed in subsection B of this section. In summary, EPA should provide that a water system can rebut the presumption of control only if it can document legally to the satisfaction of the primacy agency and its legal counsel, and the system's CEO certifies to the primacy agency and EPA, subject to penalties for false statements, that it does not at the present and never did have *any* of the following indicia of control:

a. It or its agents installed the LSLs;
b. It required the installation of LSLs;
c. It approved the use of LSLs by property owners or plumbers or required that the materials used in a service line had to be approved by the system;
d. It retained access to service lines on property serviced by the system;
e. It reserved the right to perform work on privately owned service lines;
f. It required property owners to meet certain specifications relating to service line location, size, or material composition;
g. It has or can adopt a new contract of service or tariff that would allow full LSL replacement;
h. It can itself or with the assistance of local government establish the authority to replace full LSLs at utility expense, such as through the shut off of water if a customer or occupant refuses to allow access to conduct LSL replacement.

If any of the above indica of control exist, the water system should be deemed to have control under the LCRI and be required to fully replace all LSLs without charging individual owners for the replacement.

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prevail." *Gonzales v. Raich*, 545 U.S. 1, 29 (2005). This rule holds true "even absent an express statement by Congress." *PLIVA, Inc. v. Mensing*, 564 U.S. 604, 621 (2011). Here, of course, Congress has explicitly included that statement in SDWA § 1414(e).

[115] *Seneca Res. Corp. v. Highland Twp.*, 2017 WL 4354710, at *5 (W.D. Pa. Sept. 29, 2017).

4. EPA should institute accountability for claims of barriers to access

At the very least, if the agency does not adopt provisions recommended above, the final LCRI should: a) require water systems asserting they lack control over/access to a service line to demonstrate that they cannot obtain express or implied access under any legal principle including threatening to shut off the supply of water to a residence in order to further public safety; b) require the agency and primacy states to carefully review replacement plans (and EPA should carefully review state primacy applications) to ensure that any barriers to access are actual barriers and that water systems have considered whether actions such as shutoff authority and express and implied access options do or can give them legal access to the portion of a LSL under private property.

For example, a water system could claim that it lacks access to replace lead service lines, but its primacy state could confirm that current state law authorizes access or adopt a rule requiring all customers to provide access to fully replace LSLs. Or primacy states could require localities to: confirm that current law allows access; pass an ordinance to authorize access; or require utilities to adopt water tariffs or contracts for service that require access.

b. EPA previously presumed that water systems had control over the full lead service lines and should revert to that position

1. Using the definition of control in the 1991 LCR is logical and would help achieve true lead service line replacement, rather than in name only

As noted above, we recommend that the LCRI specifically establish as a condition of primacy that primacy states adopt rules that establish water systems must have access to replace LSLs and to do so at utility expense. EPA's authority to impose such a requirement is discussed above.

If the agency determines it will not establish such a requirement for primacy, at a minimum the agency should revert to the definition of control from the 1991 LCR, establishing a rebuttable presumption that water systems control the entire service line and requiring the system to demonstrate that it does not control the entire service line and cannot obtain permission to replace it from the property owner to be relieved from the requirement to replace it.[116] Thus, as explained by the agency in the original LCR,

> Control is defined in § 141.84(e) of the final rule as being indicated by one of the following forms of authority: authority to set standards for construction, repair, or maintenance of the line, authority of the system to replace, repair, or maintain the service line, or ownership of the line. The final rule includes essentially the same substantive criteria for determining control as was discussed at proposal, including the "rebuttable presumption" procedure.[117]

[116] *See* 56 Fed. Reg. at 26,504, 26,553.
[117] 56 Fed. Reg. at 26,504.

At the time, EPA determined that water systems generally control their service lines, and were responsible for replacing any LSLs they had control over, similar to the position it has taken in the proposed LCRI.[118] The SDWA defines a public water system as including "distribution facilities *under the control* of the operator,"[119] so EPA wanted to mirror that language of control in the LCR. As part of designating which LSLs were under the water systems' control, the LCR established a presumption that water systems controlled the entire service line, unless they could determine that they didn't have one of the forms of authority in § 141.84(e).[120] Put simply, the LCR in many cases gave utilities responsibilities for replacing the portion of the service line on private property regardless of whether they owned it.

Presuming that water systems control the entire service line unless proven otherwise is a standard with a basis in law, utility practice, and common sense.[121] In the late nineteenth and early twentieth century, when most LSLs were installed, most water systems where large numbers of lead service lines were installed either installed lead pipes or required the service line to be made of lead—including the portion installed on private property. For example, Werner Troesken's extensive analysis in his book reviewing the history of the use of lead service lines found that by the turn of the 20th Century, "85 percent of all large American cities used lead" service lines, and "[o]f the twenty-five largest cities, all but two (Baltimore and Kansas City) used lead."[122] Troesken explained that utilities used lead service lines because of their flexibility, durability, and longevity.[123] In addition, the lead industry ran an effective national campaign dating back over a century to persuade water systems and municipalities to use lead for their service lines.[124]

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[118] 40 C.F.R. § 141.84(d) (1991).

[119] 42 U.S.C. § 300f(4)(A) (emphasis added).

[120] 1991 Lead and Copper Rule previously codified at 40 C.F.R. §§ 141.84(d), 141.84(e) (1991) ("(d) A water system shall replace the entire service line (up to the building inlet) unless it demonstrates to the satisfaction of the State under paragraph (e) of this section that it controls less than the entire service line… (e) **A water system is presumed to control the entire lead service line (up to the building inlet) unless the system demonstrates . . . that it does not have any of the following forms of control over the entire line[]: authority to set standards for construction, repair, or maintenance of the line, authority to replace, repair, or maintain the service line, or ownership of the service line**."); 56 Fed. Reg. at 26,504 ("to the extent public water systems prescribe standards for construction, repair, and maintenance of service lines and reserve the right of entry onto private property to perform necessary work, it could be argued that the entire service line is under the system's control.").

[121] In the proposed rule, EPA states that it "is not aware of a factual basis to support the stakeholders' assertion that PWSs control all portions of all service lines. To the contrary, EPA is aware that in some cases, public water systems do not control all portions of all service lines," (citing LSLR Collaborative, n.d.a). 88 Fed. Reg. at 84,923. The references section of the proposed rule provides the following more complete cite: LSLR Collaborative. (n.d.a). *Requiring LSL Replacement When Opportunities Arise*. Retrieved July 17, 2023, from https://www.lslr-collaborative.org/requiring-lslreplacement.html. 88 Fed. Reg. at 85,048. It is not clear what aspect of that website EPA believes supports its statement that public water systems do not control all portions of all service lines. But regardless, EPA need not believe that all public water systems control all portions of all service lines to condition primacy on control or revert back to the version of control the LCR contained in 1991. As discussed above, that version presumes water systems control full lead service lines, but also provides a mechanism to rebut that presumption.

[122] Werner Troesken, *The Great Lead Water Pipe Disaster*, MIT Press, at 10 (2006).

[123] *See id*.

[124] Richard Rabin, *The lead industry and lead water pipes "A Modest Campaign,"* 98 Am J Public Health 1584, 1584-92 (Sep. 2008), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2509614/pdf/0981584.pdf .

Including in the final LCRI a presumption that water systems control the entire lead service line and carry a burden of proving otherwise using the factors from the 1991 LCR would make it more likely that complete LSL replacement would occur. Requiring water systems to prove a lack of control to avoid fully replacing LSLs would be more difficult for water systems to remove LSLs from their replacement pools and thus diminish the easily gamed provision in the proposed rule, discussed further below.

There is no impediment to EPA adopting the definition of and presumption regarding control that it did in 1991. EPA later abandoned this standard after a legal challenge from AWWA alleging that the agency provided insufficient opportunity to comment on the definition. While the D.C. Circuit struck down this portion of the LCR, it did so only on the grounds that EPA had violated the Administrative Procedure Act's notice and comment requirement, holding that because EPA had not defined control in the proposed LCR, putting this definition in the final LCR was not a "logical outgrowth" of the proposal.[125] Notably, the court did not rule on the substance of the definition, so there is no reason to think that returning to the 1991 definition is unlawful or beyond EPA's authority. Indeed, after that D.C. Circuit decision, Congress enacted measures explicitly requiring that lead service lines be fully replaced, expressly including the portion under private property, for a water system to receive funding under the Reducing Lead in Drinking Water Program enacted in 2016[126] and strengthened by the Bipartisan Infrastructure Law (BIL) in 2021.[127] Because EPA does define control in the LCRI, conditions LSL replacement on a water system's control, and specifically requests comment on its interpretation of control for that purpose,[128] inserting a different definition of control in the final LCRI, including reverting to EPA's prior presumption that water systems have control, is a logical outgrowth of the proposed LCRI and would not be vulnerable to the same challenge as it was in 1991.[129]

2. EPA's focus on access in the proposed LCRI supports reverting to the definition of and presumption regarding control from the 1991 rule

The proposed LCRI largely ignores many of the factors it previously found indicated control and focuses on legal access and physical access as the main factors to determine control.[130] But even a focus on those factors supports assuming a presumption of control in the final rule. EPA, however, perplexingly chooses not to adopt such a presumption because "of the wide variation of relevant State and local laws and water tariff agreements as well as the

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[125] *Am. Water Works Ass'n v. EPA*, 40 F.3d 1266, 1274-75 (D.C. Cir. 1994).
[126] Water Infrastructure Improvements for the Nation Act, codified at 42 U.S.C. § 300j-19B(a)(2)(B)(a "'lead reduction project' does not include a partial lead service line replacement if, at the conclusion of the service line replacement, drinking water is delivered to a household through a publicly or privately owned portion of a lead service line.").
[127] BIL, 135 Stat. at 1140-42, codified at 42 U.S.C. § 300j-19B.
[128] *See* 88 Fed. Reg. at 85,033-35.
[129] A final rule is a logical outgrowth if "affected parties should have anticipated that the relevant modification was possible." *Allina Health Services v. Sebelius*, 746 F.3d 1102, 1107 (D.C. Cir. 2014) (quoting *CSX Transp., Inc. v. Surface Transp. Bd.*, 584 F.3d 1076, 1080 (D.C. Cir. 2009)). If the final rule is "reasonably foreseeable," it is considered a logical outgrowth. *Owner-Operator Indep. Drivers Ass'n, Inc. v. Federal Motor Carrier Safety Admin.*, 494 F.3d 188, 210 (D.C. Cir. 2007) (quoting *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 161 (2007)).
[130] 88 Fed. Reg. at 84,920.

potential for these to change over time."[131] The relevant consideration, however, should not be *which* legal authority gives water systems access to remove lead pipes known to present significant health risks, but *whether* water systems generally have that authority. The answer to that question is that they do, which supports EPA including a presumption of control in the final rule.

In the final 1991 LCR, EPA referenced a study that evaluated service connections in 10 major U.S. cities and other investor-owned utilities in various states and found that in the majority of cases, "the water system was found to retain access to virtually all property serviced by the system and to reserve the right to perform work on privately owned service lines."[132] EPA provides no reason to believe differently in the proposed LCRI, and there is no reason for it to do so now.

To this day, utilities generally retain, either implicitly or explicitly, the right to enter private property to do maintenance or make repairs on equipment, including the replacement of water service lines. They obtain this authority in a myriad of ways. For example, some states have laws that require consumers to allow utilities access to their property to replace service lines.[133] Utilities also regularly contractually obtain access to property as a condition for providing service such as in tariffs, sometimes even explicitly for health and safety reasons.[134] Some utilities include such provisions in their customer agreements.[135] Utilities may also have express or implied easements on the basis of intent or public policy, or prescriptive servitude,

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[131] *Id*.

[132] 56 Fed. Reg. at 26,504.

[133] *See, e.g.*, Wis. Stat. Ann. § 196.171(1) ("Any officer or agent of any public utility furnishing or transmitting water . . . to the public . . . may enter, at any reasonable time, any place supplied with . . . water by the public utility, for the purpose of inspecting, examining, repairing, installing or removing the . . . pipes . . . for supplying . . . water and for the purpose of ascertaining the quantity of . . . water supplied."); Va. Code Ann. § 55.1-306.1(A), (E) (defining prescriptive easement and stating a "utility . . . may use an easement to install, construct, provide, maintain, modify, lease, operate, repair, replace, or remove its communications equipment, system, or facilities"); *see also* N.J. Stat. Ann. § 55:19-106.

[134] *See, e.g.*, Pittsburgh Water And Sewer Authority, "Rates, Rules and Regulations Governing the Provision of Water Service to the Public in the Territory Described Herein," (Nov. 15, 2022) at 35 ("Should the condition of a customer service line be such that there is a risk to public health or safety or of damage to public property . . . the Authority shall have the right, but not the duty, to make the necessary repair or replacement."), *available at* https://www.pgh2o.com/sites/default/files/2023-01/CURRENT%20PWSA%20Tariff%20Water%20-%20with%20Supp.%20No.%2010%20%28effective%201.14.23%29%28108742110%29.pdf; Consolidated Edison Company of New York, Inc., "Schedule For Electricity Service," (Apr. 1, 2012) at 107 ("The Company's duly authorized representatives shall have the right of access to the premises of the Customer and to all of the Company's property thereon at all reasonable times for the purpose of reading and testing meters, inspecting equipment used in connection with its service, metering the demand, ascertaining and counting the connected load of the Customer's installation, installing, inspecting, maintaining and replacing, where necessary, its load testing equipment, removing its property, or any other proper purpose except as provided below."), *available at* https://lite.coned.com/_external/cerates/documents/elecPSC10/electric-tariff.pdf, *see also* conEdison, *Information for Property Owners*, (last accessed Feb. 5, 2024), *available at* https://www.coned.com/en/our-energy-future/our-energy-vision/where-we-are-going/smart-meters/when-will-i-get-my-smart-meter#:~:text=See%20an%20excerpt%20from%20the,meters%2C%20inspecting%20equipment%20used%20in.

[135] *See, e.g.,* SUEZ Water Purification Systems, Ltd, "Standard Terms and Conditions" at 4.10 ("The Customer shall permit the company, its employees, sub-contractors, agents and other appointed representatives access to the Site at all reasonable times for the purposes of providing the Services."), *available at* https://www.watertechnologies.com/sites/default/files/documents/SUEZ-WPS-SALES-Standard_Terms_and_Conditions.pdf.

permitting them to access private property.[136] And because removal of lead service lines is a public health issue, public utilities otherwise may be able to validly exercise police powers to protect public health and safety or respond to emergency circumstances to remove a lead service line—a known lead emitter—from a household.[137]

And if circumstances arise where one of the mechanisms for access listed above do not currently apply, it is not difficult, as EPA acknowledges, to change that. As EPA states in the proposed rule, it is "aware of data and anecdotes from water systems demonstrating the ability to increase access for full service line replacement, such as where customer consent or payment is required for access."[138] It also discusses multiple examples of water systems, states, and localities that have amended service agreements or laws to facilitate full lead service line replacement in the proposed rule and partially in its guidance document entitled "Strategies to Achieve Full Lead Service Line Replacement."[139] EPA notably states that it "expects that many water systems could similarly consider, depending on the exact language of the agreement and the process to change it, temporarily or permanently revising service agreements to overcome access barriers to facilitate full service line replacement."[140] We agree. It seems obvious that if a water system conditioned the provision of water on customer agreement for access to their property to replace equipment, access (and thus control) would not be an issue. Based on all of this evidence and reasoning, EPA should presume that water systems have access, and therefore necessary control, over service lines under private property to conduct full lead service line replacement.

It should also be noted that access and control issues would likely be nonexistent if EPA prohibited water systems from charging individual homeowners for service line replacement, as we strongly advocate for in the discussion of banning charging customers for LSLR that follows in section 2.D.v. There are a few ways the LCRI can mitigate this problem. First, EPA can require that water systems bear the entire cost of LSL replacement. As we have repeatedly seen in cases such as Newark, Benton Harbor, Washington, D.C., Denver, and elsewhere, property owners are much more likely to consent to LSL replacement on their properties if they will not be directly billed for it and do not have to individually bear the replacement costs. EPA has the

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[136] *See, e.g.*, *Motes v. PacifiCorp*, 217 P.3d 1072, 1076 (Or. Ct. App. 2009) (holding electric utility had established prescriptive easement for maintenance of electric lines on private property); *Riddock v. City of Helena,* 687 P.2d 1386, 1390 (Mont. 1984) (construction and subsequent use of water pipeline was open and notorious and sufficient to establish adverse use necessary for easement). *See also* Restatement (Third) of Prop. (Servitudes) § 2.11 (2000) (explaining that easements can be implied on basis of public policy to avoid economic waste and to provide access to resources that would otherwise be inaccessible); Restatement (Third) of Prop. (Servitudes) § 2.17 (2000) (explaining that prescriptive easement, which can form when use is "open and notorious" and "continued without effective interruption," can apply to underground utilities as long as installation was open and location known to the owner).

[137] *See, e.g*. 104 N.Y. Jur. 2d Trespass § 53 (trespassory conduct may be legalized or justified by lawful authority when reasonably necessary for emergency services personnel to protect public health and safety and/or respond to emergency); *JWC Fitness, LLC v. Murphy*, 265 A.3d 164, 173-74 (N.J. Super. Ct. App. Div. 2021) (statute authorizes government to take possession of private property akin to a physical taking for the governmental purpose of avoiding or protecting against an emergency, and to temporarily use personal property for purpose of protecting or promoting public health, safety or welfare).

[138] 88 Fed. Reg. 84,920.

[139] *See* 88 Fed. Reg. 84,920-21, 84,926-27.

[140] 88 Fed. Reg. 84,926.

authority to do this and it would not only overcome many barriers to consent, but also remedy environmental injustice as well.[141]

Second, the final LCRI could explicitly allow occupants of a property, rather than solely owners, to consent to LSL replacement. As Newark Water and Sewer Utilities Director Kareem Adeem has emphasized,[142] it is logistically much easier to get consent from tenants at rental properties than it is from landlords (who may be absentee), and it puts the decision in the hands of the people who will most benefit from it. This works best in combination with prohibiting cost-sharing, as it then does not put the tenant in the position of agreeing to spend the landlord's money. This combination was highly effective in Newark, New Jersey, where a local ordinance was passed that both set up a program where the water system replaced all the city's LSLs at no cost to the individual homeowner and gave occupants the power to participate in the program, rather than just property owners. Because Newark has a large renter population, this was the most effective way for the water system to get consent to safely go onto the property.[143] Third, coupled with requiring that systems pay for full LSLRs, the LCRI should prohibit water systems from providing water service to LSLs and GRRs after the conclusion of the mandatory LSLR program. Property owners (or occupants acting in their stead) should have a binary choice: accept a free, full LSLR or have the water service shut off. If water systems are not required to pay the full cost of LSL replacement, then this option should not be considered.

EPA should consider an approach in the final LCRI tracking the Newark and Benton Harbor ordinances, which required full LSL replacement, offering property owners the option of replacing the line at their own expense within a short period of time, or allowing the utility to access and replace the LSL at the water system's expense and with the permission of any adult occupant of the property. This avoids both the potential problem of lack of access and the environmental justice problem of requiring property owners and landlords to pay for LSLR.

By removing the biggest barriers to consent, more systems would complete full LSL replacement within the mandated time period and would not have to spend as much time and energy trying to obtain consent. Currently in the LCRI, if a property with a LSL changes owners, the water system has to go through the process of trying to get consent within a year of the transfer, even if the mandatory LSL replacement deadline has passed. If water systems can get consent earlier and complete full LSL replacement by the deadline, then they can concentrate on issues other than lead service line replacement after the deadline.

c. The proposed LCRI permits water systems to easily avoid replacement of some or all LSLs in their system with no effective mechanism to change such actions

Despite all the evidence EPA has that warrants a presumption of control and facilitate full LSLR, it instead proposes a mechanism that will allow water systems to easily avoid replacing LSLs—sometimes every LSL in their system—and therefore destroy the great promise that mandatory lead service line replacement holds. There are no repercussions for a water system failing to replace LSLs as long as it identifies and cites, in both its replacement plans and notices

[141] See subsection 2.D.v., on prohibiting water systems for charging customers for LSLR, below.
[142] Testimony of Kareem Adeem, section 2.A, Full LSLR Paid For By Water Systems, *supra,* fn. 49.
[143] Testimony of Kareem Adeem, section 2, Full LSLR Paid For By Water Systems, *supra,* fn. 49.

it provides to people with LSLs, "any laws, regulations, and/or water tariff agreements that affect the water system's ability to gain access," for full LSLR, including those that require customer consent and/or require or authorize customer cost-sharing.[144] This allows water systems to easily avoid LSLR by asserting they don't have access and/or any other form of control.

Indeed, assertions of barriers are already happening. For example, many water systems claim they do not have access to or otherwise have control over the portions of LSLs located on private property, even though, as described above, they most likely have access and/or can readily obtain access and have asserted control in other ways in the past.[145] Many water systems also incorrectly claim that state law prevents them from using ratepayer funds to do LSL replacement on private property because it is allegedly for the benefit of a single property owner (and that could prevent access because a property owner may not consent to LSL replacement).[146] Yet in at least the 13 states with the most lead service lines, a study of state laws by Harvard Law School and Environmental Defense Fund investigators determined that those kinds of laws are not barriers to LSL replacement because, for example, LSL replacement is for the benefit of public health rather than a single property owner.[147]

As written, the proposed LCRI provides no incentive for water systems and states to interpret their laws to allow for LSL replacement, nor consequences if they do not. This could lead to a patchwork of LSL replacements across the country and many LSLs left in the ground. Even worse, as drafted, the LCRI also creates a perverse incentive for municipalities and water systems to avoid the costs and burdens of conducting full LSLRs by passing new ordinances, instituting new water service contracts or tariff provisions, or creating other legal restrictions that prohibit a water system from conducting any work on private property, even with property owner consent. As drafted, if such a legal impediment is in place, a water system would conclude that it "does not have access to conduct full service line replacement, [and then] the water system [would not be] required by this rule to replace the line" and need only "document the reasons that the water system does not have access."[148] The LCRI would not even require the water system to attempt to obtain access under proposed section 141.84(d)(3), since the water system would not have access under the LCRI's provisions, even with property owner consent. And of

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[144] 88 Fed. Reg. at 85,064 (§ 141.84((c)(1)(viii); § 141.84(d)(2)(i)).

[145] For example, the City of Chicago required LSLs to be used until they were federally banned in 1986. *See* Municipal Code of Chicago, § 83-23, August 30, 1939 with amendments to and including January 1, 1984 ("Service pipes of one inch internal diameter, one and one-half, and two inch internal diameter shall be lead pipe…."). Yet now the city claims that it does not own the service lines under private property, so any full replacement is the responsibility of the homeowner (unless the city's extremely cumbersome Equity Lead Service Line Replacement program is available to a homeowner. *See* Gina Ramirez, *Years Later, Lead Pipes Remain in Chicago*, NRDC (Sep. 22, 2022), *available at* https://www.nrdc.org/bio/gina-ramirez/years-later-lead-pipes-remain-chicago). It is ironic indeed that under the LCRI, in so many cases where water systems were installing or mandating LSLs (as noted above, according to Troesken, that was 85 percent of cities at the turn of the 20th Century), the water systems can now claim they do not control the LSLs and can offload the costs to replace the very LSLs that they installed or required.

[146] *See* 88 Fed. Reg. at 84,927.

[147] *See, e.g.*, Shaun A. Goho, Marcello Saenz & Tom Neltner, "Rates could fund lead pipe replacement in critical states: Laws in states with the most lead service lines support the practice," Harv. L. Sch. & Environmental Defense Fund (Apr. 2019), *available at* https://clinics.law.harvard.edu/environment/files/2019/04/Rates-Fund-LSL-Replacement-States_Harvard_EDF_2019.pdf.

[148] 88 Fed. Reg. at 85,064 (§ 141.84(d)(2)).

course, the proposal provides no incentive for water systems or localities to change existing barriers to access.

The rule should clarify that any claimed impediment to water system control of a LSL must be preexisting prior to the LCRI's proposal (so utilities and states cannot adopt new impediments to avoid the LSL replacement requirements), and the primacy state and municipality must show that it is beyond their control to eliminate the impediment. As discussed in subsection 2.D.iv.a, primacy states that are unable to eliminate impediments under state law to utilities having control or adequate access to fully replace LSLs should not have their primacy application for implementing the LCRI approved, and EPA should exercise primacy for the LCRI in that state.

EPA claims that the proposal's required identification and reporting provisions will protect against such behavior.[149] The identification provisions for water systems are described above. Under the proposed rule, "[s]tates would also be required to identify potential barriers to full service line replacement in State laws, including statutes and constitutional provisions, in their application for primacy for the LCRI" and to "notify water systems in writing whether any such laws exist or not."[150] EPA's claims are far from guaranteed. While it's certainly optimistic of EPA to think that transparency and knowledge will overcome long-standing opposition or indifference to full LSL replacement, it is unlikely that will be the case in every jurisdiction for a variety of reasons.

First, in states and localities where there are confirmed barriers to access to LSLs (such as legal or physical), there is no information gap. Thus, the reporting provisions are unlikely to have any effect.

Second, by requiring citations to the access barriers and identification by water systems and the state, EPA seems to believe that no disingenuous claims that such impediments exist will occur. We do not agree.

Third, EPA states that identifying these barriers to access will "alleviate misunderstandings" of where those barriers do and do not exist.[151] But the LCRI requires that barriers to access only be identified, not eliminated. The proposed LCRI contains no provisions to incentivize water systems to accurately identify and eliminate barriers, if any, or incentivize states to ensure that water systems are not inaccurately claiming barriers to access.[152] The proposed LCRI does not even require primacy agencies to review a water system's claims that local laws create barriers to access and to determine whether those claims are legitimate, much less require water systems act to remove or seek removal of those legal barriers. The proposal similarly does not require EPA, in reviewing primacy applications, to verify and determine whether state laws that purportedly create impediments to LSL replacement do indeed create such impediments, nor does it require states to eliminate those impediments if they truly exist.

[149] 88 Fed. Reg. 84,920-21, 84,927.
[150] 88 Fed. Reg. at 84,928, 84,920.
[151] 88 Fed. Reg. at 84,927.
[152] We have recommended many improvements to the LCRI's compliance mechanisms above in subsections a & b of this section.

Fourth, EPA also claims that by making these barriers part of the publicly available replacement plan, the public can encourage their state or locality to remove barriers to full LSL replacement.[153] But without a requirement to overcome them, states, localities, and water systems that are already reluctant to prioritize full LSL replacement will be under no obligation to address or eliminate these impediments. EPA's wishful thinking regarding sunshine and a perfect democracy is a far cry from a mandatory requirement to replace all lead service lines in ten years that EPA claims the proposed rule contains.

Finally, EPA is well aware that compliance with the LCR is anemic, with water systems regularly taking inappropriate and often illegal measures to avoid taking action to reduce lead exposure, including LSL replacement.[154] Thus there is ample reason to believe that states and water systems would freely take steps to create and/or "identify" barriers to access to avoid LSL replacement. Oversight will be needed to make sure states' lists of barriers are accurate. Without that oversight, water systems will have no responsibility to replace service lines in their control for which they claim otherwise, and the LCRI's goals will be undermined. But EPA has admitted that it is unable to conduct effective oversight of the LCR.[155] And the proposed LCRI does nothing to fix the compliance and oversight issues.[156]

d. Responses to EPA's Requests for Comment about Control, Access, and Consent

1. *Whether a reasonable effort to obtain property owner consent should be more than four times (e.g., five, six, or seven times).*

The LCRI requires PWSs to try and get consent by making at least 4 attempts using at least 2 different methods before the deadline for LSL replacement. However, if the water system cannot get consent, then "the water system is **not required…to replace any portion of the service line at that address**."[157] Given this provision, EPA must require water systems to do much more to gain consent before giving up and removing the line from the replacement pool. We recommend that water systems attempt to gain consent at least six times using at least two different methods and 1) that at least two of the attempted contacts must be by means of live interaction (e.g. phone call or in-person door knock) and must be conducted at different times of day, including at least once outside of normal working hours (i.e., not between 9am and 5pm); 2) water systems must work with either a city community engagement team or relevant community groups, particularly in environmental justice communities, to create an outreach plan and conduct outreach; 3) if the system requires customers to pay directly for any portion of the LSL replacement, the number of attempts must be doubled; and 4) if a property owner is non-responsive, systems must have an ongoing obligation to attempt to get consent at least annually unless the property owner affirmatively denies access.

[153] 88 Fed. Reg. at 84,928.
[154] *See* section 14: Compliance and Transparency.
[155] *See* section 14: Compliance and Transparency.
[156] *See* section 14: Compliance and Transparency.
[157] 88 Fed. Reg. at 85,064 (§ 141.84(d)(3) (emphasis added)).

2. *Whether the proposed LCRI appropriately interprets "control" for the purposes of the mandatory replacement provision (i.e., require systems to conduct full service line replacement in situations where the system has access to conduct the full replacement).*

As explained above, EPA's interpretation of "control" for the purposes of the mandatory replacement provision should be revised.

3. *The extent to which property owner consent, if required by State or local law or water tariff agreement, might complicate full service line replacement and whether there are additional measures EPA can take to facilitate access through the LCRI.*

Water systems will likely try to take advantage of the LCRI's emphasis on access, particularly by stating that they have physical access to LSLs located on private property only with the property owner's consent. While enhanced requirements to attempt to gain consent, as described above, will make some small strides towards closing this loophole, it does not solve the problem. While EPA claims in the preamble that increased and more robust public education will convince property owners to consent, this is wishful thinking in the context of both rental properties and low-wealth homeowners. This is particularly a problem when combined with the lack of a requirement that the utility pay for the full cost of LSL replacement; it has repeatedly been shown that if the utility demands that the property owner pay for a portion of the LSLR, many or most low income property owners and landlords will not pay and thus will not grant access for full LSLR. Furthermore, while water systems are required to certify to the State the number of service lines not replaced due to customer refusals for access to conduct service line replacement, they are not required to do anything to reduce that number and therefore have no incentive to do anything more than the bare minimum required to gain consent.

As noted earlier in this section, but repeated here in answer to this request for comment, there are a few ways the LCRI can mitigate this problem discussed above. To recapitulate: First, EPA can require that water systems bear the entire cost of LSL replacement. As we have repeatedly seen in cases such as Newark, Benton Harbor, Washington, D.C., Denver, and elsewhere, property owners are much more likely to consent to LSL replacement on their properties if they won't be directly billed for it and don't have to individually bear the replacement costs. EPA has the authority to do this and not only would it overcome many barriers to consent, it would remedy environmental injustice as well.[158] Second, the final LCRI could explicitly allow occupants of a property, rather than solely owners, to consent to LSL replacement. As Newark Water and Sewer Utilities Director Kareem Adeem has emphasized,[159] it is logistically much easier to get consent from tenants at rental properties than it is from landlords (who may be absentee), and it puts the decision in the hands of the people who will most benefit from it. This works best in combination with prohibiting cost-sharing, as it then does not put the tenant in the position of agreeing to spend the landlord's money. This combination was highly effective in Newark, New Jersey, where a local ordinance was passed that both set up a program where the water system replaced all the city's LSLs at no cost to the individual homeowner and gave occupants the power to participate in the program, rather than just property owners. Because Newark has a large renter population, this was the most effective

[158] See section 2.D.v.a-b.
[159] Testimony of Kareem Adeem, *supra,* section 2, Full LSLR Paid For By Water Systems, fn. 49,

way for the water system to get consent to safely go onto the property. Third, coupled with requiring that systems pay for full LSLRs, the LCRI should prohibit water systems from providing water service to LSLs and GRRs after the conclusion of the mandatory LSLR program Harbor. Property owners (or occupants acting in their stead) should have a binary choice: accept a free, full LSLR or have the water service shut off. If water systems are not required to pay the full cost of LSL replacement, then this option should not be considered.

EPA should consider an approach in the final LCRI tracking the Newark and Benton Harbor ordinances, which required full LSL replacement, offering property owners the option of replacing the line at their own expense within a short period of time, or allowing the utility to access and replace the LSL at the water system's expense and with the permission of any adult occupant of the property. This avoids both the potential problem of lack of access and the environmental justice problem of requiring property owners and landlords to pay for LSLR.

By removing the biggest barriers to consent, more systems would complete full LSL replacement within the mandated time period and wouldn't have to spend as much time and energy trying to obtain consent. Currently in the LCRI, if a property with a LSL changes owners, the water system has to go through the process of trying to get consent within a year of the transfer, even if the mandatory LSL replacement deadline has passed. If water systems can get consent earlier and complete full LSL replacement by the deadline, then they can concentrate on issues other than lead service line replacement after the deadline.

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The LCRI's limitation of LSL replacement to only LSLs over which water systems have control, given the LCRI's unduly narrow definition of control, creates potentially major loopholes in the LSL replacement mandate and perhaps a perverse incentive for utilities to make blanket claims about lack of control (or even to adopt local ordinances, tariffs or policies impeding access and control). These loopholes will be compounded in low-wealth communities and communities of color. EPA can and should require water systems to replace all LSLs in their service territory, full stop, and EPA should refuse to grant primacy for the LCRI in states if there are barriers to state primacy agencies enforcing that requirement. at a minimum EPA should revert back to the definition of control in the 1991 LCR, which has a presumption that water systems control all the LSLs in their service territories, and place the onus on water systems and states to certify that this presumption is incorrect and cannot be remedied. If EPA doesn't take either of these approaches, then at a bare minimum, it must prohibit cost-sharing and allow for occupant consent so that consent is not the barrier holding up LSL replacement, and EPA should consider a prohibition on providing water service to LSLs and GRRs after the conclusion of the mandatory (and free to individual property owners) LSLR program to create a strong incentive for property owners to accept a full LSLR at no direct cost to the consumer.

v. The LCRI must prohibit water systems from charging customers for full service line replacements

The LCRI's failure prohibit water systems from charging individual customers for the removal of the lead service lines under their property exacerbates existing disparities, is contrary to law, and frustrates the effort to replace all LSLs nationwide. While the LCRI allows only full

service line replacements to count towards water systems' fulfillment of the replacement mandate, as discussed previously, by not requiring water systems to cover the costs of the full replacement, it is highly unlikely that a water system will replace all or possibly even most of the LSLs in their system.

The LCRI requires that in its service line replacement plan, each water system must include "[a] funding strategy for conducting service line replacement. Where the water system intends to charge customers for the cost to replace all or a portion of the service line because it is authorized or required to do so . . .the funding strategy must include a description of whether and how the water system intends to assist customers who are unable to pay to replace the portion of the service line they own."[160] However, this funding strategy does not place any requirements on water systems that would restrict them from mandating that individual consumers—even low-wealth consumers—pay for LSLR. The answer to whether the water system intends to assist customers in paying for LSLR may be no, and even if it is yes, that yes could be contingent on any number of factors, including how much federal grant money a municipality receives. Furthermore, this provision doesn't address funding for lead service line replacement at rental properties where the landlord simply refuses to pay for the replacement of service lines under their property, regardless of their financial ability to do so. EPA also doesn't impose any consequence if water systems choose not to assist low-wealth customers or if they allow landlords to refuse to pay to replace their LSLs, so there is little incentive for water systems to do so, especially if they can eliminate those service lines from the pool of LSLs they are required to replace.[161]

a. Environmental Justice Concerns

When the burden of funding full LSLRs is borne by individual homeowners, the result is that full LSLRs do not take place consistently or equitably, contrary to numerous federal mandates. The inequitable use of the full LSLR treatment technology closely tracks both income and race; lower income consumers and consumer of color disproportionately miss out on full lead service line replacements and bear the health burden of partial lead service line replacements or complete lack of replacements.[162] EPA is already aware of the unequal impacts of LSLR when individual homeowners are required to pay for replacement, which can result in dangerous partial LSL replacements that pose health risks.[163] A 2019 EPA environmental justice

[160] 88 Fed. Reg. at 85,064 (§ 141.84(c)(1)(vi))).
[161] See discussion of control in section 4.iv.—if water systems don't control/have access to a LSL, they can remove that LSL from the pool they are required to replace. This includes if property owner consent is required and the water system doesn't obtain it.
[162] *See* Karen J. Baehler, Marquise McGraw, Michele J. Aquino, Ryan Heslin, Lindsay McCormick, & Tom Neltner, *Full Lead Service Line Replacement: A Case Study of Equity in Environmental Remediation,* Sustainability 14, 352 (2022), https://doi.org/10.3390/su14010352. *See also,* Jennifer Ortega, *Civil rights complaint draws attention to the discriminatory impacts of common lead pipe replacement practice*, January 7, 2022, available at: https://blogs.edf.org/health/2022/01/07/civil-rights-complaint-draws-attention-to-the-discriminatory-impacts-of-common-lead-pipe-replacement-practice/; Childhood Lead Action Project et al., Complaint Under Title VI of the Civil Rights Act of 1964, 41 U.S.C. § 2000d, 40 C.F.R. Part 7 against Providence Water, Jan. 5, 2022, available at https://www.epa.gov/system/files/documents/2022-06/01RNO-22-R1%20Complaint_Redacted.pdf.
[163] *See generally,* Complaint Under Title VI of the Civil Rights Act of 1964, 41 U.S.C. § 2000d, 40 C.F.R. Part 7 against Providence Water, Jan. 5, 2022, available at https://www.epa.gov/system/files/documents/2022-06/01RNO-

analysis of LCR revisions found that "household-level changes that depend on ability-to-pay will leave low-income households with disproportionately higher health risks."[164] Being a person of color and being low-wealth are risk factors for lead exposure and elevated blood lead levels, and GAO and other reports have found that in many places, people of color, renters, and families in poverty are more likely to live in homes with LSLs.[165] Studies show that low-wealth residents are less likely than their wealthier counterparts to opt to replace the portions of LSLs on private property, presumably because they can't afford to pay for the replacement.[166] Renters make up 36 percent of the U.S. population, and are disproportionately people of color.[167] And as has repeatedly been observed such as in the peer-reviewed Washington D.C. study and as testified to by the director of the Newark Water Department, in areas where rental properties are prevalent, landlords rarely pay for LSLR, meaning that people of color who are renters will disproportionately be drinking lead-contaminated water when cost-sharing is required.[168] Thus, in many communities, possibly the majority, those bearing these higher health risks due to their inability to pay will disproportionately be people of color.

22-R1%20Complaint_Redacted.pdf; Lillian Dorka, EPA, Acceptance of Administrative Complaint, Feb. 10, 2022, https://blogs.edf.org/health/wp-content/blogs.dir/11/files/2022/03/2022.02.10-FINAL-Acceptance-Letter-Complainants-Providence-Water-EPA-Complaint-No.-01RNO-22-R1-NOTES.pdf (showing EPA received administrative complaint); Letter from Dr. Deborah L. Swackhamer, Chair, EPA Science Advisory Board, and Dr. Jeffrey K. Griffiths, Chair, SAB Drinking Water Committee, to Lisa P. Jackson, Administrator, U.S. Environmental Protection Agency, available at: https://perma.cc/DQ7N-SPCC (partial LSL replacements pose health risks); GAO, Drinking Water: EPA Could Use Available Data to Better Identify Neighborhoods at Risk of Lead Exposure, December 2020.(areas with older housing and vulnerable populations (e.g., families in poverty) have higher concentrations of lead service lines). https://www.gao.gov/products/gao-21-78#:~:text=By%20developing%20guidance%20for%20water,vulnerable%20populations%20to%20focus%20lead;

[164] Abt Associates, Environmental Justice Analysis for the Proposed Lead and Copper Rule Revisions, Docket No. EPA-HQ-OW-2017-0300-0008, 8–12 (2019), pg.iv, https://www.regulations.gov/document/EPA-HQ-OW-2017-0300-0008

[165] Abt Associates, Environmental Justice Analysis for the Proposed Lead and Copper Rule Revisions, Docket No. EPA-HQ-OW-2017-0300-0008, 8–12 (2019), pg. iv, https://www.regulations.gov/document/EPA-HQ-OW-2017-0300-0008; United States Government Accountability Office, EPA Could Use Available Data to Better Identify Neighborhoods at Risk of Lead Exposure, GAO-21-78, 12–18; Justin Williams, Data Points: the environmental injustice of lead lines in Illinois, Metropolitan Planning Council, 2020, https://www.metroplanning.org/news/9960/Data-Points-the-environmental-injustice-of-lead-lines-in-Illinois.

[166] Karen J. Baehler, Marquise McGraw, Michele J. Aquino, Ryan Heslin, Lindsay McCormick, & Tom Neltner, Full
Lead Service Line Replacement: A Case Study of Equity in Environmental Remediation, Sustainability 14, 352 (2022), https://doi.org/10.3390/su14010352.

[167] Drew Desilver, Pew Research Center, *As national eviction ban expires, a look at who rents and who owns in the U.S.,* August 2, 2021, https://bit.ly/3oPZs4S ("[A]bout 58% of households headed by Black or African American adults rent their homes, as do nearly 52% of Hispanic- or Latino-led households,"); Joint Center for Housing Studies of Harvard University, *Renter Demographics,* https://www.jchs.harvard.edu/sites/default/files/ahr2011-3-demographics.pdf ("[T]he minority share of renters rose to about 45 percent in 2010—more than twice the minority share of owners.")

[168] *See,* Baehler et al., *supra* n.3 (finding that there were low LSLR rates in lower-income portions of Washington, DC that are predominantly communities of color). The wards in DC in which this study found disproportionately low LSLR are heavily rental properties. See ACS Housing Characteristics DC Ward, https://opendata.dc.gov/datasets/DCGIS::acs-housing-characteristics-dc-ward/explore?location=38.893677%2C-77.014562%2C12.81&showTable=true; Testimony of Kareem Adeem, Director, Newark Water Department, before the House of Representatives, Subcommittee on Environment and Climate Change, Committee on Energy and Commerce, *Trusting the Tap: Upgrading America's Drinking Water Infrastructure,* March 29, 2022, preliminary transcript at 99-106, https://docs.house.gov/meetings/IF/IF18/20220329/114537/HHRG-117-IF18-Transcript-20220329.pdf.

This results in what is essentially two different water systems within the same service territory: one system that exposes consumers to lead that could readily be removed by applying best available technology or techniques (*see* section 2.B, *supra*), and one that does not. This is well-documented in Providence, Rhode Island, which has a loan program property owners can enter into to pay for lead service line replacement on their property. According to a Title VI of the Civil Rights Act complaint that EPA has accepted for investigation, Providence Water has noted that this loan program doesn't make replacements financially feasible for many of their customers, even those who were initially interested in replacing the service line.[169] Renters—who comprise 60 percent of the population—also cannot access the loan program, and are then dependent on landlords to do so on their behalf.[170] These inequalities are seen in other LSL replacement programs that require property owners to pay for LSL replacement on their properties.[171]

EPA notably did not disagree with the likelihood that allowing cost-sharing would lead to environmental injustice. Rather, it stated that it "considered this perspective, but ultimately chose not to ban cost sharing."[172] But that choice is at odds with Executive Order 13,990 from the Biden Administration, which calls upon federal agencies to "advance environmental justice" where the federal government has historically failed to meet its commitment to public health.[173] Given EPA's authority to prohibit cost-sharing, discussed below, EPA must ban it to fulfill Executive Order 13,900. To do otherwise would exacerbate, rather than advance, environmental justice.

b. EPA has authority and responsibility to prohibit charging customers for LSLRs

In the proposed LCRI, EPA sets forth several arguments that stakeholders, like the submitters of these comments, have made to support their contention that EPA has the authority and responsibility to prohibit cost-sharing. EPA responds to only one of those arguments, asserting that it does not believe that PWS "control all portions of all service lines."[174] But as set forth in Section 2.D.iv, PWSs do control service lines, as EPA previously concluded. In any event, as set forth below, there are other provisions in the SDWA and other statutes that provide independent authority to EPA to prohibit cost-sharing.

EPA does not directly address that other authority, but rather says that it considered those perspectives, but chose not to ban the practice.[175] It further says that it is concerned that "such a prohibition would result in the further delay of full service line replacement" because it "would

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[169] LeadSafeKids, Complaint Under Title VI of the Civil Rights Act of 1964, 41 U.S.C. § 2000d, 40 C.F.R. Part 7 against Providence Water, pg 16, https://drive.google.com/file/d/1aWpYMiHYFnpVi2SuFAeUvwZ5S2s6og41/view.
[170] *Id.* at 17.
[171] Baehler et. al., Full Lead Service Line Replacement: A Case Study of Equity in Environmental Remediation, https://doi.org/10.3390/su14010352, at 3
[172] 88 Fed. Reg. at 84,923.
[173] Exec. Order No. 13,990, 86 Fed. Reg. 7,037, 7,037 (Jan. 20, 2021).
[174] 88 Fed. Reg. at 84,923.
[175] *Id.*

be met with a protracted legal challenge that would delay implementation of the rule."[176] Those concerns do not hold water. First, EPA's litigation concerns are based on the straw men that prohibiting cost-sharing would be "direct[ing] how a water system covers the costs of compliance" and "attempt[ing] to assert Federal authority over how water systems charge for their services,"[177] neither of which would result from such a prohibition, as discussed below in subsection 2.d.iv. Second, concern about potential litigation is not a justifiable basis for avoiding legal and moral requirements. In any event, EPA's concern about potential litigation should arise more from a *failure to* follow the law; there are strong arguments that, as discussed immediately below, if EPA does not prohibit cost sharing, it would fail to fulfill its responsibilities under the SDWA, Fair Housing, Act, and Title VI of the Civil Rights Act of 1964.[178] Finally, while litigation might *delay* full service line replacement, a failure to ban cost-sharing will likely *ensure* that *full* service line replacement does not happen at all, for the reasons stated above in subsection 2.d.i.

1. SDWA

Multiple SDWA provisions give EPA the authority to require water utilities to pay to fully replace lead service lines. First, a treatment technique must "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[179] Not requiring systems to fully replace all LSLs does not achieve this requirement, and if individual customers are forced to cover the costs, then full LSL replacement won't happen. Second, EPA must consider "[t]he effects of the contaminant on the general population and on groups within the general population such as infants, children, pregnant women, the elderly, individuals with a history of serious illness, or other subpopulations that are identified as likely to be at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population."[180] The subpopulation here that are at greater risk is low-income people and minority populations (especially Black children) who are demonstrated to have higher risk of exposure to lead from multiple sources including from LSLs,[181] and not requiring utilities to fully replace all LSLs will result in them having higher continuing exposure.[182]

In enacting the SDWA, Congress declared that "safe drinking water is essential to the protection of public health."[183] The SDWA seeks to limit exposure to lead via drinking water and to provide support to "populations affected by the concentration of lead in a public water system" in particular.[184] Sections 1459A and 1459B of the SDWA similarly focus efforts on protecting underserved and disadvantaged communities, demonstrating Congress's intent that

[176] *Id.*
[177] *See* 88 Fed. Reg. at 84,923.
[178] For further detail on these arguments, see Letter from Earthjustice and NRDC to Radhika Fox regarding authority, EPA (Apr. 28, 2023) (attached as exhibit to Section 14).
[179] 42 U.S.C. § 300g-1(b)(7)(A)
[180] 42 U.S.C. § 300g-1(b)(3)(c)(i)(V) (requirement made application to treatment techniques under 42 U.S.C. § 300g-1(b)(3)(c)(ii)),
[181] *See* subsection 2.D.v.
[182] *Id.*
[183] Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182, § 3(1), 110 Stat 1613 (1996).
[184] 42 U.S.C. § 300g-3(c)(5)(A).

these communities benefit from essential lead remediation measures such as full LSLR.[185] Congress' strong emphasis on the importance of addressing lead-contaminated drinking water and fully removing lead service lines for the protection of vulnerable people and disadvantaged communities and households is reflected in section 1459B of the Safe Drinking Water Act,[186] and in the Infrastructure Investment and Jobs Act, which explicitly reserves 49 percent of the $15 billion in funding provided for lead service line replacement for disadvantaged communities.[187]

The LCRR also seeks to prioritize disadvantaged communities for full LSLR. The LCRR requires water systems to create:

> [a] lead service line replacement prioritization strategy based on factors including but not limited to . . . lead service line replacement for disadvantaged consumers and populations most sensitive to the effects of lead; and
> A funding strategy for conducting lead service line replacements which considers ways to accommodate customers that are unable to pay to replace the portion they own.[188]

As noted above, non-white communities are more likely to have LSLs and to be more vulnerable to the effects of additional lead exposure because of existing elevated blood lead levels. And white, wealthier individuals are more likely to benefit from full LSLRs when cost-sharing is used. Such a pattern explains why the LCR requires the Agency to prioritize disadvantaged communities. Prohibiting cost-sharing is a critical step towards meeting these requirements.

2. Fair Housing Act

The Fair Housing Act also supports a prohibition of cost-sharing for LSLRs. The FHA requires agencies to "administer their programs and activities relating to housing and urban development . . . in a manner affirmatively to further the purposes of this subchapter . . . ."[189] The purpose of the FHA is to provide "fair housing throughout the United States."[190] The LCR and SDWA may be considered to "relate to housing" as LSLRs directly affect the safety, habitability and market value of homes and apartments. Lead pipes and plumbing impact where people may decide to live and negatively affect home and apartment values. [191] Indeed, Congress has expressly weighed in on the link between housing habitability and lead pipes, as the SDWA provides that "The Secretary of Housing and Urban Development and the Administrator of the Veterans' Administration may not insure or guarantee a mortgage or furnish assistance with

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[185] Id. at §§ 300j-19a, 19b.
[186] Id. at § 300j-19b.
[187] Infrastructure Investment and Jobs Act, Pub. L. 117-58, § 50104, 135 Stat. 429, 1400 (Nov. 15, 2021).
[188] 40 C.F.R. § 141.84(b)(6)-(7) (2021).
[189] 42 U.S.C. § 3608(d).
[190] Id. § 3601.
[191] See Mike Blackhurst, Do lead water laterals affect property values? A Case Study of Pittsburgh, PA, (April 14, 2019), https://ucsur.pitt.edu/files/center/Lead_and_Property_Sales_2018-04.pdf; Adam Theising, Lead Pipes, Prescriptive Policy and Property Values, 74 Env't and Res. Econ. 2 (Sept. 2019), .

respect to newly constructed residential property which contains a potable water system unless such system uses only lead free pipe, solder, and flux."[192]

Unequal full LSLR (due to cost-sharing) also results in unequal, unfair housing as some will continue to be exposed to lead in drinking water, primarily renters and other residents in low-income and non-white neighborhoods. For this reason, the FHA supports EPA adopting a prohibition on cost-sharing.

Under the FHA, it is also unlawful to "discriminate against any person in . . . the provision of services or facilities . . . because of race, color, religion, sex, familial status, or national origin."[193] This includes equal access to utility services such as water;[194] and likely extends to equal access to lead-safe drinking water. At the very least, the FHA calls for the protections of consumers from increases in lead exposure.[195] Because data shows us that cost-sharing effectively results in increased or continued lead exposure to low-income and non-white users through partial or no LSLR, cost-sharing itself runs counter to the non-discrimination goals and intent of the FHA and may violate the FHA.

3. Title VI

Title VI of the Civil Rights Act of 1964 prohibits programs or activities that receive federal funding from discriminating on the basis of race, color, or national origin. A state or public water systems' use of funds received from EPA[196] must comply with both Title VI and EPA's implementing regulations. A recipient of EPA assistance may not, on the basis of race or other protected ground, "[d]eny a person any service, aid or other benefit of the program or activity," "[p]rovide a person any service, aid or other benefit that is different, or is provided differently from that provided to others under the program," or "[r]estrict a person in any way in the enjoyment of any advantage or privilege enjoyed by others receiving any service, aid, or benefit provided by the program."[197]

Based on the facts described in the Environmental Justice concerns subsection 2.D.v., it is evident that EPA's failure to prohibit cost-sharing in the proposed LCRI could have significant implications for the distribution of benefits from the rule, and for the distribution of exposure to

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[192] 42 U.S.C. 300g-6, note, entitled "Ban on Lead Water Pipes, Solder, and Flux in VA and HUD Insured or Assisted Property," added by section 1417(c) of Pub. L. 99–339.
[193] 42 U.S.C. § 3604(b).
[194] *See Kennedy v. City of Zanesville*, 505 F. Supp. 2d 456, 499 (S.D. Ohio 2007) ("The Civil Rights Acts and the Fair Housing Act, along with the other federal statutes which form the basis of Plaintiffs' complaint, clearly establish Plaintiffs' right not to be discriminated against on the basis of race in their procurement of water, a vital resource." (internal citations omitted)); *Cooke v. Town of Colo. City*, 934 F. Supp. 2d 1097, 1113-15 (D. Ariz. 2013) (finding that plaintiffs established a prima facie case for Fair Housing Act discrimination based on the denial of water service).
[195] The FHA requires "some direct relation between the injury asserted and the injurious conduct alleged." *Bank of America Corp. v. City of Miami, Fla.*, 581 U.S. 189, 202-203 (2017) (internal citations omitted). There is a direct link between cost-sharing and unequal removal of full LSLs, resulting in increased or continued lead exposure.
[196] States and PWSs receive assistance related to LSLRs through various EPA programs including the Drinking Water State Revolving Funds, Water Infrastructure Improvements for the Nation (WIIN) Grants, and Public Water System Supervision (PWSS) State and Tribal Support Program Grants.
[197] 40 C.F.R. § 7.35(a)(1)-(3).

lead-contaminated drinking water. In particular, permitting LSLR under a cost-sharing model will likely result in widespread denial of benefits to members of low-income communities, with a disproportionately heavy toll on communities of color. EPA should consider these distributional impacts when finalizing the LCRI and select the path that most effectively avoids creating or perpetuating disproportionate burdens on classes of persons who are protected by the Civil Rights Act—prohibiting cost-sharing.

c. Madison, Wisconsin's LSLR program is not comparable to the LCRI

EPA points to Madison, Wisconsin as an example that demonstrates that charging property owners is not a barrier to full LSL replacement[198] but that example is inapt here. Madison replaced all of its lead service lines while allowing the water system to charge property owners for replacing the portion of the LSL on their property. However, Madison's program isn't identical to the LCRI's replacement program and has some important differences that make them incomparable. First, Madison passed an ordinance requiring property owners to replace any and all LSLs on their properties.[199] Because the requirement was on property owners, not water systems, there was no discussion of control or access. By contrast, the proposed LCRI tells water systems that they aren't required to replace LSLs that they don't control. This incentivizes water systems to claim not having control over as many LSLs as possible so that they don't have to count them in the pool for mandated replacement.[200] Madison didn't allow for this option.

Second, Madison imposed a penalty for non-compliance by property owners of $50-$1000 per day. Since the average cost of replacing the private side of the LSL was $1340 without reimbursement, and an average of $670 with reimbursement, the penalty amount could quickly overtake the cost of replacing the LSL, incentivizing replacement.[201] No such provision exists in the LCRI, so there is no "stick" for property owners (such as landlords) who choose not to pay for the replacement of LSLs on their property.

Third, Madison's program allowed customers to receive reimbursement from the water system of half the cost of LSL replacement up to either $1000 or $1500, depending on when they applied.[202] If they still couldn't afford the rest of the cost, they could apply for financing through the city.[203] Madison estimated that the average cost to property owners through their program was $670.[204] The LCRI doesn't mandate any reimbursement by water systems, nor financing options from municipalities. Again, the exclusion of these crucial parts of Madison's program from the proposed rule sharply cuts against the likelihood that the LCRI will achieve the same results as Madison.

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[198] 88 Fed. Reg. at 84,912, 84,923.
[199] https://www.cityofmadison.com/water/water-quality/lead-copper-in-water/information-for-utilities-on-lead-service-replacement.
[200] *See supra* Section 2.D.iv (control section)
[201] *See* https://www.cityofmadison.com/water/water-quality/lead-copper-in-water/information-for-utilities-on-lead-service-replacement.
[202] *Id.*
[203] *Id.*
[204] *Id.*

Fourth, Madison was a higher-than-average income area during the period it was completing its LSL replacements. From 2000 to 2012, the per capita personal income in Madison increased from $33,692 to $47,560.[205] By contrast, the national per capita personal income increased only from $29,891 to $43,721 over the same period—starting from a lower income and not rising as high as Madison's.[206] Likewise, the median household income in Dane County, WI, which contains Madison, grew from $51,150 to $60,119 from 2000 to 2012,[207] while nationally the median household income over the same period stayed below Dane County's median income from 2000.[208] This is another reason why it is unlikely that replicating Madison's program in a lower-wealth area would produce the same results, and as stated above, the LCRI doesn't contain any of the penalties or incentives that led to Madison's success.

Finally, the cost borne by Madison property owners was far less than the present-day cost of replacing the portion of an LSL under private property. Madison implemented its program in 2000 and removed all of its LSLs by 2012. The city required a cost-share from property owners, although it reimbursed half of the replacement costs up to a certain amount, resulting in an average cost to the property owner of $670.[209] EPA's current cost estimate for a "customer side" LSL replacement is several times greater than Madison's reported average cost to the property owner, even when accounting for inflation.[210] If property owners had to shoulder the full cost of replacing the portion of the line under private property, at current costs, full lead service line replacement would be completely out of reach for many low-wealth homeowners and likely would be viewed by many landlords as not worth paying for. The only foolproof way to ensure that all lead service lines are completely replaced—and that current disparities in replacement are not exacerbated—is for the final LCRI to mandate that water systems pay for complete LSL replacement.

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[205] https://fred.stlouisfed.org/series/MADI555PCPI
[206] https://fred.stlouisfed.org/series/A792RC0Q052SBEA
[207] https://fred.stlouisfed.org/series/MHIWI55025A052NCEN
[208] Median Household income in the United States was $41,990 in 2000 and $51,020 in 2012. https://fred.stlouisfed.org/series/MEHOINUSA646N.
[209] https://www.cityofmadison.com/water/water-quality/lead-copper-in-water/information-for-utilities-on-lead-service-replacement.
[210] In the Economic Analysis (EA) supporting the proposed LCRI, EPA estimates a $4,399 mean cost (in 2020 dollars) for replacement of the portion of a lead service line under private property, which the EA refers to as a "customer-side replacement." *See* Economic Analysis for the Proposed Lead and Copper Rule Improvements, Appendix A, Exhibit A-2, https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712. In the EA, EPA used the "ENR Construction Cost Index" to adjust cities' reported LSLR costs for inflation. (The index is reproduced in the LCRI docket in a spreadsheet titled "LSLR Unit Cost Analysis," https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0521.) For purposes of comparison to EPA's cost estimates, Madison's stated costs can be converted to 2020 dollars using the same index. Although Madison provided a $670 average cost to the property owner for replacement of the portion of the LSL under private property, the city did not specify which year's dollars it used to calculate those costs. Since Madison's program spanned from 2000 to 2012, it would be reasonable (and likely a conservative assumption) to treat the costs as being expressed in 2006 dollars, the mid-point of the program. Applying the ENR Construction Cost Index, $670 in 2006 dollars is equivalent to $991 in 2020 dollars—far less than the EA's average customer-side replacement cost of $4,399. The inflation-adjusted cost in Madison is also far less than the average customer side replacement costs estimated in an independent report by Safe Water Engineering (Jan. 2024), which is attached to this comment letter. *See infra* section 12.

d. EPA's concerns that prohibiting cost-sharing would impermissibly encroach on state and local authority are unfounded

EPA expresses concern over prohibiting cost-sharing because it "has not used its section 1412 authority under SDWA to direct how a water system covers the costs of compliance with a national primary drinking water rule, which is, at its core, a matter of State and local law.[211] This concern is unfounded. Although Madison replaced its LSLs while directly billing homeowners, many other systems have not done so. EPA in fact acknowledges that many water systems have funded and financed full lead service line replacement using a variety of mechanisms, including the Drinking Water State Revolving Funds, HUD block grants, rate revenues, and revenue from other sources.[212] Requiring water systems to pay for the full cost of LSL replacement doesn't mandate that a water system use any or all of these mechanisms, just that they pay for it in any way that is not directly billing the owner of the property the LSL is located on. EPA need not prescribe any particular funding or financing mechanism. All the agency need do is count all of the lead service lines within a water system as part of the pool for replacement[213] and then say that a water system can report that those lines have been replaced only if the water system either covered the costs of replacing the lines or a property owner refused the water system's offer to cover the costs and instead paid for it themselves.

EPA also raises concerns that prohibiting cost-sharing would constitute an "attempt to assert Federal authority over how water systems charge for their services,"[214] which likely reflects a concern by some water systems that they are prevented from using ratepayer funds to replace the portions of LSLs on private property. Again, a prohibition on cost-sharing in no way directs water systems to choose any of the myriad of ways they can finance LSLR.

Indeed, a variety of mechanisms have been and can be used to pay for LSLR. While every state is unique and has different state and local laws, since we don't propose that the LCRI mandate any one particular funding source, water systems would be free to use any funding source or combination of funding sources that cover the costs of full LSL replacement and are allowed under applicable law.

For example, utilities are allowed (under federal law) to use tax-exempt bonds to finance LSLR on private property, backed by the ratepayer revenue to repay the bonds. (In other words, neither state nor federal law prohibits utilities from funding and financing LSLR the same way they do for any other capital project.) Other municipalities, such as Newark, New Jersey,[215] used tax exempt municipal bonds to pay for full LSL replacement. Bonds are a good example of utilities' ability to finance full LSLR. Bonds are typically repaid via ratepayer funds or other revenues like local taxes. Bonds can be used for water system work that benefits the entire water

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[211] 88 Fed. Reg. at 84,923.
[212] https://www.epa.gov/ground-water-and-drinking-water/lslr-financing-case-studies.
[213] *See* Section 2.C.
[214] 88 Fed. Reg. at 84,923.
[215] City of Newark, *News, Newark's Lead Service Line Replacement Program is a Model for the Nation* (June 12, 2020), *available at* https://www.newarknj.gov/news/newarks-lead-service-line-replacement-program-is-a-model-for-the-nation.

system or protects public health.[216] Water systems frequently use bonds to finance capital projects like full LSLR.[217] Debt financing full LSLRs (i.e., including the portion located on private property) is allowed under Regulated Operations accounting so long as the utility has a governing board with a rate setting authority, which nearly all do, and can commit to collecting rates in the future to cover the costs. This is done by booking the replacement program as a "regulated asset" under GASB Statement No. 62.[218] Denver Water did just this and successfully bond financed the on-going replacement of 64,000-84,000 lead service lines, including portions located under private property, at no direct cost to those property owners.[219] Also, as discussed elsewhere in these comments and touted in the LCRI's preamble, there are multiple other funding sources for full LSLRs, including various federal funding programs.

It is also not clear that the concern about whether state law permits the use of rate payer funds for LSLR is warranted. None of the thirteen states with the most LSLs prohibit the use of ratepayer funds to replace LSLs on private property. In fact, six of those states actively support using ratepayer funds for this purpose.[220] At least one other state also doesn't prohibit the use of ratepayer funds under the theory that while paying for LSL replacement on one particular property may benefit that property owner, replacing those LSLs ultimately decreases the cost of treatment for lead, such as corrosion control, which benefits all of the water system's customers.[221] Using rate revenues to finance full LSLRs is more equitable than cost-sharing and can be done by structuring local water rates in a way that does not disproportionately affect low-income customers.[222] It would be an anomaly and bad precedent to allow PWSs to pass the cost

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[216] Waterloop Podcast, Episode #184, Funding To Fight Lead: Using Municipal Bonds, https://youtu.be/pN8XDsAzzfg?si=XC3gitV2C06UMvpA&t=1057 (2023); *see* Melissa L. Kelly, Caroline Koch, Cynthia Koehler & Alejandro E. Camacho, Tap Into Resilience: Pathways For Localized Water Infrastructure (2021) at 24-33, https://www.law.uci.edu/centers/cleanr/news-pdfs/tap-into-resilience-report.pdf.

[217] *Id.* at 26, stating "Municipal bonds have long been the debt-financing vehicle of choice for cities and public water agencies." *See also,* Waterloop Podcast, Episode #176, Funding To Fight Lead: How Denver Did It, https://youtu.be/p1DBOeNCGjY?si=K5DkAM0DHHC2rWGW&t=248; Denver Water, Water Revenue Bond Series 2022A, https://emma.msrb.org/P21617408-P21246188-P21670639.pdf (citing the Lead Reduction Program as a regulated asset). *See also https://www.newarknj.gov/news/newarks-lead-service-line-replacement-program-is-a-model-for-the-nation*.

[218] Governmental Accounting Standards Board, Implementation Update, Statement No. 62, Question 4.4, https://gasb.org/document/blob?fileName=GASB%20Implementation%20Guide%20No.%202018-1,0.pdf; Waterloop Podcast, Episode #176, Funding To Fight Lead: How Denver Did It, https://youtu.be/p1DBOeNCGjY?si=OgyIjvCtxNEMAZ1l.

[219] Waterloop Podcast, Episode #176, Funding To Fight Lead: How Denver Did It, https://youtu.be/p1DBOeNCGjY?si=K5DkAM0DHHC2rWGW&t=248; Denver Water, Lead Reduction Program, Lead Service Line Replacement, https://www.denverwater.org/your-water/water-quality/lead/lead-service-line-replacement-program; Denver Water, Water Revenue Bond Series 2022A, https://emma.msrb.org/P21617408-P21246188-P21670639.pdf (citing the Lead Reduction Program as a regulated asset).

[220] Shaun Goho, Marcello Saenz, Tom Neltner, *Rates could fund lead pipe replacement in critical states: Laws in states with the most lead service lines support the practice*, April 2019, https://clinics.law.harvard.edu/environment/files/2019/04/Rates-Fund-LSL-Replacement-States_Harvard_EDF_2019.pdf, at ii-iii.

[221] https://www.epa.gov/ground-water-and-drinking-water/lslr-financing-case-studies (Spokane, Washington case study)

[222] Philadelphia, for example, uses income-based water rates and Detroit uses "lifeline" income-based rates. Brett Walton, Circle of Blue, *Philadelphia Water Rate Links Payments to Household Income* (May 16, 2017), https://www.circleofblue.org/2017/water-management/pricing/philadelphia-water-rate-linkspayments-household-

of a LSLR directly to the customer on whose property the line lies. Water systems frequently perform work that directly affects one household or a small group of houses, without prorating costs. For example, PWSs replace customers' water meters without passing on the cost directly to the customer receiving the new meter, and PWSs do not seek reimbursement for funds related to water main maintenance or upgrades from only those individuals directly benefiting from the water main work. Neither do water systems charge individual property owners for water used by a fire department to douse a fire at their property. Just as fire suppression protects the health and safety not only of the residents of the affected home but of others in the community, reduction of lead threats to health protects not only residents of the affected home but also provides community benefits in the form of reduced health care costs, reduced special education costs, and other large societal benefits.[223]

Allowing piecemeal cost recovery for LSLRs (or water main or water meter work) would be inefficient and also could set a bad precedent. One can envision a scenario where allowing cost-sharing in this instance inspires utilities to prorate the costs of other projects and require payment by individual customers.

If, however, water systems or states believe state or local laws prohibit any possible funding source for full LSL replacement other than the property owner covering the costs, as discussed in the LCRI primacy section 2.C.ii. above, EPA should not approve primacy for that state unless it removes state law barriers and adopts a program to ensure that utilities can be required to pay for full LSL replacement. In the alternative, if the agency chooses not to go that route, EPA should require the systems to state the barriers to utility funding of full LSLR in their replacement plans as well as any other barriers to funding, the basis for that belief, and why the utility cannot eliminate such impediments. The state primacy agency should be required to review the replacement plan and confirm this prohibition to EPA. If the state primacy agency does not confirm the state or local law prohibition, they must inform the water system, and the water system would have to eliminate cost-sharing. The LCRI should also explicitly prohibit impediments created by laws or policies adopted after the LCRI was proposed to excuse utilities from paying for full LSLR. Otherwise, recalcitrant utilities could be incentivized to adopt new rules, tariffs, or policies that block this approach after the rule was proposed. These mechanisms would minimize the risk of any potential protected legal challenge that could keep the LCRI from going into effect and would also make it much more difficult, if not impossible, for water systems that don't want to pay for full LSL replacement to avoid doing so simply by asserting that there are impediments to their doing so.

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income/; City of Detroit, *Lifeline Plan* (last visited Jan. 30, 2024), https://detroitmi.gov/departments/water-and-sewerage-department/dwsd-customer-service/dwsd-here-help-water-assistance-programs/lifeline-plan. Section 13 of our comment letter provides additional discussion of these and other approaches water systems can use to generate revenue for capital improvements—including utility-funded full lead service line replacements—without imposing unaffordable costs on low-income customers.

[223] See, Erik D. Olson, "Getting the Lead Out: Removing Lead Pipes Would Yield Hundreds of Billions of Dollars in Health Benefits," NRDC 2023, https://www.nrdc.org/sites/default/files/2023-10/getting-lead-out-health-benefits-ib.pdf (documenting overwhelming economic benefits of removing lead service lines).

E. EPA should help guide selection of materials used in replacement service lines, and take steps to ensure those materials are safe

EPA should use its authorities under the SDWA and other laws to ensure that the manufacture, installation, and use of replacement service lines does not bring a new set of health and environmental concerns. At a minimum: (1) EPA should give guidance to state and local governments to inform their selection of alternative materials that may be used in replacement services lines to avoid regrettable substitutions, as it is inefficient for governments all over the country to do this research on their own. EPA should advise that copper is the best alternative material due to serious concerns with the use of plastics of all types and because plastics have an expected life of about half of that of copper. (2) To the extent there are gaps in understanding benefits and disadvantages of alternative service line materials on water quality, health effects, service life, and lifecycle costs, EPA should take responsibility for ensuring that research to fill those gaps is underway or commenced expeditiously. (3) Finally, once EPA has identified what substances might leach from service lines made from the potential alternative materials, EPA should swiftly consider establishing drinking water standards and health advisories for such substances (or if there are such standards or advisories for these chemicals, whether they are health protective.) If any existing standards or advisories have gaps or are not health protective, EPA should expeditiously begin the process of updating the standards and levels (and/or adopting appropriate treatment techniques). We elaborate on these points below.

i. EPA should give guidance on replacement material that urges use of copper rather than plastics

EPA would be missing an important opportunity to protect human health and the environment if it does not provide guidance to state and local governments regarding what material to use in replacement service lines. Commenters understand that the universe of alternative materials is effectively limited to copper or various types of plastic (e.g., polyvinyl chloride ("PVC"), chlorinated PVC ("CPVC"), cross-linked polyethylene ("PEX"), high-density polyethylene ("HDPE")). **We strongly urge EPA to recommend use of copper in replacement service lines, rather than plastic of any type**.

a. EPA should recommend use of copper service lines because of the harms caused by production and disposal of plastic

Avoiding use of plastic services lines is imperative because toxic pollution and greenhouse gases are created during *production and disposal* of plastic pipes. First, producing and disposing of plastics, and transportation of plastics feedstock such as vinyl chloride, are linked to serious human health harms – and these harms are experienced disproportionately by fenceline communities near petrochemical and waste disposal facilities.[224] In addition, as was recently highlighted in the East Palestine, Ohio derailment of multiple tank cars filled with vinyl chloride, fenceline communities near transportation

[224] See Comments of Air Alliance Houston, et al. to EPA, *Draft National Strategy to Prevent Plastic Pollution* (April 2023), Docket ID No. EPA–HQ–OLEM–2023–0228-0276 ("Comment on Draft Plastic Strategy"), at 6-20 and citations therein, which are incorporated here by reference; Beyond Plastics, The Perils of PVC Plastic Pipes, 2023, https://www.beyondplastics.org/publications/perils-of-pvc-pipes.

hubs and corridors are also at serious risk from transport of plastics feedstocks.[225] Due to residential racial segregation, expulsive zoning[226] and environmental racism in the siting of production and disposal facilities, the residents of these communities are disproportionately people of color. [227] Second, producing and disposing of plastics is linked to harms[228] Third, producing and disposing of plastics and their fossil fuel feedstocks contributes to climate change, and any actions that promote increased use of plastic will make it harder for the United States to meet its climate commitments (and perhaps its commitments under the global plastics treaty that is currently being negotiated)[229] Moreover, since source reduction is the primary and best way to prevent pollution[230] any increased demand for plastics to manufacture replacement services lines would be at odds with the emerging consensus that reducing plastic pollution is essential, as reflected in EPA's Draft National Strategy to Prevent Plastic Pollution[231]

b. EPA should recommend use of copper to avoid drinking water contamination from plastic service lines by hazardous chemicals and micro- and nanoplastics

Not only is plastic linked to harmful pollution at the manufacturing and disposal stages, *use* of plastic products results in toxic exposures and resulting health risks. This is because plastic is made of a mixture of chemicals – building block polymers, additives, and impurities/residuals. Several of the building block plastic polymers are made from monomers that are highly toxic (e.g., PVC is made from the carcinogenic vinyl chloride monomer).[232] Moreover, chemicals in monomer form are added to the polymers to achieve certain characteristics or functions, such as plasticizers, flame retardants and stabilizers; other chemicals are present in plastics as impurities or residues from the manufacturing process, such as residual

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[225] Sun W. (2023). The Devastating Health Consequences of the Ohio Derailment: A Closer Look at the Effects of Vinyl Chloride Spill. *International journal of environmental research and public health*, *20*(6), 5032. https://doi.org/10.3390/ijerph20065032

[226] Ana Isabel Baptista, et al., *U.S. Municipal Solid Waste Incinerators: An Industry in Decline*, Tishman Env't and Design Ctr., at 13-14 (May 2019), https://www.no-burn.org/wp-content/uploads/2021/03/CR_GaiaReportFinal_05.21-1.pdf.

[227] Toxic Free Future, PVC Poison Plastic: An investigation following the Ohio train derailment of widespread vinyl chloride pollution caused by PVC production (April 13, 2023), at 8-10, https://toxicfreefuture.org/wp-content/uploads/2023/04/Report-PDF-PVC-Poison-Plastic-Investigation-4.pdf.

[228] See Comment on Draft Plastic Strategy at 20-24 and citations therein, which are incorporated here by reference.

[229] Comment on Draft Plastic Strategy, at 4-6 and citations therein, which are incorporated here by reference.

[230] Carol M. Browner, *Pollution Prevention Policy Statement,* EPA (June 15, 1993), https://www.epa.gov/p2/pollution-prevention-policy-statement (last updated June 13, 2023); *see also* 42 U.S.C. § 13101 (establishing a "national policy of the United States that pollution should be prevented or reduced at the source whenever feasible" because "[s]ource reduction is . . . more desirable than waste management and pollution control.").

[231] EPA, *EPA's Draft National Strategy to Prevent Plastic Pollution: Part of a Series on Building a Circular Economy for All*, Off. of Res. Conservation and Recovery, EPA Doc. No. EPA 530-R-23-006 (Apr. 2023) ("Draft Strategy"), https://www.epa.gov/system/files/documents/2023-04/Draft_National_Strategy_to_Prevent_Plastic_Pollution.pdf.

[232] Lithner, D., Larsson, A., & Dave, G. (2011). Environmental and Health Hazard Ranking and Assessment of Plastic Polymers Based on Chemical Composition. *The Science of The Total Environment*, *409*(18), 3309–3324. https://doi.org/10.1016/j.scitotenv.2011.04.038.

vinyl chloride monomer in PVC.[233] A recent analysis by the European Chemicals Agency ("ECHA") found 470 chemical additives currently in use in PVC, of which 63 were found to have high or medium hazard scores.[234] While the identities of some plastic additives are unknown, we know that many are members of classes of chemicals that are linked to serious health harms, such as per- and polyfluorinated alkyl substances ("PFAS"), ortho-phthalates, and halogenated or organophosphate flame retardants.[235] Moreover, as noted in the ECHA 2023 PVC Report, the potential for co-exposure to plastics additives that leach or migrate into drinking water is an additional cause for concern.[236]

As a general matter, most of the additives present in plastics are not bound to their base plastic fibers, and thus they "can be released at all stages of the plastics' life-cycle," including during use.[237] While the leaching of toxic chemicals from plastic water pipes into drinking water appears to be less well-studied than migration of plastic additives from consumer products and food packaging,[238] several studies by well-regarded independent researchers indicate that chemicals of concern leach into drinking water during routine use of plastic pipes. For example, vinyl chloride monomer has been found to leach from PVC and CPVC piping and to be produced as a secondary disinfection byproduct[239]; ortho-phthalates were found to leach from CPVC and PEX pipes[240]; and 20-30 organic compounds (some unidentified) have been found to migrate

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[233] U. N. Env't Programme, *Chemicals in Plastics - A Technical Report* (2023), https://wedocs.unep.org/20.500.11822/42366 ("U.N. Env't Programme"), at Executive Summary xii, 4. This United Nations report found that "more than 13,000 chemicals are associated with plastics and plastic production …, of which over 3,200 monomers, additives, processing aids and non-intentionally added substances are of potential concern due to their hazardous properties . . . includ[ing] carcinogenicity, mutagenicity, reproductive toxicity, specific target organ toxicity, endocrine disruption, ecotoxicity, bioaccumulation potential, environmental persistence and mobility, including potential for long-range environmental transport to remote locations." U.N. Env't Programme, at Executive Summary xii.

[234]European Chemicals Agency, Investigation Report on PVC and PVC Additives (November 11, 2023), https://echa.europa.eu/documents/10162/17233/rest_pvc_investigation_report_en.pdf/98134bd2-f26e-fa4f-8ae1-004d2a3a29b6?t=1701157368019 ("2023 ECHA PVC Report"), at 2, 8-15.

[235] U.N. Env't Programme, at 7 (Figure 2), 12–17.

[236] 2023 ECHA PVC Report, at 16.

[237] Zimmermann, L., Dierkes, G., Ternes, T. A., Völker, C., & Wagner, M. (2019). Benchmarking the in Vitro Toxicity and Chemical Composition of Plastic Consumer Products. Environmental Science & Technology, 53(19), 11467. https://doi.org/10.1021/acs.est.9b02293.

[238] A leading researcher in this field identified major data gaps related to chemical migration from polymeric pipes (in 2012), noting that these gaps pose a challenge to environmental engineers who strive to select the best pipe. Whelton, Andrew & Nguyen, Tinh. (2012). Contaminant Migration From Polymeric Pipes Used in Buried Potable Water Distribution Systems: A Review. Critical Reviews in Environmental Science and Technology - CRIT REV ENVIRON SCI TECHNOL. 43. p.731. 10.1080/10643389.2011.627005, available for full download at: https://www.researchgate.net/profile/Andrew-Whelton-2/publication/254216816_Contaminant_Migration_From_Polymeric_Pipes_Used_in_Buried_Potable_Water_Distribution_Systems_A_Review/links/551b538d0cf2bb754078cfdd/Contaminant-Migration-From-Polymeric-Pipes-Used-in-Buried-Potable-Water-Distribution-Systems-A-Review.pdf?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19 .

[239] Walter RK, Lin PH, Edwards M, Richardson RE. Investigation of factors affecting the accumulation of vinyl chloride in polyvinyl chloride piping used in drinking water distribution systems. Water Res. 2011 Apr;45(8):2607-15. https://doi.org/10.1016/j.watres.2011.02.016. Epub 2011 Feb 19. PMID: 21420710.

[240] Derek R. Faust, Kimberly J. Wooten, Philip N. Smith; Transfer of phthalates from c-polyvinyl chloride and cross-linked polyethylene pipe (PEX-b) into drinking water. *Water Supply* 1 March 2017; 17 (2): 588–596. doi: https://doi.org/10.2166/ws.2016.164

from polyethylene pipes (PEX and others) into drinking water in Denmark[241]. In addition, a review of the scientific literature on contaminants migrating from pipes used in drinking water systems into drinking water found migration of a host of substances, including BPA, phthalates, nonylphenol, PFAS, and microplastics --- and the type of pipe used had an important role in the levels of migration of chemicals (though most of the studies were conducted outside the United States).[242] In sum, there is concerning evidence that plastic service lines may be a source of exposure to a complex brew of toxic additives. While the levels of exposure may be low (though we do not know this), a mixture of dozens of low-level toxicants in drinking water could present chronic hazards that are far greater than any individual substance in isolation—especially for people who are highly susceptible and/or already exposed to many toxic substances from sources other than drinking water.

An additional concern with all plastic pipes is that micro- and nanoplastics will be released from the pipes into drinking water as a result of water abrading the pipe, resulting in exposure. According to the 2023 ECHA PVC Report, microparticle releases function as the main carrier for plastic additive releases, which are expected to be very persistent in the environment (and the human body). The report notes that for PVC, in particular, the additive releases are likely to be higher than for other plastics because there are generally higher additive concentrations in PVC than other plastics.[243] The potential that drinking water is a vector for microplastics resulting from fragmentation of plastic service lines is concerning because of an emerging consensus that microplastics themselves pose health hazards.[244]

EPA should give serious consideration to the implications of potentially widespread use of plastic service lines for the agency's drinking water monitoring rules and contaminant standards. If it is confirmed that toxic chemicals and micro- and nanoplastics of health concern are released into drinking water by these plastic service lines, monitoring for these chemicals

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[241] Brocca, D., Arvin, E., & Mosbaek, H. (2002). Identification of organic compounds migrating from polyethylene pipelines into drinking water. *Water research*, *36*(15), 3675–3680. https://doi.org/10.1016/s0043-1354(02)00084-2 Studies of PEX pipe in the United States have also found chemical leaching during the use phase. Robert Phillips, Andrew J. Whelton, Matthew J. Eckelman, Incorporating use phase chemical leaching and water quality testing for life cycle toxicity assessment of cross-linked polyethylene (PEX) piping, Science of The Total Environment, Volume 782, 2021, 146374, ISSN 0048-9697, https://doi.org/10.1016/j.scitotenv.2021.146374. (https://www.sciencedirect.com/science/article/pii/S004896972101442X); *see also* Connell, M., Stenson, A., Weinrich, L., LeChevallier, M., Boyd, S.L., Ghosal, R.R., Dey, R. and Whelton, A.J. (2016), PEX and PP Water Pipes: Assimilable Carbon, Chemicals, and Odors. Journal - American Water Works Association, 108: E192-E204. https://doi.org/10.5942/jawwa.2016.108.0016

[242] Mohammadi, A., Dobaradaran, S., Schmidt, T.C. *et al.* Emerging contaminants migration from pipes used in drinking water distribution systems: a review of the scientific literature. *Environ Sci Pollut Res* **29**, 75134–75160 (2022). https://doi.org/10.1007/s11356-022-23085-7.

[243] 2023 ECHA PVC Report at 37-38; Appendices A and B to the Investigation Report on PVC and PVC Additives, https://echa.europa.eu/documents/10162/17233/rest_pvc_investigation_report_appendix_a_b_en.pdf/5a1e8057-b576-73fd-e163-4587874349d3?t=1701157496271, at 28-29.

[244] For example, a recent University of California rapid review found that exposure to microplastics is suspected to be a digestive hazard to humans, including cancer, as well as a hazard to the human reproductive system. CalSPEC, *Microplastics Occurrence, Health Effects, and Mitigation Policies* (Jan. 2023), at Executive Summary iii, https://static1.squarespace.com/static/5eda91260bbb7e7a4bf528d8/t/63ee3b95ee82156a46194aae/1676557207404/CalSPEC-Report-Microplastics-Occurrence-Health+Effects-and-Mitigation-Policies.pdf.

would have to be done at residences where the pipes were installed. Any Maximum Contaminant Level would need to be measured at the tap. At the treatment plant actions are unlikely to be successful at reducing leaching from such pipes, unlike corrosion control to reduce lead and copper leaching. This would create serious additional regulatory complexities and costs that would potentially overshadow the complexities and costs of monitoring for lead at homes. Analyses of synthetic organic chemicals (SOCs) tend to be very expensive, and EPA's rules generally only require monitoring for them at the point of entry into the distribution system. SOCs introduced into tap water by plastic service lines would necessitate widespread and presumably very expensive in-home monitoring for toxic SOCs.

c. Plastic service lines are not a good option because they are vulnerable to degradation and highly toxic releases during fires

It is also important to avoid plastic service lines because they are vulnerable to thermal degradation from wildfires and building fires. Not only can a plastic water distribution system be destroyed by fires, the degradation of the plastic (whether PEX, HDPE, PVC or CPVC) can result in leaching of highly toxic volatile organic compounds, such as benzene.[245] Contamination of drinking water by the carcinogen benzene after recent wildfires in California and Hawaii has been well documented, including levels of benzene in California at many times the permitted levels under federal and California law.[246] And the high levels of toxic chemicals can persist for months to years.[247]

This concern must be disclosed to state and local governments since large swaths of the country are at significant wildfire risk. Nearly 80 million properties stand a significant chance of exposure to fire, impacting 1 in 6 U.S. residents – a number that will increase over the next thirty years.[248] Nearly half of the people who are vulnerable live in the South, and people of color face a disproportionate risk of being impacted by wildfires.[249]

In addition, concern about emission of toxic gases when plastics burn has led the International Association of Fire Fighters to call for restrictions on use of plastic, including plastic pipes, in buildings.[250]

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[245] Isaacson, Kristofer P. and Proctor, Caitlin R. and Wang, Q. Erica and Edwards, Ethan Y. and Noh, Yoorae and Shah, Amisha D. and Whelton, Andrew J., Drinking water contamination from the thermal degradation of plastics: implications for wildfire and structure fire response, Environ. Sci.: Water Res. Technol., 2021,**7**, 274-284, https://doi.org/10.1039/D0EW00836B.

[246] E.g., The Conversation, Plastic pipes are polluting drinking water systems after wildfires – it's a risk in urban fires too (Dec. 14, 2020), https://theconversation.com/plastic-pipes-are-polluting-drinking-water-systems-after-wildfires-its-a-risk-in-urban-fires-too-150923;
Partlow, Joshua, et al. "The Toxic Aftermath of the Maui Fires Could Last for Years." Washington Post, 17 Aug. 2023, https://www.washingtonpost.com/climate-environment/2023/08/17/maui-fires-pollution-water-soil/?next_url=https://www.washingtonpost.com/climate-environment/2023/08/17/maui-fires-pollution-water-soil/.

[247] *Id*.

[248] Muyskens, John, et al. "1 in 6 Americans Live in Areas with Significant Wildfire Risk." Washington Post, 17 May 2022, https://www.washingtonpost.com/climate-environment/interactive/2022/wildfire-risk-map-us/.

[249] *Id*.

[250] International Association of Fire Fighters, IAFF AND UA CALL FOR BUILDING CODE CHANGES TO RESTRICT PLASTIC PIPING, June 4, 2019 https://www.iaff.org/news/iaff-and-ua-call-for-building-code-changes-to-restrict-plastic-piping/

d. Among the types of plastic that could be used in replacement service lines, it is most critical to avoid use of PVC and CPVC

While concerns about use of plastic in replacement service lines applies to all types of plastic, it is especially important that EPA recommend against the use of PVC or CPVC service lines. First, the dangers of vinyl chloride across the life-cycle have been well-established and documented – from the potent toxicity of vinyl chloride monomer (which is known to persist in residual form and leach into drinking water[251]), to the fenceline communities who are exposed to vinyl chloride and ethylene dichloride at dangerous levels,[252] to the millions of people who are at risk from transportation of vinyl chloride around the country for the production of PVC.[253]

Second, it is well-documented that lead is used as a stabilizer in PVC manufactured in China and India (and perhaps elsewhere).[254] It would obviously be unacceptable to allow state and local governments to install replacement service lines that contain lead. An additional concern with PVC manufactured in China is that their PVC uses coal as a source of carbon (as opposed to oil and gas, which is used elsewhere) and as a result it uses a mercury-based catalyst, resulting in significant mercury pollution across the globe.[255]

Finally, EPA has just commenced a process under the Toxic Substances Control Act ("TSCA") that is likely to result in vinyl chloride being designated as a high-priority substance that will undergo a three-year risk evaluation, likely followed by a risk management rulemaking process.[256] It would be self-defeating for EPA to allow or even effectively encourage wide-scale purchase of PVC/CPVC service lines, creating significant new demand for vinyl chloride, just as it is embarking on a process of understanding whether vinyl chloride presents unreasonable risk under TSCA. If EPA determines in 3-4 years that vinyl chloride presents unreasonable risk under TSCA in connection with conditions of use that are tied to manufacture of PVC resins and PVC service lines, it would create a very difficult and untenable situation for any state or local governments that had just invested millions of dollars to install PVC/CPVC service lines.

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[251] Walter RK, Lin PH, Edwards M, Richardson RE. Investigation of factors affecting the accumulation of vinyl chloride in polyvinyl chloride piping used in drinking water distribution systems. Water Res. 2011 Apr;45(8):2607-15. https://doi.org/10.1016/j.watres.2011.02.016. Epub 2011 Feb 19. PMID: 21420710.

[252] In particular, *see* EPA, Calvert City, Kentucky Volatile Organic Compound (VOC) Air Quality Risk Assessment (January 22, 2024) p. 83-85

[253] Ajasa, Amudalat. "Millions of Americans Face Risk of a Toxic 'Bomb Train.'" Washington Post, 29 Jan. 2024, https://www.washingtonpost.com/climate-environment/2024/01/29/vinyl-chloride-trains-chemical-report/.

[254] See, e.g., Zhang, Y., & Lin, Y. P. (2015). Leaching of lead from new unplasticized polyvinyl chloride (uPVC) pipes into drinking water. *Environmental science and pollution research international*, *22*(11), 8405–8411. https://doi.org/10.1007/s11356-014-3999-9; The Print, Lead in PVC pipes is poisoning India's drinking water, but govt's done nothing in 2 years (March 19, 2019), https://theprint.in/india/lead-in-pvc-pipes-is-poisoning-indias-drinking-water-but-govts-done-nothing-in-2-years/207444/.

[255] Cardiff University, Cleaning Up PVC Production, Global impacts, https://www.cardiff.ac.uk/chemistry/research/impact/cleaning-up-pvc-production#:~:text=Typically%2C%20PVC%20produced%20elsewhere%20makes,to%20use%20mercury%2Dbased%20catalysts.

[256] EPA, Initiation of Prioritization Under the Toxic Substances Control Act, 88 Fed. Reg. at 87423 (Dec. 18, 2023).

e. Copper generally lasts much longer than plastic, reducing long-term costs and making the necessity for replacements in 20-30 years much less likely

Studies have found that copper service lines can be expected to last for 50-60 years, as compared to plastic such as polyethylene, which would be expected to last 20-40 years.[257] Considering this differential in service life, utilities and homeowners may need a second replacement of the plastic if that material is used for a LSLR now, effectively doubling the lifecycle cost of a plastic service line. This is an important consideration that EPA should bring to the attention of local and state policymakers.[258]

f. Additional cost, lifecycle, and other considerations

EPA's guidance to state and local governments must address cost comparisons of using plastic vs. copper as replacement service line material. This cost discussion should take into account cost over the lifespan of the replacement material from cradle-to-grave (including distribution and disposal), rather than merely cost at installation. Among other considerations, this lifecycle analysis should take into account, at a minimum:

- As noted above, the likely longevity of new service lines must be highlighted for state and local decisionmakers. Copper service lines could be expected to last for 50-60 years, as compared to plastic, which would be expected to last 20-40 years.[259]

- Costs to power the system with service lines of different materials. Our understanding is that operating a system with PVC service lines is more energy-intensive than with other service line materials because the walls are thicker, requiring more energy to move the water through the system.[260]

- The disposal options for replacement pipes at the end of their lifespan, including costs and potential liability for disposal of potentially toxic degraded plastic pipe. Our understanding is that there are no environmentally sound disposal options for plastic, whereas copper can be recycled.

- Health and environmental effects of manufacture and use, as described above.

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[257] Lee, Juneseok, and Myles Meehan. 2017. "Survival Analysis of US Water Service Lines Utilizing a Nationwide Failure Data Set." Journal - American Water Works Association 109 (9): 13–21. https://doi.org/10.5942/jawwa.2017.109.0098 .

[258] We recognize that in less common circumstances, soil corrosivity may adversely affect the longevity of copper service lines. EPA's guidance could acknowledge the need to account for localized soil factors, but this should not deter EPA from recommending that, in general, copper is expected to have a longer service life.

[259] Lee, Juneseok, and Myles Meehan. 2017. "Survival Analysis of US Water Service Lines Utilizing a Nationwide Failure Data Set." Journal - American Water Works Association 109 (9): 13–21. https://doi.org/10.5942/jawwa.2017.109.0098.

[260] Maury D. Gaston, Carson Smith, and James C. Hogeland, Pipe inside diameter key to energy efficiency, Journal of the American Water Works Association, Volume 106, Issue 6 (June 2014), https://doi.org/10.5942/jawwa.2014.106.0084.

ii. EPA should undertake or fund studies needed to conduct the analyses that state and local governments need to make sound decisions about replacement service lines

We urge EPA to develop the information that is needed to ensure sound decisionmaking regarding replacement service line materials. At a minimum, this information must take into account the potential that replacement materials would result in leaching or contamination of drinking water with toxic substances, including micro- and nanoplastics.

As a starting point, we urge EPA to conduct a systematic review of the literature related to lifecycle health impacts of the various materials that could be used as replacement service lines. If EPA identifies data gaps that would hinder it from providing well-reasoned guidance to state and local governments about the life-cycle impacts of different types of service lines, it should ensure that such data gaps are filled. Among other sources of authority to conduct or fund information development about toxic substances leaching into drinking water from plastic pipes, EPA can rely on TSCA section 10(a),[261] which allows EPA to conduct such research, development, and monitoring as is necessary to carry out TSCA, including via contracts and grants.[262]

We also urge EPA to investigate whether recycled copper can appropriately serve as a replacement material for LSLs. We are aware of concerns that at least some recycled copper may contain elevated lead levels due to lead solder or leaded brass that is combined with the copper during the recycling process.[263] If the content of recycled copper includes contaminants that would not be appropriate for use in service lines, we urge EPA to consider whether there are actions it can take to ensure a stream of recycled copper that can be used in service lines. There is emerging science that there are methods available to remove lead from recycled copper.[264]

EPA's Safer Choice Program (part of the Office of Chemical Safety and Pollution Prevention) has expertise in "informed substitution" and use of standards to incentivize use of more environmentally friendly products and ingredients to minimize the likelihood of unintended consequences and seed more circular economies. Conferring with leaders of this program could be helpful in developing guidance for state and local governments.

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[261] 15 U.S.C. 2609(a).

[262] Since the plastics that are used to manufacture potential replacement service lines (including the polymers and additives) are subject to regulation under TSCA, understanding the impact of these plastics when used in service lines on human health and the environment is necessary to carry out EPA's duties under that law.

[263] Antonia Loibl, Luis A. Tercero Espinoza, Current challenges in copper recycling: aligning insights from material flow analysis with technological research developments and industry issues in Europe and North America, Resources, Conservation and Recycling, Volume 169,2021,105462,ISSN 0921-3449, https://doi.org/10.1016/j.resconrec.2021.105462; Konstantin Born, Mehmet Metehan Ciftci, The limitations of end-of-life copper recycling and its implications for the circular economy of metals, Resources, Conservation and Recycling, Volume 200, 2024, 107318, ISSN 0921-3449, https://doi.org/10.1016/j.resconrec.2023.107318.

[264] See *id*.; Hilgendorf S, Binz F, Welter J-M, Friedrich B. Lead removal from brass scrap by fluorine-free compound separation. Materials Science and Technology. 2016;32(17):1782-1788. doi:10.1080/02670836.2016.1223574.

iii. EPA should ensure that its drinking water standards and action levels are set at optimal values for substances that are likely to enter drinking water from all potential replacement service line materials

To avoid replication of the lead service line crisis that the Proposed Rule is designed to correct, EPA should attempt to get ahead of the curve by ensuring that its drinking water standards are set at appropriate levels for copper, as well as for all substances that it determines may leach from replacement service lines made from all types of plastic that may be used.

While EPA may not yet have enough information about the universe of substances that are likely to leach from plastic service lines, it does have enough information to assess whether its copper action level is set at an appropriate level. It should undertake that analysis without delay, and, if necessary, update the level expeditiously.

Once EPA has an understanding of the substances that leach from plastic pipes into drinking water under routine and high-heat conditions, it should reassess the appropriateness of existing advisory levels or drinking water standards without delay, and update them as necessary. Any substances -- including microplastics -- that do not have standards, should be considered for an expedited standard under the "urgent threats to health" authority of the SDWA if appropriate.[265] or added to the next round of unregulated contaminant monitoring and considered for the Candidate Contaminant List and standard development on an expedited basis.

It is critical that we learn our lesson and take a precautionary approach to preventing harm from contamination of drinking water from service lines.

F. Lead Pipe Disposal Concerns

The tracking of and disposal of lead pipes after removal or disconnection is an issue of concern. While EPA need not direct how water systems abandon or dispose of lead service lines in the LCRI, tracking such information and making it publicly available are well within the scope of the LCRI's inventory requirements and would only nominally increase the reporting burden on water systems performing lead service line replacement.

Although very little research has directly and specifically examined lead contamination from lead pipes left in the ground after disconnection, the extent of soil and groundwater contamination from other sources of lead are well studied. For example, the contamination of soil and groundwater from lead has been extensively studied in similar situations where lead bullets contaminate firing ranges, around industrial lead smelters, or from lead mine tailings. The rate that lead pipes will leach into soil and groundwater will vary by soil type and particle size, pH, soil chemistry, and the depth of groundwater. In addition, the application of road salts on driveways, walkways and roadways will likely accelerate the mobilization of lead into soil and groundwater.[266]

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[265] SDWA section 1412(b)(1)(D), 42 U.S.C. 300g-1(b)(1)(D).

[266] S. S. Nelson, D.R. Yonge, & M.E. Barber, *Effects of road salts on heavy metal mobility in two eastern Washington soils*, *J. of Env't Eng'g*, 135(7), 505-510 (2009)

Although one form of disposal entails sending removed lead service lines and connectors for disposal and recycling at lead smelters, cost cutting efforts can lead to the abandonment of sections of lead pipe in the ground. Such methods to replace lead pipes include the use of a directional boring technique that disconnects and abandons the lead service line in place.[267] The LCRI explicitly contemplates that systems may disconnect and leave in place certain LSLs.[268] While such methods may save costs and disturb less property, the risks associated with leaving lead pipes in soil has not been evaluated by water systems or federal agencies.

Due to the proposal's inventory requirements, including a deadline for baseline inventory, annual updates, and the inclusion of connector materials and locations; as well as with data collection requirements as replacement occurs as required or incentivized by the proposal, EPA can and should require that all lead service lines and lead connectors that are not completely removed during pipe replacement projects be continually tracked in the aforementioned inventories. This information should be required to be made publicly available and accessible by address from online databases.

In addition, public health advocates have identified concerns about the safe disposal of removed lead service lines, particularly when lead wastes are transferred abroad for recycling.[269] It would be tragic if well-intended efforts to rid the United States of the scourge of lead poisoning have the unintended consequence of contributing to increased lead poisoning in communities near disposal, recycling and waste-handling facilities, and among workers at those facilities, in the United States. Similarly, it would be unacceptable if the removed LSLs were sent to other countries that receive and process lead wastes (many of which likely have even more inadequate environmental and public health safeguards for disposal and recycling of lead than the United States). Water systems that remove LSLs need guidance on the safest approach to disposal and/or recycling taking all factors into account (e.g., public health, the environment, cost, preserving critical resources). It is critically important that EPA discourage export of removed LSLs and connectors to other countries as a way around U.S. laws, regulations, and enforcement. We also urge EPA to expeditiously propose scientifically-grounded guidance on the best approach to disposal and/or recycling--and to seek public comment on that guidance so that workers and communities can provide input. .

In addition, the LCRI should add to proposed section 141.84(c)[270] a requirement that each water system include in its service line replacement plan an explanation of how it intends to dispose of removed lead service lines and connectors. Also, the LCRI should add a requirement that water systems track and record for each address where a LSL is removed or disconnected and abandoned how it was disposed of, and report a summary of how they actually disposed of removed lead service lines and connectors in the annual service line replacement reports required

[267] Denver Water, Lead Reduction Program, *Lead Service Line Replacement*, https://www.denverwater.org/your-water/water-quality/lead/lead-service-line-replacement-program (last visited Feb. 1, 2024).
[268] 88 Fed. Reg. at 85,066 (Dec. 6, 2023) (§ 141.84(d)(6)(iii)(B)-(C)).
[269] *See, e.g.*, Basal Action Network, *Lead Pipes Removed in the U.S. May Result in Poisoning Abroad*, April 20, 2022, https://www.ban.org/news/2022/4/20/lead-pipes-removed-in-the-us-may-result-in-poisoning-abroad (last visited Feb. 4, 2024).
[270] 88 Fed. Reg. at 85,064.

by proposed section 141.90(e)(8).[271] And, for transparency, all service line replacement plans and annual service line replacement reports must be made publicly available.

G. Service Line Replacement Plans (§ 141.84(c))

We support EPA's stated goal driving the development of replacement plans: to ensure the equitable replacement of all LSLs and GRRSLs.[272] As discussed in detail throughout these comments, the best way to ensure equitable replacements of these lines is to require systems to pay for the replacements. We're also supportive of the LCRI's recognition that community engagement is important during the creation of replacement plans,[273] however; the final LCRI should require at least two public meetings so that community members can engage on topics on which they are the actual experts, such as how to best inform renters, for example. We agree with EPA that it is crucial to have communications strategies specific to renters, tenants, and property owners;[274] this is discussed in greater detail in section 8 of our comments on Public Education. Other specific suggestions for improving the replacement plans are below.

i. Specific Changes to Replacement Plan Requirements

The LCRI only requires the development of a replacement plan if a system has "one or more lead, galvanized requiring replacement, or lead status unknown service line."[275] The development of a replacement plan should also be required when a system has one or more lead or lead status unknown connectors. The public health risks of connectors are discussed in section 2(D)(i) on connectors.

The LCRI requires replacement plans to create a strategy to prioritize replacements.[276] Consistent with the mandates of the SDWA, the LCRI must instead *require* the prioritization of replacements in areas with "subpopulations at greater risk" from the effects of lead and those who are disproportionately impacted by lead exposure,[277] and replacements for lines or connectors serving schools and childcare facilities.

The LCRI also states that the plan should include a funding strategy addressing *whether* a system will make customers pay for the portion of the line located on private property.[278] This must be changed in the final rule so that plans include *how* the system will cover the cost of the full replacement.[279] This should include details on funding mechanisms the system will employ for full replacements, and how it will address or eliminate any legal barriers to fully replacing and funding full replacements.

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[271] 88 Fed. Reg. at 85,081.
[272] 88 Fed. Reg. at 84,882.
[273] 88 Fed. Reg. at 84,906.
[274] 88 Fed. Reg. at 84,925
[275] 88 Fed. Reg. 85,064 (§ 141.84(c)).
[276] *Id.* (§ 141.84(c)(1)(v))
[277] 42 U.S.C. 300g-1 (b)(3)(C)(i)(V).
[278] *Id.* (§ 141.84(c)(1)(vi))
[279] *See supra* section 2(D)(iv).

Relatedly, in addition to identifying any "laws, regulations, or water tariff agreements that affect a PWS's ability to gain access" to a line,[280] the final rule should require that plans also identify tangible steps the system is taking or will take to overcome these obstacles, including revising tariffs, bond instruments, or contractual agreements with customers, and working with state or local governments to amend laws or regulations restricting access if necessary. The plan should include timelines for completing such actions.

There are two instances when a replacement plan, or at least parts of a replacement plan, must be updated: when legal or contractual barriers to full LSLR change, and when material validation reveals a problem with the validation method.[281] Plans must include a strategy for identifying material composition of service lines; this should be updated in the final rule to include identification of the material composition of connectors as well. If the validation process reveals that the strategy for identifying materials is inaccurate because the error rate is too high, the replacement plan must be updated to include a new strategy for materials identification. EPA should also require, not merely recommend, that replacement plans are updated if state laws or water tariff agreements change during the replacement period. Such changes directly impact multiple elements of the replacement plan, such as the standard operating procedure and funding strategy.

Like our suggested threshold for the online inventory requirement, replacement plans must be available online if a system serves more than 10,000 persons, and not the proposed LCRI's current threshold of over 50,000.

Finally, as discussed in section 2(F), replacement plans should describe how systems plan to dispose of lead service lines and connectors that are removed or disconnected.

ii. Response to EPA's Specific Request for Comment

EPA seeks comment on the 50,000 threshold and whether plans should be updated if state laws change.

The threshold for replacement plan availability online should be lowered to systems serving more than 10,000. Plans must be updated if relevant state laws change, and if validation reveals a problem with a system's material identification method.

[280] *Id.* (§ 141.84(c)(2))

[281] Validation considerations are discussed in section 5(C) of our comments. Also, if EPA accepts our recommendation in section 5 to require systems to verify the material of unknown service lines sooner than the end of the mandatory replacement program, replacement plans also should be updated once a system identifies the material of all previously unknown service lines.

Section 3: The LCRI's Compliance Date

We support EPA's proposal to begin requiring compliance with certain LCRR provisions as scheduled on October 16, 2024. However, EPA should also require compliance with much or all of the LCRI less than three years after the LCRI's promulgation.

A. Background

In relevant part, section 1412(b)(10) of SDWA provides that "[a] national primary drinking water regulation . . . (and any amendment thereto) shall take effect on the date that is 3 years after the date on which the regulation is promulgated unless the Administrator determines that an earlier date is practicable, except that the Administrator, or a State (in the case of an individual system), may allow up to 2 additional years to comply with a . . . treatment technique if the Administrator or State (in the case of an individual system) determines that additional time is necessary for capital improvements."[1]

In the LCRI, "EPA is proposing a compliance date of three years after promulgation of a final [LCRI] rule and is proposing that systems continue to comply with the [1991] LCR until that date, with the exception of the [2021] LCRR initial LSL inventory, notification of service line material, associated reporting requirements, and the requirement for Tier 1 public notification for a lead action level exceedance under subpart Q."[2] EPA does not propose a universal two-year extension in the LCRI "because EPA has not determined that an additional two years is necessary for water systems nationwide to make capital improvements to begin compliance with the LCRI."[3] In addition, EPA reasons that "the requirements in the proposed LCRI for which capital improvements may be necessary would not be required to be completed by the compliance date for the rule. Instead, the compliance date marks the beginning of an extended time period for systems to conduct lead service line replacement and install new or reoptimized corrosion control treatment under the revised requirements."[4]

We support EPA's decision to require compliance as planned with the LCRR provisions related to the initial LSL inventory, notifications of service line materials, certain reporting requirements, and Tier 1 public notification requirements. As EPA has correctly concluded, water systems and States have had plenty of time to prepare for these changes, the inventories are an essential prerequisite for the LSLRs required by the LCRI, and allowing these LCRR provisions to take effect will help protect public health. We also support EPA's proposal to set a uniform compliance date for water systems of all sizes. The LCRI's essential public health protections should not be delayed for any customers. However, for all water systems, some or all of the LCRI itself should also take effect immediately or sooner than three years from the promulgation date.

[1] 42 U.S.C. § 300g-1(b)(10).
[2] 88 Fed. Reg. at 84,967.
[3] 88 Fed. Reg. at 84,897.
[4] 88 Fed. Reg. at 84,897.

B. The LCRI's compliance date should be less than three years after the date the rule is promulgated

Consistent with SDWA, EPA should determine that a compliance date earlier than three years after the LCRI's promulgation is practicable for all water systems. The three-year delay between the promulgation of a new national primary drinking water regulation and its compliance date is meant to allow water systems and states adequate time to prepare for the new regulation, particularly when the regulation requires substantial changes to state regulations, water system operations, or capital improvements. However, there are many changes that water systems can implement in much less than three years, and the final LCRI should determine that it is practicable for the rule, or substantial parts of it, to have a compliance date no later than one year after the rule is promulgated.

At a minimum, for the following reasons, EPA should set a compliance date one year after promulgation for portions of the LCRI including corrosion control treatment (CCT) studies and optimal corrosion control treatment (OCCT) implementation, public education language updates, tap sampling updates, and sampling in schools and child care facilities:

- The CCT provisions in proposed sections 141.81(d)-(e) and 141.82(a)-(i)[5] regarding the conduct of CCT studies and the designation and implementation of OCCT should be effective no more than one year after the LCRI's promulgation. Water systems can initiate the design of CCT studies compliant with the LCRI starting on day one, and it would be inefficient and unnecessary for water systems to continue using old CCT study methods for an extra three years. The CCT study design must be customized for each water system anyway, so there is no reason to continue using old requirements when water systems start a new CCT study after the LCRI's promulgation date.

- The LCRI's public education requirements in proposed section 141.85[6] should also take effect no later than one year after the LCRI's promulgation. These provisions require water systems to distribute critical public health information and require primarily updated paperwork and administrative processes that can be implemented within a year or less. For example, some of these provisions simply require systems to update the mandatory language included in public notifications and consumer confidence reports (CCRs). Updating required language is relatively easy to implement and requires no new capital improvement investments, especially for language that is required to be copied verbatim from the LCRI. Systems should not need more than a few months to prepare updated public education materials. And unnecessarily delaying the distribution of more accurate and informative public education materials fails to protect public health to the extent feasible.

- The LCRI's tap sampling requirements in proposed section 141.86[7] should also take effect no later than one year after the LCRI's promulgation. Like the public education language updates, updating sample collection procedures, particularly the addition of

[5] 88 Fed. Reg. at 85,057-58, 85,059-61.
[6] 88 Fed. Reg. at 85,068-73.
[7] 88 Fed. Reg. at 85,073-77.

fifth liter samples, is a comparatively minor change to existing procedures. It requires no new major capital improvement investments and should not require more than a few months to implement.

- The LCRI's monitoring requirements for schools and child care facilities in proposed section 141.92[8] should also take effect within one year. As proposed, the LCRI mostly maintains the LCRR's requirements regarding schools and child care facilities,[9] which means water systems have had notice of the likely changes and time to prepare since 2021. Also, water systems have extensive experience conducting tap monitoring, so requirements to sample in schools and child care facilities are not a major change from existing workflows and do not require substantial new capital improvements. Even if EPA strengthens these provisions as recommended elsewhere in our comments, implementing better protections for water that children drink day in and day out should be one of the highest priorities of the LCRI due to children's unique vulnerability to lead.

In addition, the compliance date for water systems to begin mandatory lead service line replacements (LSLRs) under proposed section 141.84[10] should be one year after the LCRI's promulgation. That would give water systems a full year to update their initial service line and connector inventory to generate their "baseline inventory,"[11] prepare their service line replacement plan,[12] and secure funding and, if needed, access permissions for the first year of LSLRs. Requiring the mandatory LSLRs to begin less than three years after the LCRI's promulgation is practicable and reasonable for several reasons.

First, on December 16, 2021, the Biden-Harris Administration announced its action plan to "marshal[] every resource to make rapid progress towards replacing all lead pipes in the next decade."[13] Among other goals, EPA declared that "[r]eplacing 100 percent of lead service lines (LSLs) is an urgently needed action" and that "EPA intends to propose for public comment a new rule to revise the LCRR to advance the goals described above."[14] By October 2024, water systems will have had nearly three years to begin preparing for more aggressive LSLR requirements. Providing an additional three years to prepare for LSLRs after the LCRI's promulgation would be duplicative and unnecessary.

Second, the structure of the LCRI's proposed LSLR mandate would require compliance based on a three-year rolling average, which means that water systems will have three years after the commencement of LSLRs to achieve the required average annual replacement rate of ten percent per year.[15] Systems would have ample time to catch up if LSLRs in the first year or two proceed at a pace slower than ten percent per year. Also, by requiring LSLRs to begin one year

[8] 88 Fed. Reg. at 85,083-85.
[9] 88 Fed. Reg. at 84,956.
[10] 88 Fed. Reg. at 85,062-68.
[11] 88 Fed. Reg. at 85,062 (§ 141.84(a)(2)).
[12] 88 Fed. Reg. at 85,064 (§ 141.84(c)).
[13] Fact Sheet: The Biden-Harris Lead Pipe and Paint Action Plan, https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/16/fact-sheet-the-biden-harris-lead-pipe-and-paint-action-plan/ (Dec. 16, 2021).
[14] 86 Fed. Reg. 71,574, 71,574 (Dec. 17, 2021).
[15] 88 Fed. Reg. at 85,064-65 (§ 141.84(d)(5)).

after the LCRI's promulgation, compliance with the LSLR mandate would be assessed beginning four years after the LCRI's promulgation, which fits more comfortably within SDWA's time limits for major capital improvements.[16]

Third, as EPA itself notes, "there is significant funding available [now] through the Bipartisan Infrastructure Law and other sources for LSL identification and replacement."[17] The Bipartisan Infrastructure Law includes $15 billion in funding dedicated to LSLRs, as well as $11.7 billion for the Drinking Water State Revolving Fund that may be spent on LSLR, to be made available in installments in fiscal years 2022 through 2026.[18] Fortunately, the annual Bipartisan Infrastructure Law funding is "to remain available until expended,"[19] which means that the appropriations are "available for obligation for an indefinite period."[20] However, if the LCRI's mandatory LSLRs do not begin until late 2027, a year after the final appropriations in the Bipartisan Infrastructure Law, there is a substantial risk that water systems waiting until fiscal year 2027 to begin LSLRs may not be able to access the Bipartisan Infrastructure Law funding because it will have been used up by other water systems that got started earlier. Requiring systems to start LSLRs in late 2025, one year after the LCRI's promulgation, would encourage more water systems to seek funding from the Bipartisan Infrastructure Law in fiscal years 2025 and 2026 when funds are more likely to be available. In addition, there is always a risk that Congress may try to claw back unspent funding from the Bipartisan Infrastructure Law, which is another reason to compel water systems to start LSLRs sooner, while the funding is available.

Fourth, it is imperative that the LSLR-related requirement for water systems to replace lead connectors when encountered (in proposed section 141.84(e)[21]) take effect as soon as possible and no later than one year after the LCRI's promulgation. As proposed, water systems are not required seek out and remove known lead connectors. Until this provision goes into effect, there is a risk that water systems conducting LSLRs or other infrastructure projects will needlessly leave lead connectors in service and will never have any obligation to go back and remove them.

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[16] *See* 42 U.S.C. § 300g-1(b)(10). In the proposed LCRI, LSLRs are not required to begin until three years after the LCRI's promulgation and compliance with the LSLR mandate cannot be measured for another three years, so LSLR compliance is first assessed a total of six years after the LCRI's promulgation. That creates a question about whether the regulatory structure satisfies the requirements in SDWA section 1412(b)(10), which specify that national primary drinking water standards shall take effect no more than three years after promulgation except that EPA may allow up to an extra two years for capital improvements (a total of up to five years after promulgation). We believe that the essence of the LSLR mandate is the replacement rate of ten percent per year, which can be achieved within SDWA's statutory timeframe with either a one- or three-year compliance date. However, a one-year compliance date coupled with the three-year rolling average method for determining compliance with the mandatory LSLR requirement would help to eliminate potential questions about the LCRI's compliance with SDWA's timing provisions. Alternatively, as discussed elsewhere in these comments, setting MCLs for lead and copper would be another way to ensure compliance with SDWA, including the statutory timing requirements.

[17] 88 Fed. Reg. at 84,897.

[18] Bipartisan Infrastructure Law or, formally, the Infrastructure Investment and Jobs Act (IIJA), Pub. L. No. 117–58, 135 Stat. 429, at 1399-1400 (Nov. 15, 2021).

[19] *Id.*

[20] U.S. Gov't Accountability Office, Office of the General Counsel, *Principals of Federal Appropriations Law, Ch. 2, The Legal Framework*, GAO-16-464SP, at 2-9 (4th ed. 2016), https://www.gao.gov/assets/2019-11/675709.pdf.

[21] 88 Fed. Reg. at 85,066.

Fifth, requiring LSLRs to begin one year after the LCRI's promulgation, with compliance assessed beginning four years after the LCRI's promulgation (based on the three-year rolling average annual replacement rate), would align the LSLR timing with the timing of primacy states' new implementing regulations. SDWA's primacy provisions require primacy states to adopt drinking water regulations at least as stringent as EPA's national primary drinking water regulations no later than two years after a regulation's promulgation, with a possible extension of up to two years.[22] Thus, all primacy states would have completed their regulatory updates no later than the date when compliance with the LSLR mandate would begin to be assessed.

* * * * *

In sum, EPA should require compliance with the LCRI, or at least specified parts of it, no later than one year after promulgation. For all of the reasons discussed above, an earlier compliance date is practicable and appropriate to protect public health to the extent feasible. An earlier compliance date is also consistent with EPA's practices in other drinking water regulations. For example, the national primary drinking water regulation "Stage 2 Disinfectants and Disinfection Byproducts Rule" required water systems of all sizes to begin complying with aspects of the rule in less than three years and required some systems to begin compliance in less than one year.[23]

C. To ensure compliance with SDWA, the language describing the mandatory LSLR requirements should be modified

Proposed section 141.84(d) of the LCRI sets a default ten-year deadline for mandatory full service line replacements, requires annual replacements at a rate of at least 10 percent, and specifies that the replacement rate shall be calculated as a three-year rolling average that is first assessed at the end of the third year of the mandatory service line replacement program.[24] Functionally, these provisions create a treatment technique that, unless exceptions apply, requires water systems to comply by conducting LSLRs at the rate of 10 percent per year beginning on the compliance date of the rule. We believe that structure is compliant with the timing requirements in SDWA section 1412(b)(10).[25] However, to avoid any questions about how a ten-year deadline comports with SDWA's statutory language, EPA should frame the mandatory LSLR requirements as an annual replacement rate mandate, the logical consequence of which is a ten-year deadline. For example, proposed section 141.84(d)(4)[26] should be modified to read:

> *Deadline for completing mandatory service line replacement.* <u>As a consequence of the mandatory replacement rate specified in § 141.84(d)(5), the practical</u> deadline for water systems to replace all lead and galvanized requiring replacement service lines under the control of the water system is no later than ten years after the compliance date specified in § 141.80(a)(3) unless the system is subject to a

[22] 42 U.S.C. § 300g-2(a)(1).
[23] 71 Fed. Reg. 388, 414-17 & tbl. IV.E-1 & fig. IV.E-1 (Jan. 4, 2006).
[24] 88 Fed. Reg. at 85,064-65 (§ 141.84(d)(4)-(5)).
[25] 42 U.S.C. § 300g-1(b)(10).
[26] 88 Fed. Reg. at 85,064.

different replacement rate and resulting deadline under paragraphs (d)(5)(iv) and (v) of this section.

Proposed sections 141.84(d)(5)(iv) and (v)[27] would need similar modifications to make the annual replacement rate the primary requirement and the deadline a logical consequence of the replacement rate. By making these modifications, which do not change the essence of the LSLR mandate, EPA could clarify that the essence of the LSLR mandate is the ten percent annual replacement rate.

D. Responses to EPA's requests for comment

EPA seeks comment on "all aspects of the proposed LCRI compliance dates and whether it would be practicable for water systems to implement any of the proposed LCRI requirements earlier than three years from the date of final action on the proposed LCRI. Specifically:

> 1. Whether it is practicable for water systems to implement notification and risk mitigation provisions after full and partial service line replacement (§ 141.84(h)), notification of a service line disturbance (§ 141.85(g)), and associated reporting requirements (§ 141.90(e)(6) and (f)(6)) upon the effective date of the LCRI.
>
> 2. Whether earlier alternative compliance dates for LCRI are practicable such that water systems transition directly from LCR to LCRI in less than three years (*i.e.,* one or two years) based on the assumption that water systems would comply with the LCR until the LCRI compliance date.
>
> 3. Whether there are other LCRR provisions besides the initial inventory and notifications of service line material for which the October 16, 2024 compliance date should be retained."[28]

As discussed above, it would be practicable for some or all of the LCRI's requirements to take effect less than three years after the LCRI's promulgation, and we specifically recommend that many or all provisions take effect no later than one year after promulgation. We believe that it is practicable for the notification and reporting provisions discussed in EPA's first question to take effect immediately or nearly immediately after the LCRI's promulgation, because these are largely administrative and procedural changes that do not require major capital improvements or much time to plan and implement. In response to EPA's second and third questions, we support allowing the specified provisions of the LCRR (plus the LCRR's Tier 1 public notification provisions, as discussed elsewhere in the LCRI) to take effect as planned in October 2024 and we believe that all of the LCRI can and should take effect one year after it is promulgated.

[27] 88 Fed. Reg. at 85,065.
[28] 88 Fed. Reg. at 85,038.

Section 4. The Threshold for Lead Action Level Exceedances Must Be More Stringent and Actions Required After a Lead Action Level Exceedance Should Be Strengthened

A. A lead action level lower than 10 ppb is necessary to prevent harm to the extent feasible as required by the SDWA

We applaud EPA for proposing to lower the action level ("LAL") from 15 parts per billion (ppb). If systems exceed the lead and/or copper action level, they must take certain actions including optimizing or re-optimizing OCCT, educating or notifying the public, and monitoring and treating source water.[1] The 15 ppb LAL is not, and never was intended to be, health based.[2] Rather, EPA set the action level in 1991 at 15 ppb because that was the lead level it believed water systems could achieve at the time using corrosion control.[3] Yet, EPA never lowered the action level after that, despite decades of data showing that water systems using corrosion control have achieved and can achieve lead levels well below 15 ppb.[4] That EPA has now publicly recognized that the LAL must be lowered from the very high level of 15 ppb is a necessary step forward.

In the final LCRI, however, EPA must lower the LAL much further than 10 ppb—ideally to 1 ppb, but no higher than 5 ppb—both to protect health and comply with the SDWA. Public health experts and EPA agree that any level of lead in drinking water presents risk of harm.[5] The SDWA requires a treatment technique under the LCR to "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[6] Lowering the LAL significantly lower than 10 ppb will ensure treatment techniques under the LCRI prevent adverse health effects as much as is feasible.

i. Lowering the LAL will better prevent adverse health effects

Lowering the LAL to only 10 ppb is insufficiently health protective and does not prevent adverse health effects of lead to the extent feasib as required by the SDWA.[7] Lowering it much further would result in more systems having an "LAL exceedance" and thus having to take immediate steps to control lead levels and educate the public. EPA has recognized the commonsense notion that requiring lead reduction measures at lower lead levels would provide greater health benefits.[8]

And EPA's own analyses confirm that a LAL of 10 ppb is not health protective—particularly for children, one of the subpopulations most vulnerable to lead exposure. EPA has

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[1] *See* 88 Fed. Reg. at 84,939, 84,943.
[2] *See, e.g.*, U.S. EPA, Understanding the Lead & Copper Rule (Sept. 2020), https://www.epa.gov/sites/default/files/2019-10/documents/lcr101_factsheet_10.9.19.final_.2.pdf.
[3] 56 Fed. Reg. at 26,490-91.
[4] 88 Fed. Reg. at 84,940 (majority of water systems do not have LAL exceedances at 15 ppb, nor would they at 10 ppb); 86 Fed. Reg. at 4200 (citing a 90 percent decrease in the number of large systems exceeding the action level).
[5] 88 Fed. Reg. 84,879; Deniz Yeter et al., *Disparity in Risk Factor Severity for Early Childhood Blood Lead among Predominantly African-American Black Children: The 1999 to 2010 US NHANES*, 17(5) INT'L J. ENV'T RESEARCH PUB. HEALTH 1552 (Mar. 2020), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7084658/.
[6] 42 U.S.C. § 300g-1(b)(7)(A).
[7] Id.
[8] 88 Fed. Reg. 84,902.

estimated that to prevent the blood lead level of thousands of children under age 7 from exceeding CDC's then-"reference value" of 5 µg/dL (elevated childhood blood lead level), their drinking water would have to be limited to about 5 ppb each day, on average, to account for the totality of their exposures from multiple media (aggregate exposure).).[9] Thousands of children ages 2 to <6 would have to have the lead in their water limited to about 3 ppb to avoid exceeding the current CDC reference value of 3.5 µg/dL. The EPA analysis also found that for 2.5 percent of children from 1 to 7 years of age, blood lead levels will not be below the new CDC reference (3.5 µg/dL) even if they have no lead (0 ppb) in water, due to aggregate exposure from all sources..[10] In other words, there is no margin of safety. Any lead exposure from tap water is expected to put thousands of children under 7 above the CDC reference level. That is one reason the American Academy of Pediatrics recommends that drinking water in schools never exceed 1 ppb of lead.[11] EPA is not the only federal agency that recognizes that drinking water that contains lead levels as high as 10 ppb unnecessarily and unacceptably endangers health. The FDA requires lead in bottled water to be no greater than 5 ppb.[12]

EPA's Economic Analysis for the Proposed Lead and Copper Rule Improvements ("economic analysis") reviews the concentration-response functions for lead and IQ, citing a 2019 epidemiological study that carried out a pooled analysis of multiple cohort studies that evaluated the correlation between blood lead levels and "full-scale IQ (the composite of verbal and performance IQ scores) in children 5-10 years old.[13] Alarmingly, the study found that not only were blood lead levels significantly correlated with IQ loss, but the decreases in IQ loss as it related to blood lead levels was highest at lower blood lead levels: average IQ loss of 3.8 points, 1.8 points, and 1.1 points was associated with blood lead levels of 2.4-10 µg/dL, 10-20 µg/dL, and 20-30 µg/dL, respectively.[14] That is, blood lead levels that within the CDC and EPA reference value (a 3.5-5 µg/dL range) – which is supported by EPA's own modeling limits, are associated with the highest IQ loss among children. This research is consistent with and supported by other studies that have found that the most adverse health effects associated with lead exposure occur at the low-level blood lead levels.[15] As stated above, EPA scientists published a detailed research article on modeled blood lead levels and lead concentrations in drinking water and taken together with the economic analysis, the proposed LCRI will not

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[9] EPA Off. Res. & Dev., *EPA Tools and Resources Webinar: Multi-Media Modeling of Children's Lead Exposure* (2018), https://www.epa.gov/sites/default/files/2018-10/documents/multimedia_pb_slides.pdf (citing Valerie Zartarian et al., *Children's Lead Exposure: A Multimedia Modeling Analysis to Guide Public Health Decision-Making* 125 *Env'tl Health Persp.* (2017), https://ehp.niehs.nih.gov/doi/10.1289/ehp1605). The CDC reference value of 5 micrograms of lead per deciliter (ug/dL) in blood was established in 2012 and was updated to 3.5 ug/dL in 2021. *See* CDC, *CDC updates blood lead reference value to 3.5* ug/dL, https://www.cdc.gov/nceh/lead/news/cdc-updates-blood-lead-reference-value.html . Of course, even that level is not "safe," since there is no safe level of lead exposure.

[10] EPA Off. Res. & Dev., *EPA Tools and Resources Webinar: Multi-Media Modeling of Children's Lead Exposure* (2018), https://www.epa.gov/sites/default/files/2018-10/documents/multimedia_pb_slides.pdf.

[11] Council on Env't Health, Prevention of Childhood Lead Toxicity, 138(1), *Pediatrics* (2016), https://publications.aap.org/pediatrics/article/138/1/e20161493/52600/Prevention-of-Childhood-Lead-Toxicity?autologincheck=redirected.

[12] *See* 21 C.F.R. § 165.110(b)(4)(iii)(A).

[13] 88 Fed. Reg. 8500.

[14] Bruce P. Lanphear et al., *Low-Level Environmental Lead Exposure and Children's Intellectual Function: An International Pooled Analysis*, 113 Env't Health Perps. 894 (2005), http://dx.doi.org/10.1289/EHP5685.

[15] EPA, Integrated Science Assessment for Lead: External Review Draft, Off. of Rsch. and Dev., at lxxxviii (Mar. 2023) ("Draft ISA"), at IS-101, https://ordspub.epa.gov/ords/eims/eimscomm.getfile?p_download_id=546539.

protect children at an action level of 10 and as demonstrated by (Lanphear 2019) may even result in elevated IQ loss for children aged 5-10 years old.

These harms also will not be evenly distributed. Black children have the highest median blood lead levels. .[16] Children living in homes below the federal poverty line had higher blood lead levels than children living above the poverty line, and Black children living below the poverty line had markedly higher blood lead levels than children in any other demographic reported.[17] Those disparities are not surprising since people of color are more likely to live in a home with a lead service line, and Black children are more likely to live in a home with lead paint.[18]

A 10 ppb LAL also unnecessarily exposes tens of millions of older children and adults to the risk of harm. Sixty-one million people in the country are served by water systems with 90th percentile lead levels above 5 ppb lead; and 186 million people are served by drinking water systems with 90th percentile lead levels above 1 ppb.[19] All of those people are at risk of harm from exposure to lead in their drinking water.

While the proposed rule's 10-year mandate for the removal of lead service lines by most systems, if fully implemented, would be a major step forward, that mandate will not obviate the need for other measures to protect health like CCT, public education, and point of use devices that would be triggered by a LAL exceedance. As discussed earlier, the proposed 10-year mandate contains many loopholes, some of which will allow certain water systems to take decades to remove all service lines and others that will permit and/or result in many lead services lines not being removed at all.[20] As discussed in the CCT section of these comments, those loopholes and several other reasons make CCT following a LAL exceedance necessary to protect health.[21] The LCR's LAL is a significant driver for reducing lead exposure, and setting a 10 ppb LAL rather than a significantly lower LAL, would not "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[22]

ii. Lowering the LAL below 10 ppb is feasible

Lowering the LAL to significantly below 10 ppb is also feasible. EPA explains in the proposed LCRI how it chose 10 ppb to be the new LAL.[23] The primary reason EPA selected 10 ppb was because it "is supported by past CCT performance data as being generally representative of OCCT."[24] EPA states that a 5 ppb LAL "would not be considered generally representative of

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[16] Indicator B2, Table in ACE: Biomonitoring – Lead, EPA, https://www.epa.gov/americaschildrenenvironment/ace-biomonitoring-lead#B2; Rocha, A., & Trujillo, K. A. (2019). *Neurotoxicity of low-level lead exposure: History, mechanisms of action, and behavioral effects in humans and preclinical models*. Neurotoxicology, 73, 58-80.

[17] *Id.*

[18] 86 Fed. Reg. 71,574-01, 71,575; Yeter et al., *Disparity in Risk Factor Severity for Early Childhood Blood Lead, supra* note 4 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7084658/).

[19] *See* Kristi P. Fedinick, *Millions Served by Water Systems Detecting Lead*, NRDC (May 13, 2021), https://www.nrdc.org/resources/millions-served-water-systems- detecting-lead.

[20] *See* Sections 2.A, 2.C., and 2.D of our comments.

[21] *See* Section 10.A of our comments.

[22] 42 U.S.C. § 300g-1(b)(7)(A).

[23] 88 Fed. Reg. at 84,939-41.

[24] *Id.* at 84,939.

optimized conditions for systems with LSLs."[25] But that is *not* the applicable test. The Final Rule *must* be a rule that prevents adverse health effects to the extent feasible.[26] And as discussed earlier, a treatment technique is "feasible" if it is achievable "with the use of the best technology, treatment techniques and other means which the Administrator finds . . . are available (taking cost into consideration)."[27] As interpreted by EPA and the D.C. Circuit Court of Appeals, "feasible" means "technically possible and affordable,"[28] "by large metropolitan or regional public water systems."[29]

EPA has extensive evidence and its own analyses demonstrate that LALs lower than 10 ppb are technically possible and affordable by large metropolitan or regional public water systems. Indeed, according to EPA's calculations, over two-thirds of water systems already have achieved and would continue to achieve 90th percentile lead levels lower than 5 ppb.[30] EPA's analysis shows that about 95 percent of larger water systems (serving populations of 10,000 or more) would meet a 5 ppb lead action level when they don't have LSLs.[31] Even among those large systems that *do* have LSLs, from 0 to 9 percent of systems (depending upon size) that don't have corrosion control, and about 28-39 percent of systems (also depending on size) with corrosion control, would meet a 5 ppb action level.[32] As discussed in the lead service line replacement section at greater length, the statutory test is whether it is technically possible and affordable for large metropolitan systems to achieve the standard, not whether every single system currently meets the standard. If the latter were the case, there would be little point in adopting the regulation, since every large system would already be meeting its requirements. EPA would therefore violate the SDWA if the LAL in the final LCRI is 10 ppb or higher.

In addition, EPA determined 35 years ago that lead in water can be reliably measured at 5 ppb (and has further concluded that when lead is measured in water at 5 ppb, there is a high degree of confidence that lead is present at or above that level).[33] But as set forth in Section 10.J, evidence shows that lead can be reliably measured at much lower levels—as low as 0.5 ppb.[34]

EPA's bases for lowering the LAL to no lower than 10 ppb also are not reasonable. As mentioned above, EPA's primary basis is its reliance on "past CCT performance data,"[35] which violates the SDWA. Past CCT performance data is not representative of how effective CCT *can be* and EPA is partially to blame. For example, in the past under the old LCR and the LCRR, once a small or medium water system had a lead action level exceedance, under some circumstances they were only required to employ CCT to reduce lead levels to the action level

[25] *Id.* at 84,940.
[26] 42 U.S.C. § 300g-1(b)(7)(A).
[27] *Id.* § 300g-1(b)(4)(D).
[28] *City of Portland v. EPA*, 507 F.3d 706, 712 (D.C. Cir. 2007).
[29] 88 Fed. Reg. at 84,901 (quoting H.R. Rep. No. 93-1185 (1974)); *see also* Section 2.C.
[30] *See* 88 Fed. Reg. at 84,940 (Exhibit 4), 84,941 (Exhibit 5).
[31] *Id.*
[32] Ibid.
[33] *See* 86 Fed. Reg. at 4,281-82 (§ 141.2), 4,207-08 (defining Practical Quantitation Level and explaining that that level is 5 ppb for lead); 88 Fed. Reg. at 84,942-43; 53 Fed. Reg. 31,516, 31,550 (Aug. 18, 1988).
[34] Section 10.J.
[35] 88 Fed. Reg. at 84,939.

(15 ppb).[36] The original LCR and LCRR did not require those systems to get their lead to a level as low as possible.[37] (The LCRI improperly does the same.[38]) If EPA had required them to employ CCT to reduce lead levels to as low as possible, in line with SDWA mandates, past CCT performance would likely have been better.

It also is not reasonable because the 1991 LCR's CCT requirements have not kept up with advances in corrosion control science. For example, it is now known that polyphosphate- and silicate-based corrosion inhibitors are ineffective for controlling lead release, and that orthophosphate should be tested across a broader range of dosages.[39] As a result, systems that conducted CCT tests under the 1991 LCR requirements may not have actually identified an effective, let alone optimized, corrosion control treatment. It is nonsensical to base the LAL on results obtained by systems that are relying on outdated, demonstrably ineffective CCT options. To base the lead action level on water systems' past illegal and non-health protective actions would be "rewarding" the systems for failing to abide by the LCR and failing to employ modern scientific knowledge to protect consumers.

Another reason EPA sets forth for not proposing a LAL lower than 10 ppb is because it "found that requiring small and medium water systems to install OCCT regardless of their tap levels would impose 'an unworkable administrative burden upon States'" and strain resources for the water systems.[40] That is because small and medium systems with limited resources constitute the overwhelming majority of systems, (naturally) more systems would have LAL exceedances, and those additional exceedances would trigger CCT requirements that strain limited resources of both the states and those water systems.[41] But this concern is irrelevant under the statute, which requires EPA to base its determination of feasibility on what large systems can achieve. Moreover, the concern about unworkability for smaller systems is unfounded for several reasons.

First, those types of reasons are why the proposed rule permits small systems to avoid CCT altogether and choose other options for controlling lead.[42] And small systems permitted to choose alternative options constitute more than 82 percent of the "small and medium systems" over which EPA expresses concern.[43] If CCT would be too difficult for small systems, such systems could choose another option, avoiding CCT altogether. And for medium systems and the subset of small systems that want to implement CCT, EPA should develop ways to mitigate the burdens for such systems and states, rather than enacting a rule that would require fewer systems to implement CCT. Requiring more systems to do CCT would generate substantial public health benefits and, conversely, relieving small and medium systems from CCT would create substantial, unnecessary public health risks and fail to protect public health to the extent feasible.

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[36] LCR, 40 C.F.R. 141.81(c)(1991), as in effect under the original LCR, see, 56 Fed. Reg. 26,460, at 26,550 (June 7, 1991), and LCRR at 86 Fed. Reg. at 4,285 (LCRR revising 40 C.F.R. 141.81(c)).
[37] See LCR and LCRR versions of 40 C.F.R. 141.81(c), cited supra note 36; see also *infra* Section 10.B.
[38] *See infra* Section 10.D.
[39] *Infra* Section 10(C)(i), (E)(iv).
[40] 88 Fed. Reg. at 84,941-42 (quoting 56 Fed. Reg. 26,492).
[41] *Id.*
[42] *See id.* at 84,945; *infra* Section 6.
[43] *Id.* at 84,941-42 (40,113 of 48,513 = 82 percent).

There are several ways EPA has proposed to and could mitigate the burdens on water systems and States. EPA's proposed section 141.82(c)(3) allows water systems to evaluate corrosion control treatments using "analyses based on documented analogous treatments with similar size systems that have similar water chemistry and similar distribution system configurations."[44] We propose transparency requirements for CCT studies in Section 10.C.iv. of our comments in part to make it easier for small and medium water systems to take advantage of this option for CCT studies. And in Section 10.D. of these comments, we propose that EPA conduct, or require States to conduct, systematic corrosion control studies using typical, representative source waters across the country (or their state) to provide a robust baseline of CCT studies that states and water systems could use to extrapolate to treatment requirements for individual small- and medium-size systems. In that section we also propose modified procedures for determining OCCT for small and medium systems that are meant to make it quicker and easier for those systems to complete their initial CCT requirements following LAL exceedances and that would rely on State expertise for CCT determinations.[45]

EPA's administrative concerns, therefore, are largely unwarranted. Even if warranted, however, such concerns should not and cannot legally override the countervailing requirement to protect health to the extent feasible.

EPA concludes a 10 ppb LAL would prevent known or adverse health effects to the extent feasible,[46] but knows that it uses an improper test to reach its feasibility conclusion. The basis for EPA's conclusion is that a 10 ppb LAL "would ensure the treatment technique of CCT is feasible for small and medium systems."[47] But as noted above, and as EPA acknowledges earlier in the proposed rule, feasibility means feasible "by large metropolitan or regional public water systems."[48] EPA therefore must set the LAL in the Final Rule significantly lower than 10 ppb and at a level that meets the applicable standard.

B. Responses to EPA's requests for comment about the Lead Action and Trigger Levels

1. *EPA is seeking comment on the proposed lead action level of 0.010 mg/ L, as well as comment and supporting data on alternative action levels, such as 0.005 mg/L, with regards to generally effective corrosion control treatment and identifying systems most at risk of elevated levels of lead in drinking water.*

The final LCRI should include a lead action level of no higher than 5 ppb because that will better prevent adverse health effects and is feasible.[49]

[44] *Id.* at 85,059 (§ 141.82(c)(3)).
[45] *See* Section 10.D.
[46] 88 Fed. Reg. at 84,943.
[47] *Id*.
[48] *Id*. (quoting H.R. Rep. No. 93-1185 (1974)).
[49] *See supra* Section 4.A.

2. *EPA is also seeking comment on the use of the action level to determine when additional public education is required, and the use of the same action level for public education as for the CCT provisions.*

We agree that enhanced public education requirements should be triggered by tap sampling results that exceed a specified threshold. In our CCT section, we have proposed alternative triggers for CCT requirements that are feasible and would be more health protective.[50] We agree that using the same trigger levels for CCT and for enhanced public education is logical and would help to simplify the rule. In our public education section 8.E, we have more specific suggestions about the manner and frequency of the public education following that trigger.[51]

3. *EPA is seeking public comment, data, and information on the anticipated benefits and tradeoffs, including for public health and administrative burden on systems and States, if more small and medium systems are required to conduct a detailed OCCT demonstration and take other actions if they exceed the proposed action level of 0.010 mg/L or other lower values, while water systems are simultaneously required to mandatory conduct full service line replacement.*

As discussed above, EPA is legally required to include in the final rule a LAL lower than 10 ppb, and legally required to mandate CCT upon an LAL exceedance. We also believe that at both a 10 ppb or a lower LAL, the anticipated benefits of requiring detailed OCCT demonstration and other actions upon a LAL exceedance for small and medium system outweigh the administrative burdens while those systems simultaneously conduct lead service line replacement. As discussed above (and also in sections 10.C.-E), requiring CCT upon an exceedance would generate substantial public health benefits and we propose several ways to mitigate the burdens for water systems and states. Similarly, while we recommend public outreach activities be conducted by all systems independently of the LAL, enhanced public outreach will be beneficial at both 10 ppb or a lower LAL.[52]

C. Additional requirements for systems with multiple lead action level exceedances

EPA proposes that filters be made available to consumers in water systems that have had multiple LAL exceedances. This is necessary and we support this. However, for the reasons discussed below, EPA must also require water systems to provide filters to consumers after even one LAL exceedance and those filters must be provided at no cost to the consumer.

i. EPA must require water systems with a lead action level exceedance to provide filters to all consumers in the system

We applaud EPA for recognizing that consumers in water systems with LAL exceedances need protection from lead exposure while "during the period that the system completes the longer-term actions that are expected to resolve the underlying problem," like OCCT and mandatory LSLR.[53] EPA has stated that selecting and implementing OCCT generally takes

[50] *See infra* Section 10.E.
[51] *See infra* Section 8.E.
[52] *See infra* Section 8.E.i, iv.
[53] 88 Fed. Reg. at 84,954.

about 5 years.[54] And the mandatory LSLR proposal would require completion within 10 years for most systems, and no fewer than five. Accordingly, it is imperative to reduce exposure in the short term while those activities are completed because an LAL exceedance indicates a present worrisome lead exposure problem throughout the system.

We also agree with EPA that pitcher filters or point of use filters are what water systems should be required to provide consumers in such situations with high lead exposure. The SDWA requires treatment-technique regulations to "prevent known or anticipated adverse effects on the health of persons to the extent feasible"[55] and grants EPA the authority to regulate public water systems to achieve this.[56] And Congress has explicitly required EPA to consider and list POU devices that can be used, subject to certain safeguards, as an available technology for small systems to comply with drinking water standards.[57] NSF/ANSI requires filters for lead to reduce lead levels to 5 ppb to receive certification.[58] Thus, certified filters provide immediate assistance for preventing adverse health effects from lead exposure and will allow consumers to continue using water from the utility rather than switch to costly bottled water.

This protection, including under EPA's reasoning, is necessary for consumers any time there is a lead action level exceedance. EPA perplexingly proposes that water systems provide filters to consumers where there is an action level exceedance, but only when the system has exceeded the LAL at least three times in a rolling five-year period.[59] But this makes no sense. Even one LAL exceedance, which means that the water at more than ten percent of sampled sites have lead levels higher than 10 ppb (under the proposed LAL), is alarming given that exposure to any level of lead presents risk. It also indicates that corrosion control treatment and/or other measures a water system is taking is not effective for controlling lead.[60]

EPA further reasons that filters should be made available to consumers with multiple exceedances "because those exceedances are indicative of recurring high lead levels that warrant additional measures while OCCT and mandatory service line replacement are being implemented."[61] But that logic is not limited to multiple action level exceedances. EPA states that "[t]ap sampling . . . is intended to determine the effectiveness of CCT."[62] So once there is an LAL exceedance, there is indication that CCT is not effective. That CCT will remain ineffective until new measures such as OCCT and LSLR are implemented, which, as stated above, EPA estimates will take at least five years. The results of two more sampling periods within those five years will therefore shed no new light on the ineffectiveness of the current CCT. The consumed water will remain ineffectively treated until new measures are implemented. Thus, EPA's reasoning that filters should be provided because measures to reduce the lead level in such circumstances will not reduce them right away apply equally to a system

[54] *Id.* at 84,937.
[55] 42 U.S.C. § 300g-1(b)(7)(A).
[56] *Id.* § 300g.
[57] *See id.* § 300g-1(b)(4)(E)(ii).
[58] Nat'l Sanitation Found., *Drinking Water Treatment Units Must Now Meet Stricter Requirements for Lead Reduction Certification*, https://www.nsf.org/news/drinking-water-treatment-units-stricter-requirements-lead-reduction-cert.
[59] 88 Fed. Reg. at 85,072-73 (§ 141.85(j)).
[60] *See id.* at 84,939.
[61] *Id.* at 84,954.
[62] *Id.* at 84,929.

with one LAL exceedance as a system with three exceedances within a five-year rolling period. EPA also knows that subsequent testing does not, and would not, demonstrate that lead levels are lower/better controlled than in the last sampling period. EPA understands that lead levels vary greatly day to day, even at a single site,[63] so sampling on different days without any change in treatment reveals little. Again, there would be no reason to believe that risk has diminished when, as EPA explains, the actions begun after the LAL exceedance would not have produced any results yet. Thus, providing filters only after three exceedances within a five-year rolling period simply subjects consumers drinking water with ineffective CCT to high levels of lead in their water for two or more additional sampling periods. EPA therefore should require any water system with one LAL exceedance to provide filters to all of its consumers. If EPA insists on not requiring filter provision until there has been more than one LAL exceedance, it should require their provision after two LAL exceedances in a five-year rolling period rather than three.

ii. Filters should be delivered to all consumers in the water system at no charge

As discussed in more detail below, for the required filter provision after LAL exceedances to be effective, water systems must be required to deliver filters to all consumers in the water system and continue delivery of cartridges until there is evidence that very high levels of lead have abated, all at no cost to the consumers. Consumers must also receive instructions and information about proper installation and maintenance of their filters.

The Federal Register Notice for the proposed LCRI contains ambiguous language when describing EPA's proposal regarding the provision of filters for multiple exceedances. More specifically, the provision makes it unclear whether water systems with multiple exceedances must provide filters for free. The relevant proposed language for Section 141.85 states:

> Water systems with multiple lead action level exceedances, as specified in paragraph (j)(1) of this section, must conduct annual public outreach and **make filters certified to reduce lead available** as specified in paragraphs (j)(2) through (6) of this section.[64]

Paragraph (j)(2) then says:

> No later than 60 days after the tap sampling period in which a water system meets the criteria of paragraph (j)(1) of this section, a water system must **make available** to all consumers pitcher filters or point-of-use devices certified by an American National Standards Institute accredited certifier to reduce lead, six months of replacement cartridges, and instructions for use. A water system must continue to make replacement cartridges

[63] *Id.* at 84,907; *see also* 2021 EPA Emergency Administrative Order for Clarksburg Water Board ¶¶ 18-19, 23, CWA-03-2021-0110DS (U.S. Env'tl Prot. Agency July 14, 2021) (showing large variability in sampling at same site, including one residence sampling at 20.3 ppb one day and then 8,940 ppb 5 days later), https://yosemite.epa.gov/OA/RHC/EPAAdmin.nsf/Filings/5D20FEB828000B458525871300486662/$File/Clarksburg%20Water%20Board.%20PWS%20Emergency%20Administrative%20Order.%207.14.2021.pdf.

[64] 88 Fed. Reg. at 85,068 (§ 141.85) (emphasis added).

> available until the system may discontinue actions in accordance with paragraph (j)(6) of this section.[65]

But the proposal fails to clarify whether "make available" means solely to alert consumers to a place where they can *purchase* such filters or means make the filters available to consumers at *no cost to them*.

Other regulatory language and the preamble do not clarify this ambiguity, but rather add to the confusion. For example, section 141.85(j)(3) requires water systems to submit a "filter plan" that describes "*delivering* filters when requested by the consumer," and subsection (j)(4) mandates community outreach that includes "how to *obtain* a filter certified to reduce lead" as required by (j)(2), both of which seem to imply that consumers could receive filters at no cost.[66] The applicable request for comment also implies that water systems would not charge consumers for filters. EPA seeks comment on an alternative approach of delivering filters and replacement cartridges to every household,[67] implying that that mechanism would be at no cost to the consumer. EPA mentions that some have raised concerns that that alternative might waste staff and financial resources since not every household will opt to use the filter.[68] The absence of mentioning the financial differential between allowing consumers to pay when requested and delivering to all consumers at no cost supports an inference that the proposed provision means make filters available at no cost. Finally, the corollary reporting provision refers to reporting the number of filters "provided."[69] The term "provided" is used both in that same subsection and elsewhere in the proposed LCRI when filters, public education materials, and other items are presumably provided for free.[70]

But the Federal Register notice contains language that points to the opposite interpretation. When describing water systems with multiple exceedances making certified filters "available" to all consumers, the preamble also says "EPA anticipates that systems would also plan for providing filters and cartridges at no direct cost to low-income consumers, at a minimum,"[71] implying that water systems are permitted to charge customers for filters they make "available."

At a minimum, EPA must clarify the language in the final LCRI so that the meaning is clear. And for the provision to have any meaningful effect, that clarification must be a mandate that filters be provided to consumers in a water system with a LAL exceedance at no cost. If the filter requirement allows water systems to make consumers to pay for the filters, the provision will have little practical effect other than reinforcing current inequities where lead exposure will be addressed for people with economic means, and not for low-wealth persons, a result that

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[65] *Id.* at 85,072 (§ 141.85(j)(2)) (emphasis added).
[66] *Id.* (§ 141.85(j)(3)-(4)); *see also id.* at 85,088 (§ 142.14(d)(8)(xvi)) (referring to the proposed program of making filters "available" as "filter distribution plans").
[67] *Id.* at 84,955.
[68] *Id.*
[69] *Id.* at 85,082 (§ 141.90(f)(10)(i)).
[70] *See, e.g., id.* at 85,082 (§ 141.90(f)(10)(ii)) (public education materials), 85,086 (§ 141.93(c)(1)(B)) (small water systems providing POU filters as alternative to CCT), 85,067 (§ 141.84(h)(iii)) (partials).
[71] *Id.* at 84,955.

disproportionately affects people of color.[72] We also oppose allowing water systems to provide filters at no cost only to low-wealth consumers. Any such program would require eligible consumers to submit documentation to show their income level, adding more barriers to protecting their health. Protection from lead exposure in drinking water also is a public health issue that EPA should be seeking to eradicate for all.

We further suggest that EPA adopt a program that contains the following requirements. Within 30 days following a lead action level exceedance, water systems must deliver filters independently certified to meet NSF/ANSI standards to reduce lead, with instructions and cartridges sufficient for one year to all consumers. Given: the risks associated with lead exposure; the immediate effectiveness of filters in the short term; the limits of any outreach campaign; and, the lack of transportation for some people, delivery should be required rather than notification that filters can be picked up somewhere. (If EPA does not include an automatic delivery mandate in the final rule, it should require pickup be established at a one or more centralized location(s) and that the water system offer an easily accessible way to request delivery of filters, and deliver filters and supplies when requested. The water system should be required to continue delivering cartridges unless and until it has taken additional actions to reduce lead levels and has two consecutive sampling periods without an LAL exceedance. Finally, EPA should make publicly available on a website educational videos explaining how to install and maintain filters and cartridges (or require water systems to make such videos) and require water systems to include a link to those videos in materials it delivers with the filters. Experience in Flint, Michigan following their lead-in-drinking-water crisis shows that numerous people were not able to install filters and/or change cartridges without assistance.[73] Thus in order for filters to have the effect intended, it is important that EPA include in the final rule mechanisms to ensure that people who receive filters can access filter instructions and know that such instructions are available.

D. Responses to EPA's requests for comment about Additional Requirements for Systems with Multiple Lead Action Level Exceedances

1. *Whether water systems should be required to take additional actions when the system exceeds the lead action level multiple times and if so, what actions are appropriate and feasible, and when these additional actions should be required under the LCRI.*

As discussed above in Section 4.C.i, additional actions should be required for not only multiple LAL exceedances, but after one exceedance. As discussed in Section 4.C.ii, those actions should include the delivery of filters and related materials. In our public education

[72] *See* Env't Def. Fund & Am. Univ. Sch. of Pub. Affairs, Lead Pipes and Environmental Justice: A study of lead pipe replacement in Washington, DC 6-7 (Mar. 2020), https://www.edf.org/sites/default/files/u4296/LeadPipe_EnvironJustice_AU%20and%20EDF%20Report.pdf; see also, Environmental Justice section of these comments, *infra* section 15, for additional citations and details.

[73] *See, Concerned Pastors for Social Action*, 217 F. Supp. 3d 960, 974 (E.D. Mich. 2016) (describing witness testimony from crisis responders that as many as 52% of homes visited in Flint had residents who had various problems installing filters); Hr'g Tr. 27:16-51:2, 47:14-49:1, *Concerned Pastors for Social Action v. Khouri*, No. 16-10277 (E.D. Mich. Sept. 14, 2016), ECF No. 95 (Testimony of Michael Hood) (Executive Director of frontline crisis intervention humanitarian relief agency reporting on various issues Flint residents experienced with correctly installing and maintaining filters and cartridges, noting that 52 percent of the hundreds of homes organization visited had filter problems).

section, we have suggestions about the manner and frequency of the public education following a LAL exceedance. *See* Section 8.E. In our CCT section, particularly Section 10(E), we have suggestions about the contours of CCT that should be required after one or more LAL exceedances.

2. *Whether EPA should use three action level exceedances in a five-year period for identifying systems with multiple action level exceedances where additional action is warranted and, whether additional actions should be required sooner, or later, than the five-year period, or whether EPA should use a modified metric (number of consecutive action level exceedances in a set time period) or a different metric entirely (i.e., based on one or more factors other than the number of action level exceedances in a set time period).*

As discussed above in Section 4.C.i, EPA should require additional actions, such as the delivery of filters to all consumers at no charge, to occur after a water system has one LAL exceedance.

3. *The proposed public education activities after a system exceeds the lead action level multiple times. EPA is specifically seeking any information, data, or analysis on whether the proposed public education activities support preventing adverse health effects in this situation. EPA is also requesting comment on whether systems should be required to conduct more than one (e.g., two or three) of the public education activities proposed.*

As described in more detail in Section 8.E.i, some of the proposed public education activities may be ineffective without additional criteria (e.g. for town hall meetings, publicity and notice requirements). Because face to face, individualized contact tends to be more effective than other outreach activities, we would encourage EPA to require water systems to contact customers by two of the following options: phone, text, email, door hanger, or through an outreach activity in partnership with a local community organization.

4. *Whether EPA should require water systems to make filters certified to reduce lead and replacement cartridges, along with instructions for use, available to all consumers within 60 days of a system having multiple action level exceedances and whether there are any supporting or contrary data on whether the proposed filter requirement would be protective of public health.*

As described above in Section 4.C.ii, within 30 days following a LAL exceedance, water systems should be required to deliver filters independently certified to meet NSF/ANSI standards to reduce lead and replacement cartridges, along with instructions for use, to all consumers at no charge, and continue to deliver replacement cartridges. Because those filters would reduce lead levels to 5 ppb[74] in a water system where more than 10 percent of sites sampled exceeded 10 ppb, the filter requirement would be more health protective than not providing filters.

[74] *See supra* Section 4.C.i.

5. *The proposed requirements for systems to develop a filter plan and submit to the State after the system has multiple action level exceedances for the first time, and whether EPA should require systems to take additional actions to facilitate filter distribution.*

We agree that water systems should develop a filter plan and submit it to the State. Our suggestions for additional required actions are set forth above in Section 4.C.

6. *Alternative requirements for systems with multiple action level exceedances to provide filters to their consumers, such as requiring water systems to provide filters and replacement cartridges to consumers served by an LSL, GRR service line, or unknown service line or to all consumers, or to require systems to consult with the State upon meeting the criteria for multiple action level exceedances, after which the State determines the appropriate action to reduce lead exposure.*

We support requiring water systems to deliver filters at no charge to all consumers in the system following an LAL exceedance. While such filters must, at a minimum, be delivered to consumers with LSLs, GRR service lines, or unknown service lines, they should be delivered to all consumers. As set forth in Section 2.C.i., many lead connectors do not "count" as a lead service line under the proposed rule, but can release lead similar to the way a lead service line releases lead, and therefore pose a public health risk. Indeed, in many systems the majority or even all of known lead plumbing takes the form of lead connectors.[75] But the inventories do not include the location of shorter connectors and therefore delivering filters to only those consumers with LSLs, GRR service lines, or unknown service lines, would clearly leave some consumers unnecessarily unprotected from water flowing through materials that can and will leach lead. Water systems should also be required to deliver filters to all consumers, regardless of whether they have lead service lines, because some water systems with LAL exceedances claim to have no lead service lines,[76] yet those consumers are still at risk from high lead levels.

We do not support EPA providing States discretion to determine the appropriate action following whichever number of LAL exceedances trigger the provision of certified filters. Provision of filters can provide immediate protection and reduce levels to 5 ppb. As discussed above, EPA acknowledges that other actions take time to implement. States should not be allowed to authorize the use of other actions in the place of filters that will unnecessarily leave consumers exposed to high levels of lead for a longer period of time.

7. *An additional provision providing discretion to States to allow systems with multiple action level exceedances to discontinue the proposed required actions sooner if the system takes actions (e.g., installs optimized or reoptimized CCT, completes mandatory service line replacement) and is at or below the lead action level for two consecutive monitoring periods.*

[75] Simoni Triantafyllidou, U.S. EPA Office of Research & Dev., EPA Tools & Resources Webinar: Identifying Lead Service Lines in the Community (Oct. 26, 2022) at slide 9, https://www.epa.gov/system/files/documents/2022-11/508%20Compliant%20-%20Identifying%20Lead%20Service%20Lines_Oct%202022.pdf.
[76] *See, e.g.*, Portland.gov, Lead & Drinking Water, https://www.portland.gov/water/water-quality/lead.

As stated above in Section 4.C.ii, we propose allowing water systems to discontinue the proposed actions if the system takes additional actions and is at or below the lead action level for two consecutive monitoring periods.

8. *Whether, in addition to the proposed requirements, EPA should provide States discretion to determine appropriate action following a multiple action level exceedance that is tailored to meet specific system needs.*

We support EPA permitting States to determine *additional* appropriate actions that a water system must take following an LAL exceedance, or multiple LAL exceedances tailored to a specific water system as long as those actions must be in addition to, and not in place of, the actions required by the final LCRI. In setting the minimum requirements of the LCRI, EPA must keep in mind that some states have "not more stringent than federal law" clauses that could preclude state officials from taking any additional actions not required by the LCRI.

E. EPA must adopt a higher percentile benchmark than the 90th percentile benchmark adopted in 1991 for a LAL exceedance

The proposed LCRI adopts the same 90th percentile benchmark for an LAL exceedance that the original 1991 LCR used. But EPA has failed to address, let alone provide reasoning or analysis to support, this wholesale adoption of the 90th percentile as the benchmark for an LAL exceedance/actions to reduce lead levels, or explained how it meets the SDWA mandate to "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[77]

i. A percentile higher than 90th would better prevent adverse health effects

EPA should adopt a standard more stringent than the 90th percentile because doing so would result in more systems having an "LAL exceedance" and thus having to take immediate steps to control lead levels and educate the public. This, naturally, would provide greater health benefits.

Using the 90th percentile to calculate lead levels does not "prevent known or anticipated adverse effects on the health of persons."[78] A 90th percentile level allows water systems to "have several sample values above the action level and still not trigger system-wide treatment."[79] These "several sample values" above the LAL have sometimes constituted EPA-declared emergencies, yet did not trigger any actions the water system was required to take to reduce lead in its drinking water. These examples provide real-life evidence that the 90th percentile does not prevent known adverse health effects and can result in a health emergency being unaddressed.

For example, in Clarksburg, West Virginia, EPA issued an emergency order finding "an imminent and substantial endangerment to the health of all consumers" of an entire water system.[80] The emergency declaration stemmed from sampling at the homes of three children with

[77] 42 U.S.C. § 300g-1(b)(7)(A).
[78] *Id.*
[79] 56 Fed. Reg. at 26,515.
[80] *See In re Clarksburg Water Board*, CWA-03-2021-0110DS (U.S. Env'tl Prot. Agency July 14, 2021), *available at* https://yosemite.epa.gov/OA/RHC/EPAAdmin.nsf/Filings/5D20FEB828000B458525871300486662/$File/Clarksburg%20Water%20Board.%20PWS%20Emergency%20Administrative%20Order.%207.14.2021.pdf.

alarmingly high blood levels that was conducted outside the LCR.[81] Yet, if the sampling had occurred within the LCR's regimen it would not have required any immediate corrective action, much less an emergency response under 90th percentile calculation. Using a 90th percentile, corrective action is required only if samples from more than 10 percent of sites have lead levels greater than 15 ppb.[82] The Clarksburg Water Board serves 17,686 people. The Board generally is required to sample at least 60 sites.[83] At the time of the children's elevated blood lead levels, the Board was on reduced monitoring, thus requiring samples of at least 30 sites.[84] Thus, there would have been a lead action level exceedance requiring corrective action only if at least 4 samples measured greater than 15 ppb. If, however, the benchmark had been the 95th or 98th percentile, those 3 samples under LCR sampling *would have* constituted a LAL exceedance requiring corrective action.[85]

Similarly, in Flint, according to a memo from the Acting EPA Regional Administrator (RA) for Region 5, the 90th percentile sampling results failed to flag a problem despite extremely high lead levels in many homes.[86] As the Region 5 memo notes,

> LCR sampling results for Flint were 6 ppb in January 2015 and, during the height of the crisis, 11 ppb in July 2015. Even as Flint's lead lines were stripped of protective coating from the corrosive Flint River water, the LCR did not reveal a need for action; indeed, the data tended to allay concerns rather than indicate that swift action was needed.[87]

As the EPA Region 5 RA further points out, a major culprit for this kind of problem in many cases is the use of the 90th percentile. The memo goes on to note,

> The LCR' s trigger for water system action is based on a calculated 90th percentile value for lead (i.e., 90% of the homes sampled must be at or below the lead AL of 15 ppb). The remaining 10% of homes may have elevated levels of lead in their drinking water, but do not factor into the LCR calculation. They might average out to 16 ppb (just above the action level) -- or they might be 1,000 or 4,000 ppb. There is no action required to be taken in response to the highest lead levels found,[88] despite the risk of exposure to children consuming this water. In effect, the greatest exposure to and harm from the highest lead levels in the system is not visible in the LCR framework.
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> As noted, high sporadic lead levels are often the result of particulate lead. Such a particle may contain thousands to tens of thousands of ppb lead, which in extreme cases can

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[81] *See id*. at 4.
[82] *See* 40 C.F.R. § 141.80(c).
[83] *See* 40 CFR § 141.86(c).
[84] *See id*.
[85] *Id*.
[86] Memo from Robert A, Kaplan, Acting Regional Administrator, EPA Region 5, to Michael H. Shapiro, Acting Assistant Administrator, Office of Water, "Region 5's Experience in Implementation of the Lead and Copper Rule," Dec. 29, 2017.
[87] *Id*. at 5.
[88] The LCRR added a "find-and-fix" provision in an attempt to address individual tap sampling results above the action level, which the LCRI largely retains as "distribution system and site assessment." 88 Fed. Reg. at 84,944. However, as discussed in section 10(I), *infra*, the LCRI's proposed provisions are inadequate to fix this problem and should be strengthened.

> result in acute lead exposure for a child in a single glass of water. Because particulate lead release is unpredictable, sample results from the same tap in the same home can yield low lead on one day and high lead on another….The majority of lead results at this home were low except when a lead particle was released into the water, spiking the lead level to 1180 ppb at the same kitchen tap that subsequently yielded very low results (2.69 ppb and 3.1 ppb). If the highest result is in the top 10% of sample results (i.e., is outside the 90th percentile specified in the LCR), it has no regulatory consequence and can be ignored.[89]

For these reasons, the 90th percentile approach can mask serious lead contamination problems and cause a false sense of security for water systems, states, EPA and most importantly citizens who unknowingly may be drinking high levels of lead in their water.

Ten percent of samples over a whole system could equate to thousands or even hundreds of thousands of people exposed to high lead levels without requiring the water system to take any steps to abate the issue. In New York City, for example, using the 90th percentile could result in no corrective action required even if an extrapolated 800,000 households had lead levels greater than 15 ppb in their drinking water. This is despite the fact that, as EPA admits, "*any* lead and copper problems found in the sites selected for sampling represent a wider problem within the system."[90] Indeed, Clarksburg is not alone in having extreme LAL exceedances posing immense danger to the people living there without triggering any meaningful water system response. Flint, Michigan, Benton Harbor, Michigan, Washington, DC, and Newark, New Jersey all had incidences of extremely high lead detections and subsequent lead in drinking water crises even though there was no resolution of these cities' lead problems, generally for years after serious lead contamination was detected in some homes was detected. And unsurprisingly, the 1991 LCR "formula" for requiring more than 10 percent of sampled sites to have LAL higher than 15 ppb has resulted in lead poisoning of children as a result of drinking water without their water systems having a "lead action level exceedance" requiring corrective action.[91]

The 90th percentile calculation also raises environmental justice concerns. The harm of lead in drinking water is not spread equally: people of color are more likely to have LSLs and elevated levels of lead in tap water, and children of color, especially Black children, are more likely to have elevated blood lead levels.[92] Moreover, people of low-wealth are most likely to

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[89] *Id.* at 13.
[90] 56 Fed. Reg. at 26,515.
[91] *See, e.g.,* Mona Hanna-Attisha et al., Elevated Blood Lead Levels in Children Associated with the Flint Drinking Water Crisis A Spatial Analysis of Risk and Public Health Response, 106 AM J PUBLIC HEALTH 283, 283–90 (Feb. 2016); Marc Edwards et al., Elevated Blood Lead in Young Children Due to Lead-Contaminated Drinking Water: Washington, DC, 2001-2004, 43 ENVIRON SCI TECHNOL 1628, 1618–23 (Mar. 2009); Mary Jean Brown et al., Association Between Children's Blood Lead Levels, Lead Service Lines, and Water Disinfection, Washington, DC, 1998–2006, 111 ENVIRON. RES 67, 67–74 (Jan. 2011); Simoni Triantafyllidou et al., Lead Particles in Potable Water, 99 J AM WATER WORKS ASSOC 107, 107–17 (JUN. 2007); Rebecca Renner, Out of Plumb: When Water Treatment Causes Lead Contamination, 117 ENVIRON. HEALTH PERSPECT. A542, A542–A547 (Dec. 2009).
[92] *See,* Environmental Justice section of these comments, *infra* section 15.

live with drinking water violations and poor response to them.[93] These same communities are therefore most likely to be where spikes of lead exceeding the lead action level occur, but because of the 90th percentile approach, these spikes will not trigger a LAL exceedance. Under the 90th percentile scheme, up to 10% of these spikes can occur without requiring the water system to take any action at all. This puts the health of environmental justice communities disproportionately at risk.

As explained in Section 4.A.i of our comments, even the proposed LAL of 10 ppb is well above a truly health-protective level. If the final LCRI allows ten percent of samples to be higher than that already-dangerous lead level before requiring the water system to take any action, including simply alerting consumers to the danger, it would unnecessarily endanger people's health.

ii. A percentile higher than 90th is feasible

Because adopting a more stringent percentile than the existing 90th percentile would better protect human health, EPA must demonstrate that a more stringent approach is not "feasible" under the SDWA.[94] EPA has not done so in the proposed LCRI, and it is unlikely that it could. In the 1991 LCR, EPA stated that requiring even the largest systems "to attempt to reduce lead levels even when 90 percent of tap samples are below [the 90th percentile] is pushing the limits of corrosion control treatment technology."[95] But, as EPA acknowledges, OCCT has greatly improved over the past 30 years,[96] allowing water systems to reduce lead levels more easily.[97]

Additionally, in 1991 EPA justified using a 90th percentile value because it is simpler to calculate than other measures, such as 95th percentile.[98] But this "math complication" justification is irrelevant under the SDWA's requirement that EPA prevent adverse health effects "to the extent feasible."[99]

As set forth earlier, the test for whether a treatment technique is "feasible" is whether it is achievable "with the use of the best technology, treatment techniques and other means which the Administrator finds . . . are available (taking cost into consideration)."[100] As interpreted by EPA and the D.C. Circuit Court of Appeals, "feasible" means "technically possible and affordable,"[101]

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[93] *See* Kristi Pullen Fedinick et al., Watered Down Justice (NRDC, Environmental Justice Health Alliance and Coming Clean, 2019), https://www.nrdc.org/sites/default/files/watered-down-justice-report.pdf; McDonald YJ, Jones NE. Drinking Water Violations and Environmental Justice in the United States, 2011-2015. Am J Public Health. 2018 Oct;108(10):1401-1407. doi: 10.2105/AJPH.2018.304621. Epub 2018 Aug 23. PMID: 30138072; PMCID: PMC6137766; David Switzer, Manuel P. Teodoro, The Color of Drinking Water: Class Race, Ethnicity, and Safe Drinking Water Act Compliance, September, 2017, . AWWA, v. 109, No. 9, pp. 40-45, https://doi.org/10.5942/jawwa.2017.109.0128.

[94] 42 U.S.C. § 300g-1(b)(7)(A).

[95] 56 Fed. Reg. at 26,492.

[96] *See* 88 Fed. Reg. at 84,939-40.

[97] *See* 88 Fed. Reg. 84,939-40.

[98] 56 Fed. Reg. at 26,491.

[99] 42 U.S.C. § 300g-1(b)(7)(A).

[100] 42 U.S.C. § 300g-1(b)(4)(D).

[101] *City of Portland v. EPA*, 507 F.3d 706, 712 (D.C. Cir. 2007).

"by large metropolitan or regional public water systems."[102] From available data, it appears that a 98th or 95th percentile is feasible. EPA says most systems are already complying with at 90th percentile action level of 5 ppb and 10 ppb,[103] so at a minimum the agency must complete similar analysis for higher percentiles, since EPA's own analysis shows things have changed a lot since 1991.

At a minimum, EPA must assess feasibility at more stringent percentiles. The agency is authorized to legally retain the 90th percentile only if it demonstrates that higher percentiles, like the 99th, 98th, or 95th percentile, are not feasible.

[102] 88 Fed. Reg. 84901; *see also* Sections 2.B, 4.A.ii of our comments.
[103] 88 Fed. Reg, at 84940-41, Exhibits 4 & 5 (indicating majority of water systems already meet both a 10 ppb and a 5 ppb action level).

Section 5: Service Line and Connector Inventories

We support EPA's proposed deadlines for initial and baseline inventories. Water systems have been on notice for over four years that EPA would require them to complete an inventory of the lead plumbing in their systems,[1] and inventories are a necessary foundation for prompt LSLR. Moreover, any water system that ever had an action level exceedance was required to have completed a materials survey of their system that identified all lead service lines in its service area decades ago under the original 1991 LCR requirements.[2] The LCRR required submission of initial inventories by January 16, 2024.[3] On June 16, 2021, systems were given notice they would have an additional nine months, until October 16, 2024, to complete their inventories.[4] Systems have therefore had ample time and notice to complete their inventories by October 16, 2024. We also agree that inventories must be publicly accessible and updated annually. Lastly, we agree with EPA that inventories must include connector materials and locations.

The inventory requirements should be strengthened in the ways below to protect public health and fulfill the public education requirement.

A. Initial Inventory and Annual Updates

While we support EPA's requirement that systems update their inventories annually, we believe that the updates should include the following information in addition to that listed in the proposed rule:

- The number of partial LSLRs performed in the prior year, where they occurred, and why.
- Whether the system met the required number and/or percentage of full LSLRs in the previous year. (yes/no)
- The number of customers or homeowners that denied access for a full LSLR.
- The number of abandoned LSLs left in the ground.

Tracking the number of LSLs left in place is necessary because of the potential for continuous lead contamination to soil and groundwater.[5] For example, a recent series by the *Wall Street Journal* detailed soil contamination from underground and overhead communications cables.[6] It is reasonable to assume lead pipes would pose a similar threat and therefore must be tracked.

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[1] 84 Fed. Reg. at 61,684 (Nov. 13, 2019).
[2] As EPA summarized in the original LCR, "One year after a water system is triggered into the replacement program [by an action level exceedance], it is required to submit to the State a revised materials evaluation identifying the total number of lead service lines in its distribution system." 56 Fed. Reg. 26,460, 26,507 (June 7, 1991).
[3] 86 Fed. Reg. at 4290-91 (Jan. 15, 2021).
[4] 86 Fed. Reg. at 31,947 (June 16, 2021).
[5] This issue was raised to EPA by several groups in September 2023. Comment from Basel Action Network et al. at 1, Docket ID No. EPA-HQ-OW-2017-0300, *Information Request for Lead and Copper Rule Revisions (LCRR)* (Sept. 22, 2023) *available at* https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1914.
[6] Pulliam et al., *America is Wrapped in Miles of Toxic Lead Cables*, Wall St. J., Jul. 9, 2023, *available at* https://www.wsj.com/articles/lead-cables-telecoms-att-toxic-5b34408b?mod=article_inline.

B. Public Availability of Inventories

We strongly support the requirement for publicly available inventories and believe inventories must also be easily accessible by the public. However, we believe more water systems are capable of and should be required to post those inventories; water systems serving over 10,000 people should be required to post their inventories and annual updates online.[7] Lowering the threshold from over 50,000 people[8] down to 10,000 would capture an additional 3,535 systems,[9] ensuring more widespread public education.[10]

Another way the LCRI should make LSL and GRR information publicly available is through the Multiple Listing Service database, which is run by the National Association of Realtors (NAR).[11] This database provides housing information to thousands of websites such as Zillow, and would provide useful information to prospective property buyers, as well as helping to create incentives for property owners including landlords to agree to full LSLR. Water system's LSL inventories should be sent to the NAR for use on the MLS so that homes with LSLs or GRRs are clearly identified on the MLS, realtor.com, and other NAR-supported sites for rental properties (such as Avail) as well as properties offered for sale. These inventories should be searchable by address so that realtors and prospective purchasers and renters can easily identify whether listings are served by a LSL or GRR. EPA should encourage states to have additional transparency for rentals, akin to what some states require for lead paint. Similarly, any abandoned LSL left in the ground should be reported on the MLS.

C. Validation Deadlines, Material Identification Deadlines, and Inventory Validation Requirements

Prompt identification of materials identified as "lead status unknown" and prompt and thorough inventory validation is critical to meeting LSLR deadlines and protecting public health. EPA must therefore set shorter deadlines for identifying materials identified as lead status unknown and for validating inventories. Finally, EPA must also outline minimum requirements for when the inventory validation process reveals misidentified service line materials; this is discussed in detail below.

i. Deadlines

EPA proposes that all unknown materials must be identified by the deadline for mandatory replacements.[12] This is far too late. The deadline for identifying all materials identified as lead status unknown should be no later than three years after rule promulgation.

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[7] The proposed LCRI notes several small systems (serving fewer than 10,000 customers) with websites devoted to informing their customers about LSLR. 88 Fed. Reg. at 84,921.
[8] 88 Fed. Reg. at 85,062 (§ 141.84(a)(5)(ii)).
[9] EPA, Safe Drinking Water Information System (SDWIS) https://sdwis.epa.gov/ords/sfdw_pub/r/sfdw/sdwis_fed_reports_public/21?clear=RIR (accessed Feb. 2, 2024), reporting 4,595 systems serving >10,000 people and 1,060 systems serving >50,000 people.
[10] See sections 8 and 14 for additional comments related to public availability of inventories.
[11] Multiple Listing Network, *Multiple Listing Service*, https://www.mls.com/ (accessed Feb. 1, 2024).
[12] 88 Fed. Reg. at 85,063 (§ 141.84(b)(1)(i)).

This will ensure that systems can meet replacement deadlines if unknown materials are determined to be lead or GRR, and that systems remove lines in the most cost effective and efficient way possible.

EPA's proposal of a deadline for inventory validation for non-lead service lines of three years prior to the final deadline for mandatory LSLR[13] also should be changed to three years after the rule is promulgated. This is crucial, as many utilities that have started validation of "non-lead" service lines have found out that many of these lines are in fact lead or GRR. For example, D.C. Water found that 20 percent of the lines identified as historic copper (aka "non-lead") were in fact lead.[14] This meant the city needed to replace an estimated additional 8,335 service lines.[15] Similarly, Pittsburgh found during their validation process for a model of LSL locations that the model misidentified LSLs as "non-lead" 22 percent of the time.[16] As discussed further below, the LCRI should allow plenty of time for systems to correct inventory inaccuracies identified through the validation process and systems must do so long before the final deadline for LSLRs to be able to meet the deadline.

Similarly, systems should be required to validate connectors categorized as "unknown" or "never lead" by physical inspection. The LCRI would allow systems to categorize a connector as "never lead" via "an evidence-based record, method, or technique" but does not require physical inspection.[17] As discussed above, reliance solely on these methods results in frequent misidentification of materials. Therefore, the LCRI must require physical inspection so systems at least verify the connector is not *currently* lead. Connectors are discussed further in section 2(D)(i).

ii. Validation

The LCRI includes a requirement that non-lead pipes must be entered into a "validation pool." Then, depending on the pool size, ranging from <1,500 non-lead lines to >50,000 non-lead lines, systems must validate anywhere from 20% of the pool to up to 384 lines, respectively. This is based on "the number of service lines necessary to achieve a 95 percent confidence level"[18] that "the results of this inventory validation are representative of the entire validation pool."[19] We urge EPA to instead use a 99.9% confidence level, or at least a 97.5% confidence level, as typically used in the public health space.[20] Proposed section 141.84(b)(5)(ii)[21] should be

[13] 88 Fed. Reg. at 85,063 (§ 141.84(b)(5)(iv)(A)).
[14] Betanzo & Attal, *Independent Verification and Validation of D.C. Water's Lead Free DC Lead Service Line Removal Plan: Final Report* p. 14 (Sept. 2022) *available at* https://lims.dccouncil.gov/downloads/LIMS/51294/Introduction/RC24-0221-Introduction.pdf?Id=146215.
[15] *Id.*
[16] Pittsburgh Water & Sewer Auth., *Community Lead Response Advisory Meeting, PowerPoint Presentation*, slide 27 (June 4, 2020).
[17] 88 Fed. Reg. at 84,917.
[18] 88 Fed. Reg. at 84,935.
[19] LCRI Technical Support Document, at 24-25, EPA-HW-OW-0801-0709.
[20] *See, e.g.*, EPA Office of Pesticide Programs, *Choosing a Percentile of Acute Dietary Exposure as a Threshold for Regulatory Concern* 4 (2000), *available at* https://www.epa.gov/sites/default/files/2015-07/documents/trac2b054_0.pdf (using the 99.9th percentile of the distribution of estimated acute dietary food exposures for calculating a threshold of concern for a pesticide).
[21] 88 Fed. Reg. at 85,063.

updated to reflect these higher confidence levels and to increase the number of required validations accordingly. EPA should also allow systems to physically verify all service lines in their system and not rely on modeling and validation pools if they can demonstrate they have the resources to physically verify every service line.

EPA must also establish a maximum allowable error rate for validations and prescribe what happens if a water system's inventory of "non-lead" service lines exceeds that error rate. The proposed rule is silent regarding what happens when the inventory validation process reveals a problem. The final rule should address this in ways suggested below. An example of a validation process problem is a system that reports 70,000 non-lead service lines, and therefore must validate only 384 lines, but then finds 15 LSLs or GRRs in the validation pool. Or the system finds 40 LSLs or more. The final rule must address this. We recommend that when a system validates its inventory of non-lead lines, the maximum allowable error rate should be zero or, if EPA concludes a non-zero error rate is necessary, no higher than 0.1% (i.e., at most, one out of every one thousand "non-lead" service lines may be misidentified). Non-lead service lines are required to be identified by "an evidence-based record, method, or technique,"[22] and accordingly should have an extremely low error rate (ideally zero). Service lines must be designated as "lead status unknown" if a water system has "no documented evidence or evidence reliably supporting material categorization."[23] Setting a low allowable error rate would incent systems to use only highly reliable methods to classify service lines as "non-lead" and facilitate compliance with the LCRI's intent that service lines of unknown composition must be investigated. If the validation process shows that a water system's inventory of non-lead service lines exceeds the 0.1% allowable error rate, the system should be required to reassess its entire inventory, including treating previously identified "non-lead" lines as unknown lines, and identifying and addressing any faulty source(s) of information. The system must also be subject to increased oversight and submit to the State and EPA an updated replacement plan and an analysis of why LSLs and/or GRRs were misidentified as non-lead and the steps the system is taking to correct its inventory and replacement pool going forward. The LCRI must set a maximum allowable error rate and consequences for exceeding it because some states prohibit their regulations from being more stringent than federal law, so EPA cannot rely on states to address validation problems absent enforceable standards in the LCRI.

Additionally, only non-lead service lines that have been visually inspected should be exempt from the validation pool. As discussed above, relying on records review alone is insufficient, and so those lines identified as "non-lead" via records review alone must be part of the validation pool.

Finally, if a customer believes their service line has been misidentified in the inventory, the LCRI requires water systems to *offer* to inspect the line within 60 days.[24] This is insufficient and should be changed so that the system must inspect the line within 60 days (if the customer is available).

[22] 88 Fed. Reg. at 85,062 (§ 141.84(a)(3)(iii)).
[23] *Id.* (§ 141.84(a)(3)(iv)).
[24] 88 Fed. Reg. at 85,835 (§ 141.84(b)(4)).

D. Replacements in Systems Reporting Only Non-LSLs

Finally, we support EPA's requirement that systems with an inventory of only non-LSLs (such as those systems that report that mandatory LSLRs have been completed) must fully replace any LSL or GRR within 60 days of discovery.[25] EPA should clarify that this requirement also applies to systems that have a written statement in lieu of the publicly accessible inventory.[26]

E. Responses to EPA's Specific Requests for Comment

EPA has specifically requested comment on four elements of the inventory requirements.

a. In the LCRI, EPA is proposing a threshold of systems serving greater than 50,000 persons to host the inventory and plan online, which is the required threshold under the LCRR. EPA is seeking comment on the size threshold at which systems must host their publicly accessible inventory, inventory summary data, replacement summary data, and service line replacement plan online, and whether it should be lowered relative to the LCRR requirements.

It should be lowered to at most 10,000. This is addressed in section 5.C.ii above.

b. In the LCRI, EPA is proposing a requirement for systems to validate the accuracy of non-lead service lines in their inventory that were categorized using methods other than records review or visual inspection of at least two points along the line. EPA is requesting comment on the number of validations required, the proposed 95 percent confidence level approach used to develop the number of validations required, the criteria for which methods used to categorize non-lead service lines should be included in the validation pool (including whether non-lead lines categorized based on records should be subject to validation), and the seven year timeline for systems on a 10-year replacement deadline to complete the validation requirements.

Non-lead service lines identified through records review should be included in the validation pool. The confidence level used to develop the validation pool should be 99.9 percent, or at least 97.5 percent. The confidence level for actual validation should be 99.9 percent confidence, or at least 97.5 percent confidence level. This is addressed in section 5.C.ii above. The validation requirements should be completed no more than halfway through the mandatory replacement time period.

c. Comment on establishing a deadline for systems to identify all unknown service lines prior to their service line replacement deadlines.

Systems should identify the materials of unknown service lines at least three years prior to the mandatory replacement deadline, or halfway through the time allotted for replacements if an extension has been granted. This is addressed in section 5.C.i above.

[25] 88 Fed. Reg. at 85,063 (§ 141.84(b)(1)(ii)).
[26] 88 Fed. Reg. at 85,062 (§ 141.84 (a)(6)).

d. Comment on a requirement for systems to update their service line replacement plans if there are any changes, such as changes to laws and policies applicable to full service line replacement.

Systems should be required to update their service line replacement plans if there are changes to laws and policies, and these changes should be required to be approved by the primacy agency, to ensure that they are at least as stringent as required by state and EPA requirements. This is further addressed in the section on Replacement Plans.

Section 6: Small System Flexibility

A. The LCRI's Approach to Small System Flexibility

The LCRI would allow systems serving 3,300 people or fewer, as well as non-transient non-community water systems (NTNCWSs) to opt out of the requirement to install or re-optimize optimal corrosion control treatment (OCCT) after a lead action level (LAL) exceedance.[1] This reduces the threshold for small system flexibility from water systems serving 10,000 under the Lead and Copper Rule Revisions (LCRR).[2] With the Lead and Copper Rule Improvements (LCRI), systems serving over 3,300 people must do OCCT. Systems serving fewer than 3,300 can choose between OCCT, point of use (POU) installation and maintenance, or replacement of lead-bearing plumbing.[3] Because lead service line replacement (LSLR) is required for all systems under the proposed LCRI, it is no longer a compliance option.[4]

We applaud EPA for requiring full LSLR for all water systems, regardless of size. There is no safe level of lead exposure, and no foolproof way to ensure that lead does not leach into drinking water from LSLs. There are over 40,000 of these smallest CWSs, and it is vital that people are not placed at additional health risk due to the size of their water system.[5] Subject to our concerns expressed in other sections of these comments regarding exceptions to and extensions of the LSLR requirement, this mandate has the potential to be a huge step forward for public health and make a measurable impact on lead exposure from drinking water in the generations to come.

We would support EPA maintaining small system flexibility to use POU devices (and maintaining the LSLR mandate) for systems serving up to 10,000 people. We echo EPA's concerns that it is "often difficult for small systems to find operators that have the advanced skills to implement and maintain CCT" and to retain operators with advanced CCT skills.[6] Where CCT is done improperly, it does not provide measurable health benefits. For this reason, we believe POU devices and removal of lead bearing plumbing are likely to be more health protective in most systems serving up to 10,000 people.

We support EPA's proposal requiring States to approve the small system flexibility provision before allowing small systems to adopt a treatment technique other than CCT requirements.[7] In situations where States want to implement additional protections beyond the federal rule, they should have the ability to do so. Some States may have the capability to perform CCT for all systems. If they have such technical capacity, they should be able to require CCT for water systems of all sizes. We therefore encourage EPA to retain this provision in the Final Rule.

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[1] 88 Fed. Reg. at 84,945.
[2] 86 Fed. Reg. at 4,220.
[3] *Id*.
[4] *Id*.
[5] *See* 88 Fed. Reg. at 84,941.
[6] 88 Fed. Reg. at 84,945.
[7] *See id.* at 84,946, 85,085 (§ 141.93).

In order to adequately protect the health of people whose drinking water comes from small systems that can choose to not to CCT, however, we urge EPA to strengthen the proposed small system flexibility provision in two ways: 1) EPA should strengthen the requirements for POU devices to include robust public education and training so people using the filters obtain their maximum benefit;[8] and 2) EPA should eliminate the nine-year monitoring waiver because "lead free plumbing" still often contains lead.[9] Waiting nine years between sampling events would be insufficient to protect public health. Additionally, we are concerned that systems serving 3,300 people or fewer may receive as many as six additional years to implement all treatment techniques, including LSLR, if they demonstrate they "need financial assistance." In order to grant an extension, the SDWA requires the State to make a finding that "granting . . . the exemption will not result in an unreasonable risk to health."[10] We urge EPA to state that an extension for LSLR will always result in an unreasonable risk to health for the people who rely on that small system for their drinking water. Finally, as further discussed in the Multiple Exceedances of Lead Action Level section of these comments, we encourage EPA to require all systems, including small systems, to provide POU devices or pitchers to all consumers where the water system has exceeded the LAL. We do not believe that small systems should be required to conduct pipe loop studies or other detailed OCCT demonstrations if they are providing POU devices as discussed here, and agree with EPA's proposal prioritizing LSL and GRR replacement over conducting these studies.[11]

B. EPA must strengthen requirements for point of use devices

We urge the final LCRI to include strong requirements for systems eligible for small system flexibility that choose to install POU devices rather than engaging in CCT or lead bearing plumbing replacement. Along with the current requirements, we urge EPA to provide robust public education and training materials to inform consumers how to properly use the filters. These materials should be provided in multiple languages to reach Limited and No English Proficient (LEP/NEP) people. EPA should also provide videos, again in multiple languages, demonstrating proper use of the filters. Many POU filters that are supposed to attach to a faucet do not fit on many modern faucet models, and even if they should fit, experience in many communities including Flint and Newark indicates that without education, many faucet-mounted filters are incorrectly installed and maintained, negating any public health benefit and potentially causing other unintended problems such as bacterial growth. Water systems should be required to implement a strong outreach and education program to inform their customers about POU device installation, maintenance and use, and of the availability of educational materials when installing and using POU devices. We recommend that water systems partner with local organizations already present in the users' community to ensure thorough delivery of this information in a culturally-informed and language-accessible manner.

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[8] *See* SDWA § 1412(b)(4)(E)(ii), 42 U.S.C. § 399g-1(b)(4)(E)(ii) (requiring detailed water system steps to implement POU technology, discussed below in this section).

[9] *See* SDWA § 1417, 42 U.S.C, 300g-6(d) ("lead free" plumbing can contain up to 0.2 percent lead when used with respect to solder and flux, and up to a weighted average of 0.25 percent lead when used for wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures.)

[10] 88 Fed. Reg. at 84,897.

[11] 88 Fed. Reg. at 84,938.

Flint, Michigan, illustrates the pitfalls of POU devices without proper public education. Many people were unsure how to use their filters and were wary of relying on them for drinking water.[12] A volunteer who went door-to-door speaking with Flint residents about accessing safe drinking water provided examples in U.S. District Court testimony of a woman who ran hot water through her filter, reducing its effectiveness, because she had never been told otherwise.[13] A man who had a faucet that would not take a filter thought he had no alternatives, until the volunteer spoke with him about pitchers.[14] In Flint, "the access to the information about what is there [was] a very informal network of conversations."[15] This lack of formal, thorough public education led to misunderstandings and misinformation, further endangering people's health.

Similarly, EPA noted that a study of POU filter use in Newark found that "67 of the 265 total PUR filters were not viable for use in the study due to improper installation and maintenance by homeowners. It is therefore important that the City implement a strong education and outreach program regarding proper installation and operation of filters to help ensure the efficacy of the core flushing and filtering recommendation."[16]

We recognize the limits EPA cites on CCT expertise for small systems and support these systems having the flexibility to choose POU devices or replacement of lead-bearing plumbing instead of CCT.[17] To make POU devices as effective as possible, however, EPA must ensure they are installed, maintained, and properly used to protect public health. The SDWA requires that if EPA lists POU devices as a treatment technology for small systems,

> Point-of-entry and point-of-use treatment units shall be owned, controlled and maintained by the public water system or by a person under contract with the public water system to ensure proper operation and maintenance and compliance with the maximum contaminant level or treatment technique and equipped with mechanical warnings to ensure that customers are automatically notified of operational problems.[18]

Until full LSLR is achieved, POU devices provide crucial protections for customers still drinking water from LSLs and GRRs. But these protections are only realized with proper implementation, maintenance, and use of the filters. As such, we encourage EPA to provide educational materials in multiple languages and to bolster its requirements for PWSs that choose to use POU devices rather than CCT. These systems should be required to meet strong standards throughout the lifecycle of the POUs, and should also be required to provide public education and outreach to ensure that POU recipients know how to properly use them.

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[12] *See, Concerned Pastors for Social Action*, 217 F. Supp. 3d 960, 974 (E.D. Mich. 2016) (describing witness testimony from crisis responders that as many as 52% of homes visited in Flint had residents who had various problems installing filters); Roper Test., 97:8-99:10, Sep. 14, 2016; Mot. for Prelim. Inj. Tr., 2:16-cv-10277-DML-SDD (E.D. Mich. 2016).
[13] Roper testimony, *supra* note 12,. at 97:16-97:24.
[14] *Id*. at 98:7-98:10.
[15] *Id*. at 98:10-98:12.
[16] *See* EPA, Questions and Answers on Newark Drinking Water, 2019. https://www.epa.gov/sites/default/files/2019-11/documents/newark_qandas_nov_22.2019.pdf
[17] *See* 88 Fed. Reg. at 84,945.
[18] SDWA § 1412(b)(4)(E)(ii), 42 U.S.C. § 399g-1(b)(4)(E)(ii).

C. EPA should require annual monitoring and eliminate the nine-year monitoring waiver

As discussed in the Sampling section 7.C of our comments, we urge EPA to prohibit triennial tap monitoring and tap monitoring every nine years. Under the proposed LCRI, systems serving fewer than 3,300 people could apply for monitoring waivers which would allow them to go as many as nine years between collecting samples. Such a long time between sampling leaves water systems without vital data, and leaves people drinking the water at risk of lead exposure, potentially for years, with no way of knowing of the risk.

For these reasons, we urge EPA to require annual sampling for all systems, including systems serving fewer than 3,300 people. In the alternative, if EPA decides to retain an option for triennial sampling, that should apply to systems serving 3,300 people or fewer. Consumers deserve to be informed about the risks in their water. We strongly urge EPA to eliminate the monitoring waivers for tap monitoring every nine years. The maximum monitoring cycle length for all systems under the LCRI should be no more than three years.

D. EPA should state that any extension of the LSLR mandate would result in an "unreasonable risk to health"

The SDWA allows States to exempt water systems serving 3,300 people or fewer from any treatment technique for two-year periods, up to a maximum of six years. Under the LCRI, full LSLR counts as a treatment technique.[19] This creates the possibility that customers served by small systems will continue to be exposed to dangerous lead levels through their drinking water for as many as sixteen years following their compliance date (without accounting for other exemptions for which these systems may qualify). To grant an exemption, the State must make several findings, including that "granting . . . the exemption will not result in an unreasonable risk to health."[20]

Any extension of the LSLR mandate will result in unreasonable risk to health. As EPA has noted, the health effects of lead include both acute and sub-chronic effects even at low doses, including decreased IQ values, cases of ADHD in children, lower birth weights in children of women of childbearing age, and cases of cardiovascular disease and premature mortality in adults.[21] EPA's Economic Analysis for the LCRI (EA) notes that there is no threshold for many of these adverse effects such as the impacts of low levels of lead exposure on IQ loss, on low birth weight, and other adverse effects. [22] In fact, EPA notes that counterintuitively, often the adverse effects of lead are most pronounced when children at lower levels of exposure have slight increases in their lead exposure. For example, EPA finds,

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[19] *See, e.g.*, 88 Fed. Reg. at 84,933 (referencing "the treatment technique for mandatory service line replacement").
[20] 42 U.S.C. §300g-5(a)(3).
[21] 88 Fed. Reg. at 84,994.
[22] USEPA (2023) Economic Analysis for the Proposed Lead and Copper Rule Improvements, Report, for example at 5-41 (no threshold for IQ loss) & 5-47 (no threshold for low birthweight), https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712

> changes in birth weight associated with a 1 µg/dL [1 microgram of lead per deciliter of blood] change in blood lead vary based on the starting blood lead concentration. For example, the reduction in birth weight from a change in blood lead from 0 to 2 µg/dL is approximately 40 grams and from 8 to 10 µg/dL is approximately 10 grams….[The] strongest estimated effects at the lowest levels of exposure, without a lower threshold of PbB [blood lead] below which there would be no predicted effect on birth weight.[23]

In other words, even very low levels of lead exposure pose significant risks, especially for young children, and slight increases in exposure linked to modest increases in blood lead levels can have serious adverse effects. So any increase in lead exposure from tap water would constitute an unreasonable risk to health.

Further, these risks do not fall on all people equally. As discussed in the Environmental Justice section 15 of these comments, all too often LSLs disproportionately occur in communities of color and low-wealth communities, and blood lead levels are highest among Black and other children of color. A study by NRDC found that SDWA violations "were more likely in counties with racial, ethnic, and language vulnerability and subpar housing and transportation quality."[24] Water systems with violations for 12 consecutive quarters were "40 percent higher in counties with the highest racial, ethnic, and language vulnerability compared to counties with the lowest racial, ethnic, and language vulnerability."[25] And this risk compounds with other risks faced disproportionately by environmental justice communities to create cumulative harm to health.[26] As EPA recognizes, there is no safe level of lead exposure.[27] Any level of exposure, especially ongoing for two years, poses an unreasonable risk to health.

EPA has not demonstrated that such extensions are needed for systems serving 3,300 people or fewer. In fact, EPA cites numerous examples of systems of a variety of sizes achieving full LSLR in less than ten years.[28] It provides examples of small systems replacing all their LSLs in as little as one to two years, and states that only 3.5% of CWSs nationwide are expected to have more than 1,000 LSLs and GRR service lines.[29] Full replacement of all LSLs is crucial to end lead exposure through drinking water for people living in the United States, and the Proposed Rule demonstrates that small systems have been able to achieve full LSLR in as little as one to two years in the past. Given the immense public health impact of lead exposure, we urge EPA to state that systems serving fewer than 3,300 people can achieve LSLR within without extensions, and that an extension of LSLR would cause an unreasonable risk to the health of those whose drinking water comes from these small water systems.

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[23] *Id*, at 5-47, https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712
[24] Kristi Pullen Fedinick, Steve Taylor & Michele Roberts, *Watered Down Justice* (Sep. 2019), 35, *available at* https://www.nrdc.org/sites/default/files/watered-down-justice-report.pdf.
[25] *Id*. at 7.
[26] *Id*. at 8-9.
[27] 88 Fed. Reg. at 84,953.
[28] 88 Fed. Reg. at 84,912.
[29] *Id*.

Section 7: Tap Sampling and Monitoring Lead and Copper in Tap Water

Scientifically robust tap monitoring designed to capture worst case drinking water contamination in the highest risk homes is foundational to the proper implementation of the LCRI.[1] EPA is required under SDWA to use "data collected by accepted methods or best available methods" to ensure science adequately informs risk assessment, management, and communication decisions.[2]

To that end, we support some of EPA's proposed sampling provisions, such as the inclusion of sites with lead or galvanized premise plumbing in Tiers 1-3, taking both first and fifth liter samples for lead at homes with LSLs after water has sat stagnant for a minimum of 6 hours, and using the higher number to calculate the 90th percentile. This is more effective at identifying situations where the water is too corrosive.

At the same time, EPA should strengthen the tap sampling provisions so that the final rule complies with the SDWA mandate that water systems use the best available methods for collecting data.[3] These include removing provisions or waivers for reduced sampling, specifying a protocol for free supplemental customer-requested sampling, and requiring all water systems to conduct appropriate copper sampling, discussed in more detail below. Strengthened provisions will allow systems to promptly detect elevated lead and copper levels and implement appropriate treatment techniques where applicable. Appropriate tap monitoring requirements, paired with prompt public notifications, will enable individual consumers to make well-informed decisions about whether and how to take health-protective action related to lead and copper risks from drinking water.

A. Revised Tier Definitions

We support the proposal to amend the definition for Tier 1 and Tier 2 sites to include sites with premise plumbing made of lead, which can be a substantial lead source.[4] We also support the proposal of adding to Tier 3 sites with galvanized premise plumbing or served by a galvanized service line that was ever downstream of a lead service line or lead connector,[5] but EPA should also require both first- and fifth-liter sampling at all Tier 3 sites, for reasons described in section B.ii below.

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[1] "Targeting monitoring to worst-case conditions will help systems and States evaluate the reductions in contaminant levels achieved through treatment and determine when 'optimal' treatment is being maintained to the degree most protective of public health." 56 Fed. Reg. at 26514 (1991), Maximum Contaminant Level Goals (MCLGs) and National Primary Drinking Water Regulations for Lead and Copper.
[2] 42 U.S.C. § 300g-1(b)(3)(A)(ii).
[3] *Id.*
[4] 88 Fed. Reg. at 85,073 (§ 141.86(a)(4)(i)-(ii)).
[5] 88 Fed. Reg at 85,073 (§ 141.86(a)(4)(iii).

B. Sampling protocol requirements have been improved but should be tightened

i. Wide mouth collection bottles

We agree with the proposal to require wide mouth collection bottles for collecting water samples.[6] Those bottles allow high water flow for sample collection, which is important because low water flow is not representative of typical water use, can decrease the likelihood of dislodging any lead particles that may be present, and is unlikely to capture worst-case lead.[7]

ii. EPA should require both first- and fifth-liter sampling at Tier 3 sites

We are concerned with the proposal to require fifth liter samples only at sites served by a lead service line,[8] because first liter only sampling at Tier 3 sites may fail to capture worst-case lead scenarios. We acknowledge that first liter tap sampling may be able to capture lead sources captured in galvanized premise plumbing or lead particulates that may have been released from the service line and trapped in faucet aerators.[9] However, while collecting first-liter data to characterize lead release and corrosion control effectiveness is important, a study of sampling following the implementation of the Michigan LCR found that taking paired first and fifth liter samples and picking the highest of the two drove the 90th percentile up.[10] Paired samples are more likely to collect water in contact with a lead source than an individual sample, because sample results can vary from first to fifth liter based on the size of the home, the complexity of the premise plumbing system, and the length of the service line.[11] There are many systems that have previously required or commonly used lead connectors,[12] and galvanized service lines may contain lead even after the upstream source of lead has been removed.[13] To detect lead leaching at these Tier 3 sites, EPA should require fifth liter sampling.

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[6] 88 Fed. Reg. at 85,073 (§ 141.86(b)(1)).

[7] *See* 88 Fed. Reg. at 84,929 ("wide-mouth bottles [] allow samples to be taken at full flow to decrease the likelihood that sampling would miss higher lead levels"); Dec. 29, 2017 memorandum "Region 5's Experience in Implementation of the Lead and Copper Rule" from Robert Kaplan, Acting Regional Administrator, to Michael Shapiro, Acting Assistant Administrator at 3. https://engineering.purdue.edu/PlumbingSafety/resources/EPA-Region5-Lead-Memo-2017-12-29.pdf

[8] 88 Fed. Reg. at 85,073 (§ 141.86(b)(1)(ii)).

[9] "Even when LSLs are removed under the Michigan LCR and under the proposed national infrastructure plan, it is likely that some of these smaller-magnitude lead sources will remain in homes. In addition to the fifth-liter data, continuing to collect first-liter data to characterize lead release and corrosion control effectiveness in the household plumbing remains important." Elin Betanzo, Corwin Rhyan, and Mona Hanna-Attisha, Lessons from the first year of compliance sampling under Michigan's revised Lead and Copper Rule and national Lead and Copper Rule implications, AWWA Water Science Vol. 3 Issue 6 (Dec. 2021) at 5. https://awwa.onlinelibrary.wiley.com/doi/full/10.1002/aws2.1261

[10] *Id.*

[11] T. Bradley et al., Estimating impacts of LCRR's fifth-liter sampling and find-and-fix requirements on large water systems, Envt. Sci. Res. Tech. Vol. 10 (2024) at p.241-249, https://pubs.rsc.org/en/content/articlehtml/2023/ew/d3ew00631j.

[12] https://www.epa.gov/system/files/documents/2022-11/508 Compliant - Identifying Lead Service Lines_Oct 2022.pdf; Burgess, Patti Brandt, and Jordan Travis. "Getting the Lead out: Public Water Systems Work to Replace Lead-Containing Service Lines." *Traverse City Record-Eagle*, 14 Nov. 2021, https://www.record-eagle.com/news/local_news/getting-the-lead-out-public-water-systems-work-to-replace-lead-containing-service-lines/article_ecf8a8a8-423e-11ec-926a-e31b015c94f5.html.

[13] 88 Fed. Reg. at 84,918.

EPA "acknowledges that particulate lead is challenging to predict and could occur in any sample volume."[14] At the same time, if a water system will be collecting a sample at a given site, we believe it would be worth the minimal additional effort it would take to collect and analyze an additional sample. We further note that a standard two-sample protocol may prevent confusion between differing tier-based sampling protocols. The first- and fifth-liter data taken together are better at capturing particulate lead release and unpredictable higher lead than the first- or fifth-liter sample alone.[15] We urge EPA to require both first- and fifth- liter samples for tiers 1 through 3.

iii. Maximum stagnation times

We share EPA's concern about over-invalidation of samples with high lead results due to long stagnation times,[16] and encourage the Agency to go further by explicitly prohibiting water systems from invalidating a sample based on stagnation time (as long as it meets the minimum six-hour stagnation time). There is precedent for this practice, as EPA's 2004 LCR guidance states "there is no outer limit on standing time."[17] High lead levels may occur where water has stagnated due to changes in occupancy or due to intentional low water usage,[18] and sampling should reflect this common scenario.

iv. Customer-requested supplemental monitoring

We support EPA's proposal to require water systems that exceed the LAL to offer to sample lead in the tap water of any customer who requests it, and to require such supplemental monitoring at sites served by a lead, GRR, or lead status unknown line to capture first and fifth liter samples.[19] We also support EPA's proposal to require water systems to offer first and fifth liter samples for lead in the tap water of any person served by a lead, GRR, or lead status unknown service line to anyone who requests it, regardless whether there has been an LAL exceedance.[20] We also encourage EPA to require the same for customers at sites that likely have lead connectors as designated in required inventories. EPA should clarify that all supplemental water-system-conducted sampling must be done at no direct cost to the individual homeowner.

v. Other changes to sampling protocols are needed

EPA should make several other changes to sampling protocols to ensure accurate and robust data collection as required by SDWA. EPA should require samples be taken with high water flow (i.e. with tap fully open) and prohibit use of low water flow to fill collection bottles in

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[14] 88 Fed. Reg. at 84,931.
[15] Betanzo et al. AWWA study, *supra* note 9, at 9.
[16] 88 Fed. Reg. at 84931.
[17] *See* November 23, 2004 EPA Memorandum, Lead and Copper Rule – Clarification of Requirements for Collecting Samples and Calculating Compliance, at 4.
https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NEFJ.PDF?Dockey=P100NEFJ.PDF
[18] 88 Fed. Reg. at 84,911.
[19] 88 Fed. Reg. at 85,070 (§ 141.85(c)(1)).
[20] 88 Fed. Reg. at 85,070 (§ 141.85(c)(2)).

order to capture the worst-case lead scenario.[21] EPA should further prohibit any sampling instructions, including for supplemental monitoring, that might artificially lower lead-in-water levels at the time of sampling, including but not limited to pre-stagnation flushing and removal or cleaning of faucet aerators.

We are also concerned about artificial dilution of 90th percentile values and urge EPA to act to prevent this from happening. When a system detects high lead levels in early sample collections we are concerned the system may later flood its data with more samples than required, at sites where low lead levels are expected, in order avoid a lead action level exceedance. Particulate lead can similarly be masked by overcollection of sample data. We encourage EPA to take measures to prevent artificial dilution of 90th percentile values, including requiring, for example, large systems to provide documentation and explanation for expanded sampling in instances where they collect and count towards compliance over 100 samples. **If a water system collects more tap samples than the minimum number required for its size, the system must calculate its 90th percentile by using the minimum required number of samples for its size that have the highest measured lead or copper levels.** For example, a large system with standard monitoring would calculate its 90th percentile for lead using the 100 tap samples with the highest measured lead concentrations and its 90th percentile for copper using the 100 tap samples with the highest measured copper concentrations, regardless of the total number of tap samples collected in the monitoring period and despite likely using a different set of 100 samples for each calculation.

In contrast, we are concerned about the limited amount of data collection required in the LCRI where a system qualifies for reduced monitoring, and encourage EPA to eliminate the reduced number of monitoring sites in Table 2 in section 141.86(d), instead requiring the standard number of sites for lead and copper sampling in Table 1 to Paragraph (c)(1).[22]

EPA seeks comment about the potential inclusion of samples from lower-priority tiers (i.e. Tiers 3-5) that have a higher lead or copper concentration than samples from Tier 1 or 2 sites for calculating the 90th percentile in systems that do not have a sufficient number of samples from Tier 1 and 2 sites. We support this proposal, but again recommend sampling both first and fifth liters at Tier 3 sites, and taking the higher of the two samples, because at sites served by galvanized service lines, a paired sample will more likely detect elevated lead levels than a single sample.

vi. Make sampling data publicly available

The final rule should, in addition to requiring water systems to report all sampling data to EPA as discussed in section 14.A of our comments, require water systems of over 10,000

[21] "On average, Pb concentrations detected in water at high flow without stagnation were at least three to four times higher than in first draw samples collected at low flow with stagnation, demonstrating a new "worst case" lead release scenario, contrary to the original regulatory assumption that stagnant, first draw samples contain the highest lead concentrations." Clark, B., S. Masters, and M. Edwards, Profile Sampling to Characterize Particulate Lead Risks in Potable Water. Environmental Science & Technology 48(12):6836-6843 (2014) https://pubs.acs.org/doi/10.1021/es501342j; *see also* Masters, S., J. Parks, A. Atassi, and M. Edwards., Inherent Variability in Lead and Copper Collected During Standardized Sampling. Environmental Monitoring and Assessment 188(3):177 (2016). https://link.springer.com/article/10.1007/s10661-016-5182-x.

[22] 88 Fed. Reg. at 85,075 (Table 2 to Paragraph (d)(1)); 88 Fed. Reg. at 85,074 (Table 1 to Paragraph (c)(1)).

customers to make all sampling data publicly available online. It should be presented in a format that is understandable to the general public (including mapped results), and should include supplemental monitoring data. Water systems should be required to include a link to the monitoring data in any public notification, public education materials, their CCR, and on the water system website. The monitoring results may be anonymized,[23] but they should still indicate the street or the close proximity from which the sample was taken along with the location's sampling tier. The map would allow the public to understand the general areas of their system where the tests were taken. The monitoring data should also be posted to an accessible web-based portal maintained by EPA, as discussed in section 14.B.

C. EPA must prohibit triennial and nine-year reduced tap monitoring periods

We call on EPA to prohibit extensions that allow triennial tap monitoring and tap monitoring every nine years. For example, water systems that demonstrate a 90th percentile lead level below 0.005 mg/L (5 ppb) and 90th percentile copper level below 0.65 mg/L may reduce to triennial monitoring, while small water systems may apply for monitoring waivers which would allow them to go up to nine years between collecting samples.[24]

Triennial tap monitoring and tap monitoring every nine years must be strictly prohibited because the LCR requires routine tap monitoring to assess the effectiveness of corrosion control treatment and to ensure that any inadvertent rise in lead or copper is promptly detected. Planned and unplanned changes to source water, corrosion control treatment, treatment changes to address other contaminants (such as those triggered by microbial and disinfection byproduct issues or PFAS contamination), altered plant operations, and changes or disruptions in the distribution system (such as caused by construction or altered use, volume, and flow patterns) may have impacts on lead and copper levels at the tap that are highly variable, and not always predictable, especially with regard to lead particulate contamination.[25] These changes can result in lead-in-water elevations even in water systems that meet the LCR lead action level and have corrosion control treatment that is deemed "optimized."[26] Allowing water systems to reduce LCR compliance sampling to once every three or nine years and target a reduced number of an already very small number of required sampling sites can leave water systems and consumers entirely in the dark about active-but-missed or future-and-unexpected lead-in-water contamination. Moreover, it leaves water systems without statistically robust data, which are necessary for understanding the causes of lead-in-water problems and for effectively addressing elevated lead levels. Health risks from sampling delays compound as it takes months or years for treatment techniques to be implemented after a LAL exceedance is detected. For these reasons, we urge EPA to prohibit triennial and every-nine-year sampling for all systems. Tap sampling should occur in all systems at least annually.

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[23] Owner/occupant information redacted, with a code unique to each home making possible comparisons between sampling pools from one sampling round to the next.
[24] 88 Fed. Reg. at 85,075, 85,076 (sections 141.86(d)(2)(ii)-(iii) and 141.86(g)).
[25] 88 Fed. Reg. at 84,911.
[26] *Id.* Note also that, independent of the factors causing elevated lead levels described above, the proposed LCRI could lead to the absurd result of water systems continuing to use ineffective CCT for decades. *See* section 10.E.ii (noting reasons why systems with CCT should have an ongoing duty to re-optimize CCT after action level exceedances).

D. Copper monitoring is not adequately considered in the proposed LCRI

We support EPA's proposal to require water systems to provide consumer notice of an individual's copper sampling results and an explanation of the health effects of copper.[27] However, we are concerned EPA is not considering copper adequately in the current testing regime. Although copper release from plumbing goes down over time, newly-installed copper pipes may release large amounts of dissolved copper.[28] EPA's tap sampling requirements are designed to maximize the chances of detecting lead problems, but EPA must fix the tap sampling requirements to adequately protect against elevated copper levels as well. At elevated levels, copper exposure has been linked to adverse health effects,[29] Copper exposure is a particular risk for people with Wilson's Disease, which is a small but very vulnerable subpopulation (1 in 30,000 people or more have both recessive genes and full-blown Wilsons Disease,[30] and about 1 percent of the population is estimated to be heterozygous for the Wilson's disease recessive gene and may have more limited adverse effects from copper exposure.[31]). These and other susceptible subpopulations who are more vulnerable to copper exposure must be considered under SDWA.[32]

We encourage EPA to require that all systems conduct copper tap sampling from a pool of highest-risk homes. A NDWAC working group recommended separate sampling requirements for lead and copper, due to the lack of overlap between the highest-risk sites for lead and highest-risk sites for copper.[33] Copper sampling should be done from a pool of sites separate from the sites where lead sampling is conducted, and should consist of first-liter samples at a statistically valid sample pool of the highest-risk sites focused on sites that have verified, recently-installed (within the last five years) copper premise plumbing.

We also encourage EPA to require water systems to inform their users when a system exceeds the copper action level. Currently there is no requirement for water systems to inform the public when they have exceeded the copper action level. Most point of use filters that are

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[27] 88 Fed. Reg. at 85070-71 (sections 141.85(d)(1), (d)(3)(ii)).

[28] I. Vargas et al., Copper Corrosion and Biocorrosion Events in Premise Plumbing, Materials, Vol. 10(9) section 6.1 Conceptual Model During Stagnation (2017) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5615691/; M. Edwards et al., Alkalinity, pH, and copper corrosion by-product release (1996) Journal - American Water Works Association, 88: 81-94.https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/j.1551-8833.1996.tb06521.x; Montana State University Extension Water Quality Program, Copper https://waterquality.montana.edu/well-ed/interpreting_results/fs_copper.html.

[29] National Research Council (US) Committee on Copper in Drinking Water. Copper in Drinking Water. Washington (DC): National Academies Press (US); 2000. 5, Health Effects of Excess Copper. Available from: https://www.ncbi.nlm.nih.gov/books/NBK225400/.

[30] *See* ibid, and Yale Medicine, Wilson's Disease, https://www.yalemedicine.org/conditions/wilson-disease#:~:text=Wilson%20disease%20is%20rare.,is%20associated%20with%20Wilson%20disease.

[31] *See* National Academies, *supra* note 29 (1 percent to possibly as high as 2 percent of the population may be heterozygotes carriers of mutations in the Wilson gene. They can have "subclinical abnormalities in copper metabolism at typical levels of dietary copper intake. Therefore, if ingestion of copper is substantially increased, heterozygotes might develop copper-induced liver disease."); See also National Research Council (US) Committee on Copper in Drinking Water. Copper in Drinking Water. Washington (DC): National Academies Press (US); 2000. 4, Disorders of Copper Homeostasis. Available from: https://www.ncbi.nlm.nih.gov/books/NBK225409/

[32] 42 U.S.C. § 300g-1(b)(3)(c)(i)(V) & (ii).

[33] *See* Report of the Lead and Copper Rule Working Group to the National Drinking Water Advisory Council (Aug. 25, 2015) at 37 https://www.epa.gov/sites/default/files/2016-01/documents/ndwaclcrwgfinalreportaug2015.pdf;

certified to remove lead are not certified to remove copper, although there is evidence that they can be effective at doing so.[34] As such, EPA should require that copper exceedance notifications encourage people to take precautions, including but not limited to using point of use filters. Further attention to risks of elevated copper may also serve as an incentive for manufacturers to get their filters certified for copper removal.

E. EPA must address confusing messaging regarding sampling and public education

Public notifications, public education materials, and CCRs should be changed to ensure that consumers do not come away with the impression that a non-detect (or non-quantified) sampling result from a single moment in time is a general guarantee of the safety of the water at their tap. EPA asserts that sampling provisions are meant to help determine the effectiveness of a water system's corrosion control techniques and help determine if water systems are required to conduct LSLR and public education.[35] However, there is some internal inconsistency in the rule, as the proposed language for the public education materials conveys that sampling results are an indication of the safety of an individual household's water, rather than the general effectiveness of corrosion control throughout the system. As described in our November 2023 letter to EPA,[36] EPA's claim that standard water testing will reveal if there is lead in one's water contradicts the science of lead in water, generates vast underestimations of the prevalence of lead-contaminated water, misleads consumers into thinking a non-detect (or non-quantified) lead reading means their water is safe (without recognizing variability in lead levels and the fact that a reading only captures one moment in time), and can cultivate in consumers the erroneous impression that precautionary measures such as lead service line replacement are both a nuisance and financial waste. As such, we encourage EPA to require public notifications, public education materials, and CCRs to make clear that there is potential risk from lead in water even where there is no LAL exceedance or where an individual tap monitoring result does not detect lead or detects relatively low levels of lead. Providing this important information will allow individuals to make informed decisions on how best to mitigate risk.

F. Responses to EPA's requests for comment on tap sampling for lead and copper

1. Comment on the sites included in Tier 3 and whether all of the proposed sites should be included in Tier 3, if additional sites should be included, or if some should be included in a different, lower priority tier, such as Tier 4. Specifically, comment on whether sites served by galvanized service lines or containing galvanized premise plumbing that are identified as ever

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[34] Bosscher, Valerie et al. "POU water filters effectively reduce lead in drinking water: a demonstration field study in flint, Michigan." Journal of environmental science and health. Part A, Toxic/hazardous substances & environmental engineering vol. 54,5 (2019) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7402230/.

[35] 88 Fed. Reg. at 84,880; 84,929 ("Tap sampling under the rule is not intended to represent typical consumption; rather, it is intended to determine the effectiveness of CCT and to determine if actions are needed to reduce lead levels.").

[36] Campaign for Lead Free Water et al. letter to Radhika Fox, Assistant Administrator for Water, EPA (Nov. 20, 2023), https://static1.squarespace.com/static/58a8b106e6f2e14f1955ecab/t/655c0ce837183b5aa5dfc15e/1700531433426/EPA+Communications+re+lead+in+water+-+Coalition+letter+11.20.23F.pdf

being downstream of an LSL or lead connector should be included in the same tier as other sites with a current lead connector (e.g., copper service line downstream of a lead connector).

This is addressed in section A. above.

2. Comment and available data, such as modeling or sampling data, that inform lead corrosion rates over time.

We recognize that EPA asserts sampling provisions are meant to help determine the effectiveness of a water system's corrosion control techniques. This section includes suggestions on how to improve sampling protocol so that data accurately captures worst-case lead scenarios and identifies situations where the water is too corrosive. The CCT section 10.C. points to areas where the LCRI's provisions regarding the conduct of CCT studies should be strengthened, and explains why EPA should create incentives to address the identified shortages of CCT experts.

3. Comment on the applicability of alternate sampling protocols to assess CCT performance, increase customer participation, and other relevant factors.

We encourage EPA to require a standard sampling protocol for all sites, including requiring paired first- and fifth-liter samples at Tiers 1 through 3. *See* section B. above. To increase customer participation, particularly with regard to renters who may not receive CCRs or other written materials sent only to those with water system accounts, we encourage EPA to require annual public outreach activities of all systems and to strengthen the enhanced public outreach requirements for systems with a LAL exceedance or that fail to meet the required SLR rate. *See* Public Education and Outreach section 8.E.

4. Comment on the proposed updated definition of wide-mouth bottles that is "bottles that are one liter in volume with a mouth, whose outer diameter measures at least 55 mm wide," and specifically on the availability of qualifying bottles.

We agree with the proposed updated definition. This is addressed in section B.ii. above.

5. Comment and any relevant data on the number and tiering of samples used to calculate the 90th percentile lead and/or copper levels for systems with LSLs for purposes of assessing CCT efficacy. Specifically, whether samples from non-LSL sites that have higher lead concentrations than samples from LSL sites should be included and whether these higher values should replace lower values from LSL sites in the 90th percentile calculation.

If a water system collects more tap samples than the minimum number required for its size, the system must calculate its 90th percentile by using the minimum required number of samples for its size that have the highest measured lead or copper levels. This is addressed in further detail in section B.v. above. Also, as discussed in section D. above, the copper sampling pool should target sites with the highest copper risks—homes with new copper premise plumbing—rather than piggybacking on the lead sampling pool sites.

6. Comment on whether State authority to specify sampling locations when a system is conducting reduced monitoring should apply regardless of the number of taps meeting sample site criteria.

This is not addressed.

Section 8: Public Education and Outreach, Public Notification, and CCRs

Providing individuals with complete and accurate information about their drinking water enables the success of the LCRI, as people aware of contaminant risks in their water better understand the need for treatment techniques and are more likely to engage in preventive action. The proposed LCRI includes some improvements over the LCRR, but needs significant changes to make the public education treatment technique accurate and effective, and in compliance with SDWA's mandate to "prevent known or anticipated adverse effects on the health of persons to the extent feasible."[1]

Public education, as EPA notes, is a "cornerstone" treatment technique that is supposed to advance the public health protective goals of SDWA and the LCR by covering any ground that the other three treatment techniques leave open.[2] If communities receive robust, complete, and accurate public education, consumers can be better equipped to prevent adverse health effects from exposure to lead in their drinking water. Consumers provided with complete information about the risks of lead in drinking water can immediately take preventive action such as installing point-of-use filters.[3] The instantaneous health-protective benefit of such actions stands in stark contrast to the multiple years it takes for water systems to optimize corrosion control treatment or complete lead service line replacements.

There are many circumstances where public education is the sole or principal treatment technique protecting public health. For example, if a water system without lead service lines and without corrosion control treatment has an action level exceedance, public education and outreach is the only treatment technique proposed in the LCRI to protect public health during the multi-year period when the system is studying and implementing corrosion control and source water treatments. Or, for a similar water system with existing source water and corrosion control treatments that has an action level exceedance, public education and outreach is the principal treatment technique to protect public health while the system reoptimizes the other treatment techniques.[4] Similarly, public education is the only treatment technique EPA proposes to protect children at school or day care.

It is imperative that public notice, CCRs, and public education provisions provide people with complete, accurate, and timely information to decide for themselves what risks and precautions they want to take. We support the improvements to the mandatory lead health effects language in public notification and public education materials, the expansion of options for compliance with public outreach requirements, the requirement to offer to sample taps for lead upon request from any customer with a lead, GRR, or unknown service line, and the requirement for delivery of lead and copper tap sampling results within 3 days.

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[1] 42 U.S.C. § 300g-1(b)(7)(A).
[2] 88 Fed. Reg. at 84,946.
[3] We note that some consumers may lack the time or resources to purchase their own filters and further highlight the need for utilities to provide these free of charge in particular circumstances, as discussed in section I.A below.
[4] As discussed in the action level section of our comments, we strongly urge EPA to at a minimum require water systems to provide free POU devices, along with outreach and education, to all households served by systems that have an action level exceedance.

However, to satisfy SDWA's mandate to "prevent known or anticipated adverse effects on the health of persons to the extent feasible,"[5] additional changes are needed to make public education and notification materials more accurate and outreach more effective. It is certainly feasible for water systems to provide accurate information to the public. CCRs, public notifications, and public education materials should include language that is clear about the possibility of lead exposure from drinking water even when the system as a whole is in compliance, and ensure individuals understand there are steps they can take immediately to protect themselves.[6] We therefore suggest EPA clarify or expand certain requirements, including modifying the language in public education materials and right-to-know reports encouraging filter use, bolstering the public outreach requirements, and ensuring water systems provide filters at no direct cost to consumers and clarifying public education materials to reflect that requirement, discussed in more detail below.

A. Public education and public notification materials must include clear, accurate, and robust information regarding risks of lead exposure at individual taps

i. Content changes needed for public education and public notification materials

We support several of EPA's proposals to improve the contents of public education and public notification materials, but some changes should be made to strengthen them. For example, we support including the requirements to include information about replacing GRR service lines in addition to LSLs, how to access the service line inventory, how a consumer may check their service line for lead, and how consumers can notify the water system if they think their service line material classification is incorrect.[7] We generally support EPA's changes to the lead health effects language which make clear that there is no safe level of lead in drinking water and that there are numerous adverse effects linked to lead exposure for children as well as adults.[8] We recommend, however, that the mandatory language in proposed section 141.85(a)(1)(ii) go beyond stating, "[c]ontact your health care provider for more information about your risks." It should also include a weblink to an EPA summary of health effects, and the EPA drinking water hotline number to provide consumers more information. Most health care professionals, to whom the proposed language directs consumers, have a relatively low amount of knowledge of the

[5] 42 U.S.C. § 300g-1(b)(7)(A).

[6] We note we and others have discussed many of these changes in previous correspondence with EPA and incorporate their recommendations and observations here. See, e.g., Campaign for Lead Free Water et al. letter to Radhika Fox, Assistant Administrator for Water, EPA (Nov. 20, 2023), https://static1.squarespace.com/static/58a8b106e6f2e14f1955ecab/t/655c0ce837183b5aa5dfc15e/1700531433426/EPA+Communications+re+lead+in+water+-+Coalition+letter+11.20.23F.pdf; Natural Resources Defense Council et al., Comments on the Proposed Consumer Confidence Report Rule Revisions (May 22, 2023), https://www.regulations.gov/comment/EPA-HQ-OW-2022-0260-0113; Campaign for Lead Free Water, Comments on EPA's Proposed "National Primary Drinking Water Regulations: Consumer Confidence Report Rule Revisions" (May 22, 2023), https://www.regulations.gov/comment/EPA-HQ-OW-2022-0260-0080.;

[7] 88 Fed. Reg. at 85,069 (§ 141.85(a)(1)(vi)).

[8] 88 Fed. Reg. at 85,069 (§ 141.85(a)(1)(ii)).

impacts of drinking water contaminants,[9] and this is particularly likely to be true about low-level lead exposure typical of drinking water.

We support EPA's proposal to include an explanation that using ANSI-accredited filters reduces lead levels in drinking water.[10] However, we strongly encourage EPA to edit proposed section 141.85(a)(iii)(B) to explain that lead may be found in water even when there is no LAL exceedance, and lead levels may be temporarily elevated after a replacement or disturbance. This section should explain that because lead-bearing premise plumbing is ubiquitous, lead levels in drinking water can vary seasonally and over time, and therefore sampling results at a single point of time, or a system's overall compliance with the LCRI, may not provide the full picture of lead risk at an individual tap. Providing this information to consumers can serve as a catalyst for consumers to take health-protective action, especially for those receiving a notification of tap sampling results pursuant to section 141.85(d)(3), discussed in more detail below. EPA acknowledges that consumers should be aware of the risks from lead exposure regardless of lead levels in the system and ways to reduce exposure to lead.[11]

While it is an improvement that the proposed health effects language explicitly states there is no safe level of lead in water, the fact that the lead action level is not zero means that even tap sample data indicating lead levels below the action level at a large number of locations throughout a PWS can obscure a situation in which some customers are being exposed to unacceptably high levels of lead. Even with the most effective CCT possible and an ongoing LSL replacement program, there are ordinary conditions that can accelerate lead release (e.g., the presence of lead-bearing solder and lead-containing premise plumbing, which is very common;[12] increases in water temperature; physical disturbances of LSLs or GRR lines caused by water- and non-water related utility work;[13] or prolonged periods of no or low water usage[14] resulting from lack of or changing occupancy). Washington, DC, Milwaukee, WI, and Portland, OR, are prominent examples of large water systems that meet the LAL based on 90th percentile values,

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[9] *See, e.g.*, ATSDR, What Role Do Primary Health Care Providers Have in Detecting, Treating, and Preventing Disease Resulting from Toxic Exposures? https://www.atsdr.cdc.gov/csem/exposure-history/Health-Care-Providers-Role.htm ("A recent report about U.S. medical schools disclosed that graduating students received inadequate instruction in environmental health [citation omitted]. A recent national online survey of American Congress of Obstetricians and Gynecologists (ACOG) fellows showed that among 2,514 survey responses, 50% reported that they rarely take an environmental health history; less than 20% reported routinely asking about environmental exposures commonly found in pregnant women in the United States; and only 1 in 15 reported any training on the topic. [citation omitted] Practicing primary care physicians report the need for environmental medicine education to better recognize, diagnose, and treat patients in their clinical practice with environmental related illness [citation omitted].") One recent example is a survey of Minnesota physicians, which found 43 percent were uncomfortable discussing drinking water quality from wells and only one third said they had any training on the issue. Casey Johnshoy et al, 2023, "Safe Water from the Kitchen Faucet: A Family Physician's Role." Minnesota Family Physician Magazine, Spring 2023, at 22. https://bluetoad.com/publication/?m=44741&i=788465&p=1&ver=html5.

[10] 88 Fed. Reg. at 85,068 (§ 141.85(a)(1)(iv)(A)).

[11] 88 Fed. Reg. at 84,952.

[12] Adele Peters, Yes, we should remove lead pipes, but clean drinking water is still no guarantee (fastcompany.com) (Dec. 12, 2023) FASTCOMPANY, https://www.fastcompany.com/90991083/yes-we-should-remove-lead-pipes-but-ensuring-clean-drinking-water-requires-more-work.

[13] In most jurisdictions this work occurs daily and can dislodge and release lead particles. Del Toral, M. A. et al. 2013. Detection and Evaluation of Elevated Lead Release from Service Lines: A Field Study. ES&T 47(16): 9300–07, https://www.epa.gov/sites/default/files/2015-10/documents/lead-service-lines-study-20130723.pdf.

[14] Arnold, R., and M. Edwards. 2012. Potential Reversal and the Effects of Flow Pattern on Galvanic Corrosion of Lead. ES&T 46(20):10941-47.

yet have extensive sampling data showing widespread measurable lead in tap samples, including individual samples with lead levels substantially higher than the lead action level.[15]

It is therefore also important that public notification and education materials recommend, under section 141.85(a)(iv)(A), that all consumers served by lead, GRR, or unknown service lines, particularly those who are at elevated risk such as pregnant people, young children, and adults with high blood pressure or cardiovascular disease, use a filter certified to reduce lead and continue to do so for at least half a year after the line has been replaced.[16] Materials under proposed section 141.85(a)(iv)(A) should additionally recommend those who have lead-containing premise plumbing or fixtures use a filter until and unless the plumbing is removed. EPA raises a concern that such a recommendation may cause a reduction in confidence in tap water, however, there is evidence that providing filters and explaining their efficacy increases confidence in and use of tap water.[17] As discussed at length in our earlier comments on the Consumer Confidence Report Rule proposal,[18] which we incorporate here by reference, EPA should be careful to ensure that water utilities do not represent that meeting the LAL systemwide, or having a single non-detect tap sample result, is a guarantee that a particular individual tap is "safe." This is especially important because many homes that have lead-containing premise plumbing will still face lead-in-water risks even after all lead service lines have been replaced.

EPA is additionally proposing to "require water systems with multiple action level exceedances to make filters certified to reduce lead and replacement cartridges, along with instructions for their use, available to all consumers."[19] As discussed in more detail in Section 4.C., to reduce barriers to access based on cost, we strongly encourage EPA to require water systems to pay for and provide these filters and replacement cartridges after any single LAL exceedance. Proposed section 141.85(a)(1)(iv)(A) should be amended to require, where applicable, public education materials to explain that filters and replacement cartridges will be provided at no cost to the consumer, along with information about how consumers will and/or can obtain filters. EPA should make clear that "all consumers" may receive these filters, including renters who have landlords who pay water bills and therefore may not have a customer account with the water system.

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[15] *See* Campaign for Lead Free Water (June 24, 2021), The EPA Lead and Copper Rule is an Optical Illusion — campaign for lead free water, https://www.campaignforleadfreewater.org/our-blog/2021/6/22/the-epa-lead-and-copper-rule-lcr-as-optical-illusion; Milwaukee's LCR compliance sampling data from 2023, 2020, and 2017 (highest lead reading was 130 ppb in two different sampling rounds); https://www.oregonlive.com/portland/2016/04/lead_in_the_water_why_portland.html

[16] "The weight of evidence indicates that PLSLR often causes tap water Pb levels to significantly increase for a period of days to weeks, or even several months." 2011 SAB evaluation at page 2, https://www.epa.gov/sites/default/files/2015-09/documents/sab_evaluation_partial_lead_service_lines_epa-sab-11-015.pdf.

[17] Claudia Santillán-Vázquez et al. (2022), How providing a low-cost water filter pitcher led Latino parents to reduce sugar-sweetened beverages and increase their water intake: explanatory qualitative results from the Water Up!@Home intervention trial, https://pubmed.ncbi.nlm.nih.gov/35983682/.

[18] Comment submitted by Natural Resources Defense Council (NRDC) et al., May 22, 2023, https://www.regulations.gov/comment/EPA-HQ-OW-2022-0260-0113.

[19] 88 Fed. Reg. at 84,955.

We note also that installation and maintenance can be a large barrier to the effective use of filters.[20] To ensure public health is adequately protected by filters, proposed section 141.85(a)(1)(iv) should be amended to require water systems to provide instructional videos, or a link to EPA-provided videos, that instruct users how to properly install, use and maintain filters and change filter cartridges.

ii. Translation assistance

We support EPA's proposal to provide templates of public education materials in multiple languages to assist water systems, which we believe will greatly aid water systems in completing the requirement to provide public education materials in appropriate languages under proposed section 141.85(b)(1).[21] EPA is seeking information and data about when a system provides translated materials, what resources are used to translate materials (e.g., State resources, community organizations), and what barriers water systems may face in providing accurate translated materials. EPA is also requesting comment on whether to require that States, as a condition of primacy for the LCRI, provide translation support if water systems, not independently subject to Title VI, are unable to do so.[22] We note that many communities will have no way to find out if their water is safe if public education materials are only in English, and that it is important for these translated materials to have quality control (i.e., for a proficient translator to do the translation, rather than feeding materials through automated computer translations). The Limited English Proficient (LEP) access requirements under Title VI apply to all states receiving federal funds.[23] Recipients of such funds must "take reasonable steps to ensure meaningful access to their programs and activities by LEP persons,"[24] and must "provide individuals with disabilities an equal opportunity to participate"[25] in such programs. Compliance with this requirement can be proven by:

> (a) [providing] "written translations of vital documents for each eligible LEP language group that constitutes five percent or includes 1,000 members, whichever is less, of the population of persons eligible to be served or likely to be affected or encountered. Translation of other documents, if needed, can be provided orally; or
>
> (b) If there are fewer than 50 persons in a language group that reaches the five percent trigger in (a), the recipient does not translate vital written materials but provides written

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[20] Pls. Post-Hearing Brief in support of Mot. For a Prelim. Injunction, Concerned Pastors for Social Action v. Khouri (E.D. Mich 16-cv-10277, Sept. 2016) at 8-10 https://www.nrdc.org/sites/default/files/plaintiff-post-hearing-brief-iso-prelim-inj-flint-20160922.pdf; *see also* Jason Hanna, Flint water crisis: Deliver bottles to homes, judge rules, CNN (Nov. 11, 2016) https://www.cnn.com/2016/11/11/health/michigan-flint-water-crisis/index.html ("a filter's presence in a home doesn't necessarily mean it's working. The leader of a nonprofit group that helps residents install them testified that the process is difficult, and that as many as 52% of the more than 400 homes that the group visited has some type of problem with the filters.")

[21] 88 Fed. Reg. at 84,954.

[22] *Id.*

[23] 42 U.S.C. §§ 2000d, 2000d–1.

[24] Guidance to Environmental Protection Agency Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons, 69 Fed. Reg. 35,062, 35,063 (June 25, 2004).

[25] *Id.*

notice in the primary language of the LEP language group of the right to receive competent oral interpretation of those written materials, free of cost."[26]

As such, EPA should require states to provide translation assistance to water systems.

B. Notification of individual tap monitoring results

i. Speed and manner of notification

We are encouraged by the proposed requirement that water systems "provide the consumer notice as soon as practicable but no later than three calendar days after the water system learns of [lead] tap monitoring results," regardless of whether the results exceed the LAL.[27] However, we encourage EPA to adopt a 24-hour notification requirement. EPA notes that many water systems can issue notices within even shorter timeframes than three days,[28] and that water systems have been complying with the Tier 1 24-hour notice requirement for situations besides a lead action level exceedance since 2002.[29] If water systems are capable of complying with a statutory requirement for 24-hour notification of action level exceedances, then they are also capable of complying with a requirement to notify customers of all other sampling results within the same time frame, with accommodations for staffing shortages or holidays. Even short-term lead action level exceedances and lead in water exposures have the potential to have serious adverse effects on human health,[30] so SDWA requires that notifications be made at the fastest speed feasible in order to avoid related health impacts.

In addition to supporting the proposal to require consumer notices of lead tap sampling results to be delivered "as soon as practicable," we also support the proposal that water systems that choose to deliver notices of testing results by phone must follow up with a written notice within 3 days.[31]

ii. Supplemental customer-initiated tap monitoring

We support the proposal to require systems that exceed the LAL to offer tap monitoring to all customers who request it,[32] and to offer tap monitoring for all customers with LSLs, GRRs, or unknown service lines who request it regardless of whether there has been an LAL exceedance.[33] It must be clarified, however, that this sampling should be done at no charge to the individual consumer; it is not the consumer's fault the system is exceeding an action level, and they should not be required to pay to see whether their tap water has high lead levels. We also support the proposal to require notification of supplemental monitoring results "as soon as

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[26] *Id.* at 35,610.
[27] 88 Fed. Reg. at 85,071 (§ 141.85(d)(2)).
[28] 88 Fed. Reg. at 84,949 ("water systems have a long history of demonstrated ability to provide consumer notices within an even shorter time frame of 24 hours in other contexts").
[29] 88 Fed. Reg. at 84,965.
[30] 88 Fed. Red. 84,964-65 (citing 86 Fed. Reg. 4239-30).
[31] 88 Fed. Reg. at 85,071. Note the proposed section 141.85(d)(2) says 3 days; however, the preamble appears to include a typo which lists 30 days, 88 Fed. Reg. at 84,949.
[32] 88 Fed. Reg. at 85,070 (§ 141.85(c)(1))
[33] 88 Fed. Reg. at 85,070 (§ 141.85(c)(2))

practicable," in accordance with the requirements of paragraphs 141.85(d)(2)–(4).[34] These supplemental monitoring and notification provisions will provide people with more information about the quality of their drinking water and allow them to better assess potential health-protective precautions that are right for them.

iii. Content requirements

As described above, while we support some of the changes to the mandatory health effects language proposed in paragraph (a), some additional information should be required for public notifications. Proposed section 141.85(d)(3) should require that tap monitoring result notifications state that filters may be helpful even in non-detect cases because one-time sampling does not provide complete information about the quality of one's water. Lead levels can vary greatly depending on location within a water system and over time.[35] Consumers should not receive the mistaken impression that a single non-detect result (much less a result with detectable lead that is below the action level) is an absolute assurance of safety at an individual tap.

C. Other public notification requirements

i. Notification of service line material

We support EPA's proposal to require the same notification content for both LSLs and GRR service lines, and to require service line material notices to include content including a statement about the proposed requirement for offering to sample the tap of any customer with an LSL, GRR, or unknown service line.[36] We encourage EPA to also require systems to notify consumers if they are served by a known lead connector, which are common in some jurisdictions. We also support the proposed requirement for water systems to provide this notification no later than 30 days of completion of the baseline inventory and to repeat the notification within 30 days of the deadline for each annual update to the service line inventory until there is no longer a lead, GRR, or lead status unknown service connection.[37] We appreciate that EPA is considering additional public education requirements to further encourage swift service line replacement, and to that end, we encourage EPA to increase the frequency of notification of service line materials from annual to once every six months for water systems that have lead, GRR, or unknown service lines five years after the compliance date.[38]

ii. Notification of a service line disturbance

We support the proposal to add disturbances due to LSL inventorying efforts to the list of disturbances requiring notification.[39] We support the proposal to require water systems to

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[34] 88 Fed. Reg. 85,071 (§ 141.85(c)(3)).
[35] 88 Fed. Reg. 84,906 (emphasizing that levels of lead in tap water are highly variable "due to many factors including the amount of lead and copper in the resident's plumbing or in the PWS's distribution system . . . temperature, age of plumbing components, chemical and physical characteristics of distributed water, and the length of time water is in contact with those materials") (quoting 56 Fed. Reg. 26,514, 26,473 (1991), Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper
[36] 88 Fed. Reg. at 85,071 (§ 141.85(e)(1), (3))
[37] 88 Fed. Reg. at 85,071 (§ 141.85(e)(2)).
[38] 88 Fed Reg. at 85,037 (public education request for comment #8).
[39] 88 Fed, Reg. at 84,948, 85,071 (§ 141.85(g)(1)).

provide persons at the service connection with ANSI-certified pitcher filters or point of use devices where a disturbance occurs as a result of the replacement of an inline water meter, water meter setter, or connector, in addition to the requirement to provide certified filters following partial or full service line replacements as required under section 141.84(h)(iii).[40] We also support the requirement in proposed section 141.85(g)(ii)[41] to provide instructions for "a flushing procedure to remove particulate lead" in specified circumstances, however, this provision should be broadened to require "a flushing and aerator-cleaning procedure to remove particulate lead" because lead particles can collect in faucet aerators and flushing will be ineffective if aerators are not properly cleaned as part of the procedure.

D. Copper action level exceedance public notifications

The LCRI should include a provision for public notification after a copper action level exceedance. Pursuant to SDWA's mandate for treatment techniques to "prevent known or anticipated adverse effects on the health of persons to the extent feasible,"[42] the public education provisions should reflect the need to publicly share information regarding elevated copper levels. There are vulnerable subgroups adversely affected by copper AL exceedances such as people with Wilson's Disease. Consumers need to be notified of elevated copper levels so they may take precautions to avoid excessive exposure. In addition to improving monitoring requirements for copper (described in sampling section 7.D), EPA should provide for public notification and education for copper.

E. Public outreach requirements should be expanded so that activities are required of all water systems and enhanced for systems with action level exceedances

Outreach requirements under the public education provisions must be strengthened. We appreciate the streamlined nature of EPA's proposal to require public education to be repeated with the same frequency after every lead action level exceedance, and to allow systems to combine required outreach activities to meet some of the proposed public education requirements.[43] However, the list of compliant outreach activities should be clarified and the number of required outreach activities increased. We further encourage EPA to require all water systems to conduct public outreach activities because any home can have highly dangerous lead levels without there being a LAL exceedance. More detailed comments on the public outreach requirements are below.[44]

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[40] 88 Fed. Reg. at 85,071 (§ 141.85(g)(2)).
[41] 88 Fed. Reg. at 85,071.
[42] 42 U.S.C. § 300g-1(b)(7)(A).
[43] 88 Fed. Reg. at 84,947.
[44] While our comments demonstrate that all water systems should have baseline public education requirements independent of any triggering event, as a general principle we also agree that enhanced public education requirements should be triggered by tap sampling results that exceed a specified threshold. In our CCT section, we have proposed alternative triggers for CCT requirements that are feasible and would be more health protective. We agree that using the same trigger levels for CCT and for enhanced public education is logical and would help to simplify the rule, and we recommend that the trigger be 5 ppb. However, if EPA is to continue tying enhanced public education requirements to an LAL of 10 ppb, we still believe the rule can be strengthened; to that end, we have included suggestions in these comments.

i. Outreach activities required of systems with a LAL exceedance

We agree with EPA's proposal to require systems to conduct public education activities after every tap sampling period in which a LAL exceedance occurred, regardless of whether the LAL exceedance was consecutive.[45] If EPA rejects our proposal to require public education activities independent of a LAL exceedance (see below) and retains a triggering condition for discontinuing public education activities, we agree with EPA's proposal to clarify that the calculated 90th percentile level at or below the lead action level must be based on the minimum number of required samples under section 141.86 for the system to be able to discontinue public education.[46]

It is imperative that systems quickly conduct public education activities under section 141.85(b)(2) after an LAL exceedance is detected. We believe that it will be feasible for systems to conduct the public education activities within a shorter period of time than the 60 days proposed.[47] Systems can and should conduct these activities within 30 days. EPA should also shorten its proposal for allowing States to grant deadline extensions to no later than 90 days, rather than 180 days,[48] after the end of the tap sampling period in which the LAL exceedance occurred. We encourage EPA to provide template/sample public education materials which may be modified by individual jurisdictions, to help expedite the process of developing public education materials.

We also support the requirement for additional outreach by systems that have three LAL exceedances over a rolling five-year period.[49]

However, some of the listed options under section 141.85(j)(4) are weak in isolation (e.g. holding a town hall meeting with no requirements for publicity, timing, or attendance).[50] EPA should require that water systems, including small systems, utilize methods noted to be most likely to elicit responses.

EPA notes that "face-to-face contact is particularly effective for engaging smaller communities," and also notes that "direct customer and/or consumer contact and partnering with community-based organizations [are] particularly effective methods of communicating about LSLR."[51] EPA's SALT risk communication framework says to make risk communication actionable, the agency must "1) [] put the risk into context and 2) [] provide meaningful and achievable action steps that can help reduce stress and make risk-reducing behavior change more possible."[52] EPA fails to effectively communicate risk and enable risk-reducing behavior if it

[45] 88 Fed. Reg. at 85,069 (§ 141.85(b)(2)).
[46] 88 Fed. Reg. at 84,950, 85,073 (§ 141.85(b)(6)). In addition, as described further in sampling section 7.B.5, when a system finds that its early samples during the compliance period would trigger an action level exceedance, it should not be allowed to start additional sampling in an effort to dilute the results of the early sampling.
[47] 88 Fed. Reg. at 84,951.
[48] 88 Fed. Reg. at 84,951; 85,070 (§ 141.85(b)(7)(iii)).
[49] 88 Red. Reg. at 85,072 (§ 141.85(j)).
[50] 88 Fed. Reg. at 85,072-73 (§ 141.85(j)(4)).
[51] 88 Fed. Reg. at 84,948. *See also* LSLR Collaborative, Effectiveness of Anticipated Communication Options, https://www.lslr-collaborative.org/effectiveness-of-anticipated-communications-options.html.
[52] EPA, The SALT Framework, https://www.epa.gov/risk-communication/salt-framework.

does not require maximally effective outreach techniques such as face-to-face communication and multiple channels of outreach.[53]

Therefore, under section 141.85(j), EPA should require water systems that have multiple LAL exceedances to conduct, in addition to the baseline requirements for single LAL exceedances, at least two additional outreach activities: at least one involving face-to-face contact (including options such as door to door canvassing or working with a community group at a well-publicized event), and one additional activity from the list. We also recommend that the town hall meeting and community event compliance options be strengthened with additional requirements for publicity, scheduling at a time and place outside of standard work hours and most likely to be conducive to attendance, and providing both in-person and virtual attendance options.

Compliance options should similarly be strengthened for the additional outreach activities required of systems with three LAL exceedances in a rolling five-year period to require at least two additional outreach activities, including at least one that involves face-to-face contact.

ii. Required outreach activities for systems failing to meet the SLR replacement rate

We support EPA's proposal to require additional outreach activities for systems that fail to meet the mandatory SLR rate to conduct annual public education, as well as the expanded range of options for compliance.[54]

Compliance options should similarly be strengthened for the additional outreach activities required of systems that fail to meet the mandatory SLR rate to require at least two additional outreach activities, including at least one that involves face-to-face contact.

iii. Outreach activities must prioritize environmental justice communities

Outreach activities must account for inequitably distributed health risks associated with LSLs. We note that an EPA case study found that block groups with LSLs often have higher percentages of low-income residents, renters who may have unresponsive landlords, and people of color compared to block groups without LSLs, and that the top quartile of block groups with the highest number of LSLs had a notably larger percentage of Black residents than the service area as a whole.[55] An analysis of nationwide SDWA violations from 2016 to 2019 found that as people of color, low-income people, non-native English speakers, and crowded conditions and/or sparse access to transportation increased, the rate of drinking water violations also increased.[56] SDWA requires that treatment techniques such as public education must account for the greater risks faced by these subpopulations "identified as likely to be at greater risk of adverse health

[53] We note also that multiple channels of outreach may be needed to effectively communicate lead-in-water risks for renters, because written education materials simply mailed to or targeted to landlords who pay water bills at their respective properties may fail to reach renters who lack an account with a water system.
[54] 88 Fed. Reg. at 85,072 (§ 141.85(h)).
[55] 88 Fed. Reg. at 85,043–44.
[56] NRDC, Environmental Justice Health Alliance for Chemical Policy Reform, & Coming Clean, *Watered Down Justice*, at 4 (2020), https://www.nrdc.org/sites/default/files/watered-down-justice-report.pdf.

effects due to exposure to contaminants in drinking water than the general population."[57] Just as EPA is proposing to require systems to prioritize service line replacements for communities disproportionately impacted by lead and to create a communication strategy to inform both residential and non-residential customers and consumers about the service line replacement program,[58] EPA should similarly require systems conducting outreach activities to prioritize environmental justice communities and ensure public education activities effectively engage those most at risk of exposure to lead in drinking water.

iv. EPA should require annual outreach activities of all systems, independent of 90th percentile performance

Requiring public education only when there is a LAL exceedance is not sufficient to protect health "to the extent feasible,"[59] and EPA should therefore make the public outreach requirement more robust. Any home could have highly dangerous lead levels without there being an LAL exceedance. EPA and water systems run the risk that critical information about lead in water may fail to reach large swathes of populations when public education is not required. As described in the sampling comments section 7.C, under the proposed LCRI some systems with reduced monitoring waivers may go three to nine years without sampling. In these cases, the only information consumers may receive about potential lead in water risks is from unidirectional written communications such as CCRs. Relying solely on CCRs for public education and outreach is inadequate because they are sent infrequently, may be sent only to the water account holder and not to all tenants, and are likely to be read only by consumers who are already sensitized to the problem of lead in water. Several studies have documented the severe limitations of CCRs, while others have concluded that face-to-face communication as well as regular outreach and outreach through local grassroots organizations are far more successful at delivering desired messaging than written materials.[60] The public education treatment technique will not protect health "to the extent feasible" if it only applies to systems that have an LAL exceedance or that delay service line replacements.

As such, the LCRI should require all systems with lead service lines or connectors to conduct public education outreach activities at least annually. This can be achieved by requiring

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[57] 42 U.S.C. § 300g-1(b)(3)(c)(i)(V) & (ii).
[58] 88 Fed. Reg. at 85,064 (§ 141.84(c)(iii),(v), (vii)); this is discussed further in the Replacement Plan section of our comments.
[59] 42 U.S.C. § 300g-1(b)(7)(A).
[60] *See* Griffin and Dunwoody, The relation of communication to risk judgment and preventive behavior related to lead in tap water, *Health Communication* (2000), http://www.ncbi.nlm.nih.gov/pubmed/10938908; Meyer-Emerick, Are we answering the right questions? Improving CCR communication, AWWA Journal (2004), https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/j.1551-8833.2004.tb10682.x;
AWWA, Strategies to Obtain Customer Acceptance of Complete Lead Service Line Replacement (2005), https://www.awwa.org/Portals/0/AWWA/Government/StrategiesforLSLs.pdf?ver=2013-03-29-132027-193; Blette, Drinking water public right-to-know requirements in the United States, J. Water Health (2008), http://www.ncbi.nlm.nih.gov/pubmed/18401128; Roy et al., An evaluation of the readability of drinking water quality reports: a national assessment, J. Water Health (2015), http://www.ncbi.nlm.nih.gov/pubmed/26322750; EPA,
Recommendations for Improving the Washington DC Water and Sewer Authority Lead in Drinking Water Public Education Program (2004), http://archive.epa.gov/region03/dclead/web/html/pep_recommendations.html.

systems to conduct the same activities as required after multiple LAL exceedances under section 141.85(j). In addition, or alternatively, we echo the recommendation[61] for water systems to:

1. Develop, update, and post online a comprehensive database of local stakeholders;

2. Create a taskforce that draws from this database and places heavy emphasis on broad representation from low-income neighborhoods, neighborhoods with a high concentration of LSLs, and parent-to-be/parent groups;

3. In partnership with such a taskforce, develop a locally appropriate, long-term, and multimedia public education program that meets well-defined EPA requirements; and

4. Hold at least one annual meeting with all stakeholders, including any other interested members of the public and PWS staff, to go over such matters as the mechanics of lead in water, health risks of exposure, the LCR, key messaging for consumers, and generate new ideas for improved community outreach and involvement.

Whichever formulation of annual public outreach activities EPA requires of water systems should remain in effect until all LSLs in a system have been replaced.

Relatedly, we disagree with EPA's proposal to include a provision for States to allow water systems to discontinue some or all of the proposed public education and filter requirements early if certain actions are taken.[62] As described above, public education will not protect public health "to the extent feasible" if individuals are not provided information about the risks of lead exposure independent of a system's 90th percentile levels, which is critical for the prospects of engaging in health-protective action.

F. "Consumer Confidence Report" requirements are insufficient, misleading, and should be changed

As discussed in our earlier comments on the agency's proposed Consumer Confidence Report (CCR) proposed rule,[63] right-to-know reports should do more to inform readers about possible sources of lead in their water and what they can do to protect themselves from exposure. EPA's own guidelines for effective risk communication stress that messaging must explain clearly "the situation, the risks, and the remedies."[64] While we generally support the changes to the required lead informational statement[65] and to the mandatory health effects language,[66] with the caveats noted earlier, the final LCRI should require disclosure in CCRs that lead in water is common regardless of whether a building's service line contains lead because lead premise

[61] Parents for Nontoxic Alternatives, Letter to NDWAC (Oct. 2015), p. 10, https://static1.squarespace.com/static/58a8b106e6f2e14f1955ecab/t/59c807fe2aeba5f5e8ed64ca/1506281471589/ndwaclcrstatementofdissent.pdf.
[62] 88 Fed. Reg. at 84,956.
[63] Natural Resources Defense Council (NRDC) et al., Comment on Consumer Confidence Report Rule Revisions (May 22, 2023), https://www.regulations.gov/comment/EPA-HQ-OW-2022-0260-0113.
[64] EPA, Risk Communication in Action (Aug. 2007, p. 17, http://nepis.epa.gov/Adobe/PDF/60000IOS.pdf
[65] 88 Fed. Reg. at 84,961-62.
[66] 88 Fed. Reg. at 84,963

plumbing is ubiquitous, and discuss who must bear the cost of measures that involve purchasing materials or hiring professional services.

We believe that "consumer confidence reports" currently prioritize "consumer confidence" over the public's right to know relevant, complete, and accurate information about their drinking water. Foundational consumer right-to-know principles require the provision of best available, peer-reviewed science to enable educated decision-making. Water user confidence in the quality of drinking water, while desirable, should not be the CCR's overriding objective.

EPA faces serious environmental justice and equity concerns if the agency does not require improved disclosures in the CCR. Even if nine percent of homes served by a water system have very high levels of lead, the LCR's public education requirement will not be triggered. It is therefore especially important that the right-to-know reports contain necessary information to enable individuals to take health-protective action if they choose. As described in comments to the most recent revisions of the CCR rule,[67] the reports currently are a tool for public manipulation, downplaying, masking, or omitting information, and leaving readers with the false impression that their tap water is safe when in reality they may face a continuous risk of exposure. Users are not likely to take protective measures if the CCR represents that the water is safe for consumption without acknowledging that water from individual taps may have elevated lead levels even if the system as a whole is "in compliance" with the LCR.

Without information about how to determine whether plumbing is lead-bearing, the required informational statement advises consumers with such plumbing to have their water tested if they wish. This message fails to convey the fact that a one-time test may be misleading. Indeed, elsewhere in the LCRI's preamble, EPA acknowledges bluntly that "[t]ap sampling is not intended to assess exposure to lead and copper in drinking water,"[68] which directly contradicts EPA's advice to have water tested to evaluate potential exposure and health risks. Unfortunately, the CCR foregrounds technical terms, concepts, and measurements when the vast majority of consumers do not know what the LCR monitoring requirement is or what "ppb," "MCLG," "LAL," and "90th percentile" mean. When consumers lack this information, they are unable to make sense of the data provided and assess a) the significance of 90th percentile values above or below the LAL, and b) what potential health risks from lead in water they might personally face.

To convey more accurate messages in CCRs, we echo the example of a standardized lead informational statement we proposed in our May 2023 comments to EPA regarding the proposed CCR rule:[69]

> *A warning: there is no safe level of exposure to lead. Lead is a pervasive contaminant in drinking water because it is in lead service lines and also often in solder, plumbing, and in fixtures, all of which are common even in homes and other buildings without lead*

[67] Campaign for Lead Free Water, Comments on EPA's Proposed "National Primary Drinking Water Regulations: Consumer Confidence Report Rule Revisions" (May 22, 2023), https://www.regulations.gov/comment/EPA-HQ-OW-2022-0260-0080.
[68] 88 Fed. Reg. at 84,929.
[69] Natural Resources Defense Council (NRDC) et al., Comment (May 22, 2023), p. 16, https://www.regulations.gov/comment/EPA-HQ-OW-2022-0260-0113.

service lines. Lead exposure is associated with brain damage, impaired intellectual development, ADHD, high blood pressure, cardiovascular disease, kidney disease, miscarriage, and reproductive problems in men and women. We encourage you to take steps to protect yourself from lead regardless of the reported levels by: always using cold water that has been filtered with filters certified to remove lead; following filter manufacturers' installation and maintenance instructions; not boiling water without filtering it; not mixing unfiltered tap water with baby formula; and cleaning sink aerators regularly.

We further call on EPA to require water systems to include a link in the CCR to an EPA online portal where compliance data should be posted.[70] Providing these foundational pieces of information to consumers about the quality of drinking water will help consumers make informed decisions about how best to protect themselves from lead-in-water risks.

G. Responses to EPA's requests for comment about public education and outreach issues

1. The proposed determination that the public education treatment technique is feasible and prevents known or anticipated adverse health effects to the extent feasible.

Additional changes are needed to make public education and notification materials more accurate and outreach more effective and to prevent known or anticipated adverse effects on the health of persons to the extent feasible. These changes are addressed throughout our public education comments.

2. Comment and supporting data on the capacity of water systems to conduct some or all of the required public education activities in 30 days, or another period of time that is less than 30 or 60 days, after the end of the tap sampling period in which a systemwide lead action level exceedance occurs.

We believe that it will be feasible for systems to conduct the public education activities within 30 days. See section E.i. for more details.

3. Data, analyses, and comments on the proposed determination that water systems are capable of providing consumer notices of individual tap sampling results within three calendar days of obtaining those results, regardless of whether the results exceed the lead or copper action level, or if a longer time frame is needed (e.g., three business days, seven calendar days, 14 calendar days).

We encourage EPA to adopt a 24-hour notification requirement for all individual tap sampling results. This is discussed in section B.i above.

4. Whether the proposed requirement for water systems to offer lead sampling to consumers with LSLs, GRR service lines, or unknown service lines in the notice of service line material is effective at reducing adverse health effects. EPA is also requesting comment on the requirement

[70] For more details on this request, see the Transparency and Compliance discussion (section 14) of our comments.

for water systems to deliver consumer-initiated test results within three days of obtaining those results.

We support the proposal to require systems that exceed the LAL to offer tap monitoring to all customers who request it, and to offer tap monitoring for all customers with LSLs, GRR, or unknown service lines who request it regardless of whether there has been an LAL exceedance. This is discussed in section B.ii above.

5. Whether the types and timing of outreach activities proposed for systems failing to meet the mandatory service line replacement rate are appropriate and whether other activities should be considered.

We support EPA's proposal to require additional outreach activities for systems that fail to meet the mandatory SLR rate to conduct annual public education but encourage EPA to strengthen the requirements for outreach activities. This is discussed in section E.i and E.ii above.

6. Whether EPA should require systems to annually notify consumers if they are served by a lead connector, in addition to notifications for sites with lead, GRR, or lead status unknown service lines.

We encourage EPA to increase the frequency of notification of service line materials from annual to once every six months for water systems that have lead, GRR, or unknown service lines beginning five years after the compliance date. *See* section C.i above.

7. Whether EPA should require water systems to provide filters to consumers when there is a disturbance resulting from replacement of a water main.

Yes. This is addressed in section C.ii above.

8. Whether EPA should require additional public education requirements to further encourage swift service line replacement faster than the 10-year replacement deadline. For example, should water systems that have LSLs, GRR service lines, or unknown service lines five years after the compliance date for the LCRI be required to increase the frequency of the notification of service line materials from annual to once every six months?

Yes. This is addressed in section C.i above.

9. EPA is seeking information and data on when a system provides translated materials to consumers with limited English proficiency, what resources are used to translate materials (e.g., State resources, community organizations), and what barriers water systems may face in providing accurate translated materials.

While not directly addressed in these comments, we highlight the legal requirement and environmental justice implications of ensuring that public materials are made available. *See* section A.ii.

10. Whether the Agency should require States, as a condition of primacy, to provide translation support to water systems that are unable to do so for public education materials to consumers with limited English proficiency.

Yes. See section A.ii above, as well as the discussion of primacy within section 2.D.iii.

11. EPA is also requesting comment on additional ways to streamline public education and associated certification requirements (e.g., combine deadlines for systems to conduct public education or submit information to the State).

This is not addressed in our comments.

H. Conclusion

In summary, in order for EPA's public education regulations to comply with the SDWA mandate to prevent adverse health effects "to the extent feasible," EPA must require that consumers receive complete and accurate information from water systems about their drinking water quality, and ensure that consumers are not misled to believe their drinking water is safe when it is not. Providing incomplete information to consumers will fail to comply with SDWA's mandate to prevent adverse health effects to the extent feasible. EPA should:

- Require that CCRs, public education, and public notification materials emphasize that individuals can immediately take health-protective action by using certified lead-reducing filters, rather than waiting years for source water treatment, corrosion control treatment, and lead service line replacement to be implemented;

- Ensure that individuals understand the possibility of elevated lead levels even when a single tap monitoring result does not detect lead or when a system is "in compliance," due to factors including the ubiquity of lead-containing interior plumbing and the unpredictability of lead releases; and

- Provide frequent, robust, multi-media, and systemwide public education and outreach.

Section 9: Schools and Child Care Facilities

The LCRI's provisions relating to lead in schools and child care facilities fall woefully short of protecting babies and children. Considering the history[1] of the LCR, this is likely a once-in-a-generation update, or at the least, a once-in-a-decade update, and therefore, the only chance to protect generations of children. EPA must take strong action to protect these vulnerable subgroups that will be doomed to shoulder the burden of lead exposure their entire lives. Such action is entirely absent from the current proposal. EPA states it lacks authority over schools and child care facilities, and points to joint efforts with other agencies to work to protect our youngest residents.[2] The reality is that many, if not all, of these joint efforts have resulted in little to no action, leaving millions of infants and children exposed to lead via drinking water.[3]

Millions of the country's youngest children attend day care each work day, often spending the entire work day there.[4] School-aged children spend at least six hours per day at school, with a large percentage of children participating in pre- or post-school activities at the school.[5] Almost 15 million children participate in the school breakfast program before school, further extending their time there. [6] This is all to say that children spend a lot of their waking hours in child care facilities or schools, often a majority of their waking hours during the work week, and consume water and formula or other food made with water that is not tested for lead.

The LCRI does nothing to remedy this situation, despite the fact that lead exposure is particularly harmful to infants and children. Infants and children's bodies and brains are undergoing rapid development and more easily absorb lead than adults.[7]

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[1] EPA, *Lead and Copper Rule, available at* https://www.epa.gov/dwreginfo/lead-and-copper-rule (last visited Feb. 8. 2024).

[2] 88 Fed. Reg. at 84,957.

[3] For example, EPA specifically mentions a letter the agency sent with DHHS to try to protect children from lead in drinking water. However, EPA and DHHS do not even require lead testing and remediation in Head Start facilities, which look after some of our country's youngest children, ranging from birth to age five. *See* 88 Fed. Reg. 84,957, wherein EPA and DHHS abdicate their responsibility to protect children to state governments, and U.S Dept. of Health & Human Services, *Head Start Services, available at* https://www.acf.hhs.gov/ohs/about/head-start, (last visited Feb 2, 2024), describing the Head Start Program. Neither has EPA persuaded USDA to define "potable water" that is required to be available in schools and child cares to meet the American Academy of Pediatrics' recommendation that lead levels in school water not exceed 1 ppb. Schools and child cares that are funded by the National School Lunch Program and breakfast program are explicitly required under The Healthy, Hunger-Free Kids Act of 2010, Pub. L. No. 111-296, 124 Stat. 3183, at 3216 & 3227 (Dec. 13, 2010), codified at 42 U.S.C. 1758(a)(2)(A)(i) & 1766(u)(2), to make "potable" water available to children funded under these programs. The USDA memorandum providing guidance on the implementation of this provision does not require schools or child cares to address lead in their water or even to meet EPA drinking water standards. USDA, *SP 28-2011-Revised* 3 (July 12, 2011), *available at* https://fns-prod.azureedge.us/sites/default/files/cn/SP28-2011osr.pdf#page=3.

[4] Lynda Laughlin, *Who's Minding the Kids? Child Care Arrangements: Spring 2011*, U.S. Dept of Commerce 2, 6 (April 2013), *available at* https://www2.census.gov/library/publications/2013/demo/p70-135.pdf.

[5] *Id.* at 12.

[6] USDA, *The School Breakfast Program*, (Nov. 2017), *available at* https://fns-prod.azureedge.us/sites/default/files/resource-files/SBPfactsheet.pdf.

[7] Alan R. Abelsohn & Margaret Sanborn, *Lead and children*, 56 Can. Fam. Physician 531 (Jun. 2010) *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2902938/#:~:text=Children%20are%20more%20vulnerable%20than,by%20concurrent%20iron%20or%20calcium.

Lead exposure, even at low levels, can result in many life-long cognitive and motor deficits including memory and attention problems, lower IQ, and reduced reading and math skills.[8] It is no surprise that the CDC, AAP, and WHO all state there is no safe level of lead[9] and the AAP recommends that water in schools does not exceed 1ppb.[10]

EPA states that the proposed school and child care facility provisions are part of the LCRI's public education treatment technique;[11] however, the proposed rule will have little, if any, positive effect on public health or public education. The proposal outlines a *voluntary*, one-time five-year testing program that would generate little useful data and even less remediation, because remediation is not required. The result is that children, a vulnerable subgroup that must be considered in setting standards under the SDWA,[12] will be left unprotected in the places where some spend a majority of their waking hours. This complete lack of protection is not only unacceptable from a public health standpoint, it does not comply with the SDWA. Additionally, the proposal is very likely to do more harm than good by creating a false sense of security and generating incomplete information.

The proposed provisions for lead in drinking water in schools and day care facilities (together, "facilities") fall short for several reasons. The slow, voluntary, one-time testing program requires very little actual testing if a facility opts in; only five water samples would be drawn at schools, and only two at child care facilities. Some of these facilities over a hundred drinking water outlets; the "required" testing would amount to a small percentage. Even EPA admits this amount of testing falls far short of what is needed to protect children.[13] Further, water systems need only reach out to 20 percent of facilities in their service area every year to inform them they are eligible for testing, meaning twenty percent of facilities can't even opt-in until year five. Finally, even if a facility does opt-in, the proposal essentially requires no further action; there is no requirement that parents, guardians, or employees ever see the test results, and no remediation is required. This is true even if a facility finds it has outlets testing above 10 or 15 ppb. EPA also has eliminated any citation to a level of lead in school tap water that should trigger any action, ignoring the American Academy of Pediatrics recommended maximum level in schools of 1 ppb. While it is our strongly held view that the best approach is to simply install filtration stations in schools and child cares ("filter first") without first testing, we note that even the very weak 1991 LCR recommended that school "water fountains and/or outlets be taken out

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[8] *Id.*

[9] CDC, *Childhood Lead Poisoning Prevention, Blood Lead Reference Value*, (Dec. 2022), *available at* https://www.cdc.gov/nceh/lead/data/blood-lead-reference -value.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fnceh%2Flead%2Facclpp%2Fblood_lead_levels.htm Bruce P. Lanphear, et al., *Prevention of Childhood Lead Toxicity*. Pediatrics (July 2016), https://publications.aap.org/pediatrics/article/138/1/e20161493/52600/Prevention-of-Childhood-Lead-Toxicity?autologincheck=redirected; World Health Organization, *Lead Poisoning*, (Aug. 2023), :https://www.who.int/en/news-room/fact-sheets/detail/lead-poisoning-and-health.

[10] Lanphear, et al. *supra* note 9.

[11] 88 Fed. Reg. at 84,956.

[12] *See* 40 C.F.R. § § 141.205 (a)(4) and 141.154(a), regarding public notice requirements describing vulnerable subpopulations.

[13] 88 Fed. Reg. 84,957; EPA, *3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities*, *available at* https://www.epa.gov/ground-water-and-drinking-water/3ts-reducing-lead-drinking-water (last visited Feb. 2, 2024).

of service if the lead level exceeded 0.020 mg/L [i.e. 20 ppb]."[14] This is a high number and does not recommend filters be installed without first testing, but at least it is a recommendation for specific remedial action when a specific lead level is exceeded in schools. By proposing clearly inadequate voluntary testing, failing to require public disclosure of test results to students, parents or staff, failing to recommend or require POU filters, and not even stating lead level that should trigger any specific action, EPA's proposal does a disservice to students and their families.

The vulnerability of infants and children and the unique exposure risks presented by plumbing and water usage patterns in schools and child cares necessitates a different approach than the one used for lead in residential areas. Providing filtered drinking water to children in these facilities is the most health protective and cost-effective action[15] and is well within EPA's authority under the SDWA and the Lead and Copper Rule. Therefore, in place of the proposed voluntary and potentially misleading testing regime, EPA should instead require public water systems to choose between:

a) Installing certified lead-removing point-of-use filtration[16] stations at schools and child care centers that will ensure lead removal or

b) Conducting robust ongoing monitoring including the testing of every outlet that may be used for drinking water or cooking at least every 6 months, with specific recommendations for replacement or removal of outlets from service if they test over 1 pbb.[17]

These options[18] are discussed further in sections 9.A-B and C.iii. below.

Additionally, the small percentage[19] of schools that are regulated as non-transient non-community water systems (NTNCWSs) should be required to install POU filtration and not given the option to test and remediate.

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[14] LCR, 56 Fed. Reg. at 26,479.

[15] NRDC, *Michigan Filter First Cost Estimate,* (2020), *available at* https://www.nrdc.org/sites/default/files/media-uploads/michigan-filter-first-cost-estimate-202001.pdf.

[16] In this section when "filtration" is used, it specifically means certified lead-removing filters.

[17] If EPA determines that 1 ppb is too low, the maximum EPA should allow is 5 ppb.

[18] Requiring systems to choose between these two options is a logical outgrowth of the proposed rule, as EPA has specifically requested comment on the frequency and number of samples water systems must take, and on waivers related to filtration programs. A final rule is a logical outgrowth if "affected parties should have anticipated that the relevant modification was possible." *Allina Health Services v. Sebelius*, 746 F.3d 1102, 1107 (D.C. Cir. 2014) (quoting *CSX Transp., Inc. v. Surface Transp. Bd.*, 584 F.3d 1076, 1080 (D.C. Cir. 2009)). If the final rule is "reasonably foreseeable," it is considered a logical outgrowth. *Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 210 (D.C. Cir. 2007) (quoting *Long Island Care at Home, Ltd. v. Coke*, 551 U.S. 158, 161 (2007)).

[19] Lead Service Line Replacement Collaborative, *Child Care Facilities and Schools*, (accessed Feb. 5, 2024) *available at* https://www.lslr-collaborative.org/child-care-and-schools.html#:~:text=%E2%80%8B%E2%80%8BUnder%20the%20Safe,drinking%20water%20at%20their%20site. (stating about 10 percent of schools run their own water system).

A. The Filter First approach is the best way to protect children

EPA recognizes that "children under the age of six are at the greatest risk of adverse health effects due to lead exposure" Drinking water testing in schools and child care facilities consistently shows that lead is prevalent in these places.[20] Data from areas with mandatory testing programs demonstrate that lead is present in the drinking water in schools and child care facilities, and often at alarmingly high levels. For example, New York City found that 82 percent of its public schools had lead levels above 15 ppb.[21] California found that a quarter of the day care facilities that tested had results above the state's level of 5 ppb, with nine sites testing over 1,000 ppb.[22] In Pennsylvania, over 70 percent of schools that tested had at least one outlet over 5 ppb.[23] These are just a few examples of what has been proven time and again.[24] In contrast, post-filtration testing shows that certified filters effectively remove lead when the filter is properly installed and maintained.[25] Further testing generally is not necessary (particularly an extremely limited voluntary program), and since it provides for so few one-time tests, it is in fact harmful. It is likely to overlook lead contamination and to provide a false sense of security, and only delays prompt action to protect children.

In place of its limited voluntary testing regime, EPA should instead incentivize water systems to work with local schools and child cares to immediately install filters at kitchen faucets and designated hydration stations. Minimal testing[26] should then be conducted at these filtered drinking water outlets to ensure that the filters are working properly. This will ensure that children are immediately protected from the harms of lead in drinking water. EPA should incentivize systems to take the filter first approach which systems can do in collaboration with schools and child cares in their service area. Alternatively, water systems must conduct robust testing with full public disclosure of test results and remediation and remediation in schools and child cares.

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[20] *See, for example,* Joan Leary Matthews, NRDC, *School Drinking Water Gets an F for Lead*, (Mar. 2018), *available at* https://www.nrdc.org/bio/joan-leary-matthews/school-drinking-water-gets-f-lead (finding a lead exceedance in 82% of New York schools); CDPHE, *Test & Fix Water for Kids Lead Testing Results, available at* https://lookerstudio.google.com/u/0/reporting/49a0278f-2304-4ffb-baa7-6a3891abca07/page/z9o2C (Colorado school and child care sampling data with over 16,000 samples above 1 ppb); Environmental Working Group, *1 in 4 California child care centers found to have alarming levels of lead in drinking water, putting babies and children at risk,* (May 11, 2023) *available at* https://www.ewg.org/news-insights/news-release/2023/05/1-4-california-child-care-centers-found-have-alarming-levels (discussing data showing one-quarter of daycares tested found lead above the state action level of 5 ppb, and 183 sites above 50 ppb); and *Indiana Lead Sampling Program for Public Schools*, (Dec. 2018) *available at* https://www.in.gov/ifa/files/2017-2018-summary-of-enrollment.pdf. (showing 62% of schools that tested had at least 1 fixture with lead over 15 ppb).

[21] Matthews, *supra* note 20.

[22] Environmental Working Group, *supra* note 20.

[23] Women for a Healthy Environment, *State of Environmental Health in Pennsylvania Schools* 30, (2021) *available at* http://womenforahealthyenvironment.org/wp-content/uploads/2022/04/SOSreport20212.pdf.

[24] *See, for example,* Environment America, Lead in Schools' Water Map (July 26, 2022) *available at* https://environmentamerica.org/resources/lead-in-schools-water/ (last visited Feb. 4, 2024).

[25] *See* Dept. of General Services, *Water Sampling Results for DC Public Schools*, *available at* https://dgs.dc.gov/page/water-sampling-results-dc-public-schools (accessed Feb. 4, 2024) (demonstrating filters consistently produce water with <1 ppb lead).

[26] Testing should be done per manufacturer's requirements, when a filter indicates it is no longer functioning properly, or at least once annually.

Additionally, EPA cannot rely on the LCRI's LSLR requirements to protect children in schools or larger day care facilities as these locations are generally not served by LSLs.[27] Tellingly, EPA's proposed rule does not even require water systems to prioritize schools or child care facilities if a LSLs or GRRSLs *is* present. This omission must be remedied and, and together with the LCRI's almost non-existent school and child care provisions, it appears as though EPA has neglected to meaningfully consider children and its obligations under the SDWA. By relying on a one-time, five-year voluntary testing program, EPA is not protecting this vulnerable subgroup to the extent feasible.

B. EPA's authority to require installation of filters

EPA must use its authority, granted via the SDWA, to require water systems to take action in schools and child care facilities as it is the only way to protect children. The SDWA requires the "prevent[ion of] known or anticipated adverse effects on the health of persons to the extent feasible"[28] and grants EPA the authority to regulate public water systems to achieve this.[29] The adverse health effects of lead exposure via drinking water, discussed above, are well-documented and easily and consistently prevented by installing filters on all outlets used for drinking and cooking. The installation and maintenance of water filters is feasible, as demonstrated by several places that have required POU filters in schools and child care facilities. For example, Washington, D.C. has had a filter first program in place since 2018,[30] Michigan recently passed filter first legislation applying to both schools[31] and child care facilities,[32] and in 2022 Philadelphia passed filter first legislation.[33]

Further, EPA has consistently required systems to conduct certain activities on private residences including the installation, maintenance, and monitoring of POU devices.[34] Indeed, Congress has explicitly required EPA to consider and list POU devices that can be used, subject to certain safeguards, as an available technology for small systems to comply with drinking water standards.[35] The filter first approach outlined in the first option above almost directly mirrors the program laid out for small system compliance. Such activities are not limited to small

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[27] While small schools and child care facilities may be served by a LSL, lead service lines are soft and often small in diameter, meaning they cannot provide the water flow needed in larger buildings.
[28] 42 U.S.C. § 300g-1(b)(7)(A).
[29] 42 U.S.C. § 300g.
[30] Council of the District of Columbia, § 38–825.01a. *Prevention of lead in drinking water in schools*, *available at* https://code.dccouncil.gov/us/dc/council/code/sections/38-825.01a.
[31] Michigan Legislature, House Bill 4341 (2023), *available at* http://legislature.mi.gov/doc.aspx?2023-HB-4341.
[32] Michigan Legislature, House Bill 4342 (2023), *available at* http://legislature.mi.gov/doc.aspx?2023-HB-4342.
[33] City Council of Philadelphia, Bill No. 220221-A01, (2022), *available at* https://phila.legistar.com/LegislationDetail.aspx?ID=5521749&GUID=9D91F31C-7792-49A7-A3FB-0515F7A4AFE3&Options=ID%7CText%7C&Search=220221.
[34] 40 C.F.R. § 141.93(a)(3).
[35] *See* SDWA § 1412(b)(4)(E)(ii)(III), 42 U.S.C. 300g-1(b)(4)(E)(ii)(III), (In issuing an MCL or treatment technique, EPA shall list technologies available to small systems that can meet the standard for small systems, including, "point-of-entry or point-of-use treatment units. Point-of-entry and point-of-use treatment units shall be owned, controlled and maintained by the public water system or by a person under contract with the public water system to ensure proper operation and maintenance and compliance with the maximum contaminant level or treatment technique and equipped with mechanical warnings to ensure that customers are automatically notified of operational problems.")

water systems; EPA has consistently required water systems to conduct various activities on property not owned or operated by the water system in order to protect public health. For example, water systems have been required to test drinking water for lead in residences at the tap for more than three decades.[36]

EPA should require systems to choose between the two options suggested above, and should incentivize the first option, the installation of point of use devices in schools and child care facilities. The proposed rule as it stands will likely do nothing to protect children in the places that[37]

Unique requirements and a lower "action level" for schools and child care centers are warranted because of the unique problems presented by such facilities. EPA recognizes that "...larger buildings, such as schools and child care facilities, *can have a higher potential for elevated lead* levels due to complex plumbing arrangements, the presence of lead in premise plumbing, and inconsistent water use patterns that can result in long stagnation times."[38] The fact that a vulnerable group is served by plumbing systems that have a higher potential for elevated lead dictates that EPA take an approach that is different from what the agency requires for residential consumers (limited, tiered testing); EPA must require that water systems install filters or conduct robust sampling followed by remediation. This is also consistent with EPA's treatment of small water systems; because of the unique circumstances faced by some small water systems, the LCRI retains their ability to "select the most appropriate compliance technology to reduce the lead risks to their consumers" including the installation of point of use filters.[39]

Finally, for the small percentage of schools that are regulated as NTNCWSs, EPA must require systems to install filters and conduct periodic sampling (and of course remove any lead service line), as opposed to allowing systems to choose between options.

C. The proposed rule does not protect children

The proposed rule includes a testing scheme that is not even effective as a "test and tell" strategy, as it will not identify the range of lead in water nor the extent to which taps throughout school buildings and child care facilities have lead in the water. This is because the one-off, five-year voluntary program requires so little testing, with only two outlets being tested at child care facilities and five tested in schools. Finally, the "tell" part of the test and tell strategy is completely absent. The LCRI does not require that parents, guardians, or employees ever get notification of testing, testing results, or action level exceedances, nor does it require systems to inform the public where testing has and has not occurred. Each of these is discussed in turn below.

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[36] LCR. 56 Fed. Reg. 26,460 at 26555 (June 7, 1991), adopting 40 C.F.R. § 141.86 (requiring at-the-tap sampling).
[37] EPA, EPA-HQ-OW-2017-0300-1622, *Public Comment and Response Document for the Final Lead and Copper Rule Revisions* 293 (Jan. 15, 2021) *available at* https://www.regulations.gov/document/EPA-HQ-OW-2017-0300-1622 (stating children spend a large portion of their day in schools and child care facilities).
[38] 88 Fed. Reg. 84,957. This is also why the other elements of the LCRI are unlikely to protect children outside of their homes, as these facilities are unlikely to be served by a LSL, as discussed above.
[39] 88 Fed. Reg. at 84,945.

EPA's guidelines outline the various ways the LCRI fails to protect kids. The *3T's for Reducing Lead in Drinking Water in Schools* states that "[a]t a minimum, every outlet that is regularly used for cooking and drinking should be sampled.[40]" While test and tell is not what EPA should incentivize, this guideline demonstrates the chasm between what the Agency recognizes is needed to protect kids and what is outlined in the LCRI. The 3T's further advises schools to take immediate remediation steps like shutting off problematic outlets, followed by control measures like installing filters.[41] Finally, the 3T's states schools should "make sure [...] communication materials include:... The results of the sampling program and plans for correcting any identified problems.[42]" The LCRI requires systems to distribute the 3T's or similar EPA guidance to facilities and this will have little effect. Because the 3T's guidance is not mandatory, school sampling programs across the country produce results on a daily basis that do not follow the guidance, or conveniently skip elements of it. Relying on guidance, rather than requirements, for the actual protection of children's health is not an effective strategy and does not "prevent known or anticipated adverse effects on the health of persons to the extent feasible" as required by the SDWA.[43]

i. The program is voluntary

The first pitfall of the proposed rule's school and child care provisions is that the program is entirely voluntary. Experience in several states demonstrates that voluntary testing programs yield dismal participation rates.[44] For example, Colorado's voluntary testing program resulted in

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[40] EPA, *3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance,* 24 (2007), *available at* https://19january2017snapshot.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf. Even the title of EPA's guidance, "Training, Testing, and Taking Action." demonstrates the gap between the 3T's the LCRI.

[41] EPA, *3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: A Training, Testing, and Taking Action Approach, Revised Manual,* 42-43 (2018), *available at* https://www.epa.gov/system/files/documents/2021-07/epa-3ts-guidance-document-english.pdf.

[42] *Id*. at 11.

[43] SDWA § 1412(b)(7)(A), 42 U.S.C, 300g-1(b)(7)(A).

[44] In FL, less than 10% of schools have participated in its voluntary testing program. Environment America and U.S. Public Interest Research Group, *Get the Lead Out: Grading the states on protecting kids' drinking water at school* (Feb. 2023), at 33. *Available at* https://publicinterestnetwork.org/wp-content/uploads/2023/02/AME-GTLO-Report-Feb23-1.2.pdf. In Georgia, "[o]f the more than 2,200 Georgia public schools, only 91 have signed up since August of 2021. Only 118 of approximately 3,100 child care centers and 1,500 family child care learning homes have signed up." Ross Williams, Georgia Recorder, *Vast majority of GA day care centers, public schools skip state program to test for lead in water* (July 25, 2023) *available at* https://georgiarecorder.com/2023/07/25/vast-majority-of-ga-day-care-centers-public-schools-skip-state-program-to-test-for-lead-in-water/. In Iowa, only 51 buildings in seven districts tested under its 2022 voluntary school testing program. Iowa Dept. Of Natural Resources, *State of Iowa Public Drinking Water Program 2022 Annual Compliance Report* Appendix C (June 2023), *available at* https://www.iowadnr.gov/Portals/idnr/uploads/water/wse/Iowa%20ACR%20Full%20Report.pdf. In Kansas, only 239 out of 1,305 schools tested their drinking water, *Get the Lead Out*, *supra* note 44, *at 35.*
In Kentucky, only 26 schools and child care facilities participated in its voluntary program. Team Kentucky Energy and Environment Cabinet, *Kentucky's Lead in Drinking Water Reduction Program, available at* https://www.arcgis.com/apps/dashboards/8806517e55eb4c6bbe8b6d9eee379daa.
In Arkansas, only 64 facilities have tested since 2021. There are over 1,500 child cares alone in the state. Email between Corinne Bell, Kathy McFarland, and Tim Cain (Jan. 26, 2024). Information on Arkansas's program is *available at* https://dese.ade.arkansas.gov/Offices/learning-services/school-health-services/lead-testing-opportunity#:~:text=Unfortunately%2C%20in%20many%20cases%20exposure,their%20drinking%20water%20for%20lead.

a mere 67 schools participating over a three-year period; 1,530 schools were eligible. While Colorado's program sought to prioritize schools in disproportionately impacted communities, only three such schools participated.[45] Similarly, in Ohio, only fourteen percent of schools participated in the state's voluntary testing program.[46] The list goes on. In Arkansas, only 64 schools and child cares have participated in their voluntary testing program since 2021;[47] Arkansas has 1,058 schools and over 1,500 child care centers.[48] This is just a snapshot of what is happening across the country. There is no reason to believe that the voluntary testing program in the proposed rule will lead to different results. EPA should reasonably expect the rule to garner similarly dismal participation rates meaning very little testing data will be generated.[49]

EPA states a hope that the proposed rule would allow for (not require) baseline sampling that would be "supplemented by state efforts."[50] EPA's reliance on the states to supplement the meagre voluntary sampling efforts in the proposed rule is misplaced. This optimistic reliance on states has created a patchwork of protections and left the vast majority of children completely unprotected. A review of states' school drinking water testing and remediation laws and policies found that *over half* of the United States is failing to protect children, with only three states even earning a grade of 'B' for their efforts—and no state earned a 'A'.[51] This means that in just a few places, there are some protections for children, and nearly everyone else is left to fend for themselves. Further, this reliance on states ignores the reality that many states currently have "no stricter than federal requirements" laws in place. This does not result in the protections of vulnerable populations from lead exposure, as required by the SDWA.

ii. The testing will not demonstrate that water is safe

If a school or child care facility does opt-in to the voluntary testing, the requirements, to collect five samples and two samples one time, respectively, are not sufficient to determine whether water is safe for children to consume. Lead in water is highly variable; school sampling data sets show that even when the exact same faucet is used in multiple rooms, individual sample results can vary widely.[52] A faucet that tests low today may test high in a repeat sample. For these reasons, there is no such thing as a "representative tap" in a school or child care facility, and while individual samples can flag a lead problem, they cannot be used the other way

[45] Colorado has identified 1,579 disproportionately impacted block groups. CDPHE, *Disproportionately Impacted Communities, GIS Data Layer* (accessed Feb. 2, 2024) *available at* https://www.arcgis.com/home/item.html?id=7d0cf560b11e41f0a4d323c4e6c90e0b#data.
[46] *Get the Lead Out supra, n. 44, at 39* (Feb. 2023) *available at* https://publicinterestnetwork.org/wp-content/uploads/2023/02/AME-GTLO-Report-Feb23-1.2.pdf.
[47] *Supra n*. 44.
[48] A search for "preschool" centers on the Arkansas Dept. of Human Services website turns up over 1,500 facilities. Arkansas Dept. of Human Services, *Find Providers,* (accessed Feb. 2, 2024), *available at* https://ardhslicensing.my.site.com/elicensing/s/search-provider/find-providers?language=en_US&tab=CC.
[49] This is particularly important because the LCRI relies on the public education treatment technique for schools and child care facilities, and very little education can happen if there is very little data.
[50] 88 Fed. Reg. at 84,958.
[51] *See generally, Get the Lead Out, supra,* note 44.
[52] *See* Elin Betanzo, Safe Water Engineering, *Filter First to Provide Safe School Drinking Water,* PowerPoint Presentation (Oct. 27, 2022) *available at* https://pirg.org/wp-content/uploads/2022/12/Filter-First-Presentation-CoPirg-2.pdf.

around—to declare a tap safe. Additionally, a single 250 mL sample, as required in the proposed rule, cannot identify if the lead source is the fixture or upstream.

iii. Testing once in a five-year period is inadequate

The frequency of testing is also inadequate. Water systems must contact only 20 percent of the facilities in their service area every year to inquire whether they want testing, and after five years, the voluntary testing program essentially ends. This five-year rotation means that if your six-week-old enters day care or your three-year-old enters pre-kindergarten in one of the unlucky facilities that isn't contacted until year five, you will never know what water or formula your child was drinking while out of the home.

If EPA is to allow an option for water systems to sample water instead of installing point of use devices, sampling must occur at all schools and child care facilities every year, at least twice a year, with prompt filter installation for sources testing at or above 1 pbb.[53] Testing once in a five-year period and then never again is insufficient to protect children, particularly the most vulnerable of the subgroup, children who are less than six years old.

iv. The testing and notification requirements do not support public education

EPA states that the school and child care provisions are part of the public education treatment technique, but the LCRI fails to educate the public for three main reasons.[54] First, there will be very little information generated because the program is voluntary and testing is extremely limited, and any information that is gathered will be unreliable. Both of these issues are discussed above. Third, there is no actual requirement to disseminate information to the public.

The proposed rule also has no true public notification requirement, and this must be changed so the final rule does. Under the proposed rule, water systems must send test results to the facility, the state, and the state and local health departments. Perplexingly and alarmingly for a section deemed to be about public notification, there is no requirement that parents, guardians, employees, or children ever receive notice that water testing even occurred or the results of that testing. The only provision related to public notice requirement is a minimal requirement that CCRs contain a statement that schools and child care facilities are eligible for testing and interested persons should contact those facilities if they want additional information.

Not only does the LCRI's proposal fail to educate the public, the voluntary testing regime may in fact mislead the public, as children, parents, guardians, and employees are left with a false sense of security that the water is being tested and schools are acting on the results of that testing. Relying on data from the proposed testing regime is akin to pulling one encyclopedia book from a shelf, reading one line in one entry, and declaring that you know and understand the

[53] There have been instances of schools "remediating" leaded sources by simply shutting off the source or applying signage it is not to be used for drinking. Both can result in inadequate drinking water supply at the facility. Applying signage still allows the source to be used, particularly by children who are not yet able to read.
[54] 88 Fed. Reg. at 84,956.

contents of Encyclopedia Britannica. This is the opposite of education and is in fact misleading and potentially dangerous.

Even if EPA's testing regime was robust enough to generate reliable data, the LCRI's CCR requirement does not constitute public education. The final rule must mandate that, at the very least, affected persons including parents, guardians, and employees receive notification of test results above 1 ppb[55] as soon as they are available. This could be done either via the system's website, direct mail, and/or by working with the tested facilities themselves. The final rule must also require that the CCRs and system websites maintain a list detailing which facilities tested, which refused testing, which were unresponsive, and which will be contacted at a later date for testing. All of a state's school and child care testing data must be made available online so that the public can track progress and see the results for schools or day care facilities in their area.

v. There is no remediation requirement

One of the biggest problems with the proposed rule is that it does nothing to protect children if lead is found in a facility's drinking water. Indeed, as mentioned in the previous paragraph, the proposed rule allows testing results to be hidden from the very people it affects—children and employees—and parents of those children. the prevalence of lead in drinking water in schools and daycares is alarming. Yet, the current proposed rule requires no action to fix such a problem once it is revealed. This is a major failure of the proposed rule.

vi. The provisions will create or exacerbate environmental justice issues

Experience at the state level shows that those facilities that can afford to remediate are the most likely to enlist in a voluntary testing program such as the one in the draft rule.[56] The reason is obvious: who wants to uncover a problem that won't be fixed? We know that few states will enact more stringent requirements than those in the LCRI, as very few have in the past. We also know that within a state there will be varying degrees of participation in a voluntary program. This results in different drinking water protections based on where one lives, undoubtedly with less protections in place for infants and children in low-income areas.

Low income children and children of color are not only the most likely to be left behind by the EPA's voluntary testing program, they are the most susceptible to the effects of increased lead exposure at school or day care. Low-income children[57] and children of color[58] are more likely to have additional lead exposures and higher blood lead levels to begin with. Children of

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[55] Or 5 ppb if EPA does not accept the 1 ppb limit.

[56] As described above, Colorado's voluntary testing program saw the participation of only three schools from disproportionately impacted areas, even with the state prioritizing outreach and testing in such schools.

[57] Hauptman et al., *Individual- and Community-Level Factors Associated With Detectable and Elevated Blood Lead Levels in US Children,* 175 JAMA Pediatrics 1252, (Sept. 27, 2021), *available at* https://jamanetwork.com/journals/jamapediatrics/article-abstract/2784260.

[58] Lynch and Meier, *The intersectional effect of poverty, home ownership, and racial/ethnic composition on mean childhood blood lead levels in Milwaukee County neighborhoods,* PLOS ONE (Jun. 19, 2020), *available at* https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0234995.

color are more likely to live in a home served by a lead service line[59] and so are more likely to be exposed to lead in drinking water at home. Being a person of color[60] and low income[61] are both risk factors for lead exposure generally as well as elevated blood lead levels.

The proposed rule will undoubtedly compound these well-documented environmental justice problems. Some states and regions will continue to do the bare minimum under the proposed rule, meaning no testing will take place, while schools and day cares in wealthy areas with access to remediation funds will take action. Some, if not most, of the babies and children in the communities where no action will be taken already have elevated blood lead levels and a high risk of lead exposure. EPA can and must protect these children by enacting a national regulation that requires water systems provide filtered water or robust testing and remediation. This is the only way to ensure equal protection of all children, particularly the most vulnerable.

vii. Conclusion

For all of the reasons discussed above, EPA must change the LCRI in order to protect our youngest residents from life-long harm. Specifically, EPA must require water systems to either install filters and regularly test and maintain them to ensure their functionality or conduct a minimum of semiannual testing and installation of filters on any outlet testing above 1 ppb. For schools regulated as NTNCWSs, EPA should require the former option, installation of filters with regular testing and maintenance.

D. Waivers and Exemptions

EPA is correct to allow states to grant waivers[62] to schools and child care facilities that already have a state or locally-required filter first program in place. Such waivers should be limited to facilities that 1) have point of use filters on all drinking and cooking water sources, 2) test those filters at least annually to ensure that the water provided measures less than 1 ppb of lead, and 3) maintain the filters.

EPA should not provide the proposed exemption for schools and child care facilities built after January 1, 2014, and facilities that revamped their plumbing after that date. [63] This is because of the likelihood of elevated lead levels in schools generally, as noted by EPA, and children's vulnerability to lead exposure. Plumbing installed after January 1, 2014 still contains lead, and the increased stagnation times common in schools and child care centers mean children are likely to be exposed to lead in drinking water even in these newer buildings.

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[59] Justin Williams and Tara Jagadeesh, Metro Planning Council, *Data Points: the environmental injustice of lead lines in Illinois*, (Nov. 10, 2020), *available at* https://www.metroplanning.org/news/9960/Data-Points-the-environmental-injustice-of-lead-lines-in-Illinois.

[60] Abt Associates, Environmental Justice Analysis for the Proposed Lead and Copper Rule Revisions, 6, Prepared for Jessica Gorges, USEPA, (Oct. 22, 2019), *available at* https://www.regulations.gov/document/EPAHQ-OW-2017-0300-0008, stating "[n]on-white race has been identified as a risk factor for elevated blood lead levels in numerous studies."

[61] Marshall et al., *Association of lead-exposure risk and family income with childhood brain outcomes*, 26 Nature Medicine 91, (Jan. 13, 2020) *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6980739/.

[62] 88 Fed. Reg. at 85,085.

[63] 88 Fed. Reg. at 85,083 (§ 141.92 (a)(1)).

E. Definition of Child Care Facility

We support EPA's proposed definition of a child care facility. All licensed child care facilities should be included in any testing program, including licensed child care homes. Several million infants and young children and their parents rely on child care homes;[64] while not all of these home child care providers are licensed, some states do license home child care facilities and it is important to protect these young children. Some of these home care facilities watch over infants, who if formula-fed, can receive 40 percent to 60 percent of their exposure to lead from drinking water, primarily tap water used to reconstitute formula.[65] It's vital that EPA's definition of a child care facility be as broad as possible to protect as many children and infants as possible.

F. Responses to EPA's Specific Requests for Comment

EPA has specifically requested comment on five elements of the school and child care facility provisions. Each is listed below along with a response, or wherein the above comments a response has already been given.

1. *Whether CWSs should be required to collect more samples and/or to sample more frequently in schools and child care facilities.*

EPA's proposed sampling program is wholly inadequate and should be replaced by a requirement that water systems install filters then conduct testing or conduct robust testing with installation of filters for outlets testing above 1 ppb. This is addressed throughout, but specifically in the introduction to this section. EPA should require twice a year sampling of every outlet in a school or child care center used for drinking, cooking or other human consumption, or if a system works with the facility to install a filtration station, should test it once annually to ensure it is working correctly.

2. *The proposed provision to allow States to issue waivers to community water systems from the requirement for lead sampling in schools and child care facilities during the five-year period after the LCRI compliance date if the facility was sampled for lead after January 1, 2021 but prior to the LCRI compliance date and the sampling otherwise meets the waiver requirements of § 141.92(h).*

We support a cutoff date of January 1, 2021 for a waiver for facilities with filter first programs.

3. *Whether or not to allow States to waive the requirements of § 141.92 for CWSs in schools and child care facilities that use and maintain filters certified to reduce lead, and if so,*

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[64] The National Survey of Early Care and Education found that there are three million children aged 0-5 years in child care homes. National Association for Family Child Care, *Family Child Care Research and Data,* (accessed Feb. 2, 2024), *available at* https://nafcc.org/our-work/public-policy-and-advocacy/research-resources/family-child-care-research-data/.

[65] EPA, *Basic Information about Lead in Drinking Water,* (accessed Feb. 2, 2024), *available at* https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

whether the waiver should only be allowed where schools and child care facilities are required by State or local law to install POU devices and maintain them.

The waiver should be limited to schools and child care facilities that are required by state or local law or school district requirements to install and maintain POU devices. These laws or requirements must be verified to meet certain minimum standards, including those contained in Michigan's filter first laws. EPA should also issue filter first guidance with public input. This is addressed in greater detail in section 4 above.

4. *The minimum requirements for States to provide a waiver (e.g., should the waiver be limited to locations where the filter use is required by State or local law; should the waiver be limited to locations where State or local law requires periodic sampling or testing to ensure proper filter use).*

Waivers should be limited to places where certified POU filters are installed, maintained properly, and tested at least once a year. This is addressed in greater detail in section 4 above.

5. *Whether EPA should require CWSs to make school and child care facility sampling results publicly available, and if so, how frequently and in what manner.*

EPA should require that all sampling results are made publicly available and disseminated by the water system in a manner calculated to reach parents and staff so that interested parties can identify the facility and related test results. Results above 1 ppb must be made available to parents, guardians, and employees. This is discussed further in section C.iv. above.

Section 10: The LCRI's CCT and WQP Provisions Must Be Strengthened

Corrosion control treatment (CCT) is an essential treatment technique in the LCRI because, as EPA concluded in the 1991 LCR, "most of the lead and copper found in drinking water is caused by corrosion of materials containing lead and copper in the distribution system and in the plumbing systems of privately owned buildings."[1] Corrosion control treatments are "technically and economically feasible" and "generally available for use," and "effective CCT reduces lead and copper from leaching into drinking water."[2] We support EPA's conclusion that CCT is feasible, available, and can be effective at reducing lead and copper levels at the tap when implemented properly.

CCT also has weaknesses as a treatment technique, particularly in the short- to medium-term after an action level exceedance. As EPA recognizes, thorough CCT studies may last for multiple years and implementation of CCT may take additional years.[3] CCT science is complex, and optimized CCT (OCCT) may be unique to each water system, such that attaining OCCT may require several rounds of iterative adjustments. Accordingly, as discussed elsewhere in these comments, after a lead action level exceedance, the best and most health-protective treatment technique is for a water system immediately to begin delivering point-of-use filters and replacement cartridges certified to remove lead (and/or copper, if applicable) to all customers at no direct cost to the customer on an ongoing basis. Filters provide immediate health protection and, along with robust, accurate public education, help fill the multi-year gap between an action level exceedance and implementation of effective, optimized CCT.

If EPA adopted a filtration-focused initial response to action level exceedances, CCT would still be important. Effective, optimized CCT would likely be the best and most economical long-term solution for most water systems. But, under this alternative approach, EPA could afford to give water systems and states more flexibility and breathing room to do careful, thoughtful CCT studies and, as needed, iterative optimization of CCT, because public health would be protected by filters while CCT is being optimized. Designed properly, a filter-focused response to action level exceedances could also better align incentives for water systems by relieving a water system of the duty to provide filters only when the system's tap sampling results show the system has optimized CCT. To be truly health protective, such an approach would need to adopt our recommendations, set forth elsewhere in these comments, for: (a) more robust tap sampling protocols,[4] (b) a more rigorous method for calculating action level exceedances, including a lower action level, a higher percentile, and procedures that require water systems to use their highest measured tap sampling results in the calculations,[5] (c) more thorough and accurate public education and outreach requirements,[6] and (d) a stricter standard for determining when a water system has optimized CCT.[7] However, we recognize that EPA has not chosen this alternative filter-focused approach to action level exceedances in the proposed LCRI. The remainder of this section generally assumes that EPA will maintain the regulatory

[1] 88 Fed. Reg. at 84,936 (quoting 56 Fed. Reg. at 26,479).
[2] 88 Fed. Reg. at 84,937.
[3] 88 Fed. Reg. at 84,937.
[4] *Supra* section 7.
[5] *Supra* sections 4 and 7.
[6] *Supra* section 8.
[7] *Infra* section 10(B).

approach in the proposed LCRI, in which CCT is a central pillar of the response to action level exceedances and must be implemented both quickly and effectively to protect public health, such that detailed requirements for CCT studies and implementation are needed.

In the LCRI, EPA is proposing various changes to CCT requirements. Some we support, including streamlining the rule to eliminate the LCRR's use of a lead trigger level for CCT requirements. However, many of EPA's proposed CCT changes weaken the rule, for example, by creating several new exceptions that allow water systems to avoid studying and installing CCT or re-optimized CCT. Many of these changes are purportedly justified by other elements of the LCRI that are stronger, such as the mandatory LSLR requirements and improved tap sampling procedures.[8] The fact that EPA is proposing to strengthen other aspects of the rule is not a reasonable or sufficient rationale for weakening and even backsliding on CCT requirements. For example, water systems without LSLs (as defined in the rule to exclude lead connectors) and GRRs generally will have no new obligations to remove LSLs, lead connectors, and GRRs, but will be allowed to take advantage of some of the weaker CCT requirements. Improved tap sampling is a particularly inadequate reason for weakening CCT requirements because tap sampling on its own does nothing to improve the safety of drinking water. The fact that more systems are likely to have action level exceedances under the LCRI, in part due to improved tap sampling, is a reason to require more robust CCT to address the hazardous conditions revealed by the sampling, not a reason to weaken or backslide on CCT requirements.

In addition, the LCRI as proposed would perpetuate and exacerbate the confusing web of interrelated regulatory provisions that address CCT requirements. There is a better approach. The LCRI's CCT provisions should be strengthened and simplified in at least the following ways:

- Eliminate the multiple exceptions that allow water systems to avoid studying and implementing CCT and re-optimized CCT in proposed section 141.81;

- Clarify the definition of OCCT in proposed section 141.2 and modify provisions that are inconsistent with the definition of OCCT in proposed sections 141.81(a) and (b);

- Strengthen CCT studies by requiring testing of orthophosphate over a wider range of concentrations, adding transparency requirements, and making other improvements in proposed section 141.82(c);

- Modify the procedures for designating OCCT for small and medium systems in proposed sections 141.81(d) and (e);

- Strengthen the CCT requirements that apply to wholesale and consecutive water systems;

- Expand water quality parameter monitoring requirements and require transparency for water quality parameter monitoring data;

- Strengthen the distribution system and site assessment requirements (formerly "find-and-fix") in proposed section 141.82(g) by adding requirements to provide a free filter and, if

[8] *See generally* 88 Fed. Reg. at 84,937-39.

applicable, fully replace the LSL at no expense to the homeowner, if an individual tap monitoring sample exceeds the lead action level;

- Create support and incentives to train CCT experts and share CCT expertise;
- Reduce the lead practical quantitation limit (PQL) to a lower value consistent with current science and laboratory methods

These necessary changes are discussed in greater detail below.

A. § 141.81(f): The five-year deferral of CCT actions fails to protect public health to the extent feasible, will not achieve EPA's stated goals, and must be eliminated or modified

In proposed section 141.81(f), EPA proposes "to allow a system with a lead action level exceedance to defer installing or reoptimizing OCCT if the system can replace 100 percent of its LSLs and GRR service lines within five years of the date the system first exceeds the lead action level."[9] As proposed, this section fails to protect public health to the extent feasible, will not achieve EPA's stated goals, would backslide from the previous regulations in violation of SDWA section 1412(b)(9),[10] and should be either eliminated or modified to provide a much more targeted incentive for accelerated LSLRs.

i. EPA's rationales for allowing a five-year deferral of CCT actions

EPA provides several justifications for proposed section 141.81(f). Primarily, EPA argues that it will spare water systems from conducting "costly and time-consuming" CCT studies and implementing the identified OCCT "when the identified treatment would not be tailored for the system's long-term distribution system conditions without LSLs."[11] EPA contends that "[f]ollowing 100 percent service line replacement, a study evaluating OCCT on current conditions in the system would be more appropriate," and that systems would have to have "no LSL, GRR, or unknown service lines remaining at the end of the five-year period" to be eligible for this deferral of OCCT.[12] EPA asserts that "[s]ystems would need to ensure they have access to replace all lead and GRR service lines in their inventories, and have identified all unknown service lines in their inventory" in order to take advantage of this incentive.[13] Elsewhere, EPA contends that "[t]o take advantage of this proposed pathway, systems are incentivized to find ways to obtain access to each lead and GRR service line to replace 100% of lead and GRR service lines within five years."[14] Unfortunately, these preamble assertions are not reflected in, and are contradicted by, the actual proposed regulatory text.

[9] 88 Fed. Reg. at 84,937.
[10] 42 U.S.C. § 300g-1(b)(9).
[11] 88 Fed. Reg. at 84,937.
[12] 88 Fed. Reg. at 84,938.
[13] 88 Fed. Reg. at 84,938.
[14] 88 Fed. Reg. at 84,922.

ii. Water systems taking advantage of the five-year CCT deferral would not actually be required to replace 100% of LSLs and GRRs

The proposed regulatory text of section 141.81(f) is inconsistent with EPA's rationales for this provision, because it does not actually require water systems to replace 100% of LSLs and GRRs within five years. Proposed sections 141.81(f)(1)(i)(A) and (B) require systems taking advantage of the five-year OCCT deferral to complete "the service line replacement requirements under § 141.84(d) within five years" of a triggering event (an action level or PQL exceedance).[15] Proposed sections 141.81(f)(2) and (3) also refer to the "service line replacement requirements under § 141.84(d)."[16] As discussed in more detail in Section 2(D)(iv) of these comments, proposed section 141.84(d) does not actually require 100% replacement of LSLs and GRRs. Instead, proposed section 141.84(d) requires replacement only of LSLs and GRRs "under the control of the water system," it allows water systems to require property owners to pay for the costs to replace the private side of a LSL or GRR, and it excuses water systems from replacing any LSL or GRR for which the property owner does not consent to the replacement after a "reasonable effort."[17] As a result, a water system could theoretically complete its LSLR requirements under proposed section 141.84(d) and not remove a single LSL or GRR, for example, if all property owners refused to pay for the private-side replacements. More likely, as discussed earlier in these comments, water systems completing the LSLR requirements of proposed section 141.84(d) will successfully replace some LSLs and GRRs but will leave in place an unknown, and potentially substantial number of LSLs and GRRs. Systems also are likely to leave in place any lead connectors that would not be included in the definition of lead service line. And, as discussed in section 2 of these comments, the LSLs, GRRs, and lead connectors left in place are likely to be disproportionately located in lower-wealth communities and communities of color.

The five-year deferral of OCCT in proposed section 141.81(f) is nonsensical in the absence of an enforceable requirement to replace all LSLs and GRRs without any exceptions or conditions. Unless EPA changes the definition of service lines under the control of water systems, as recommended elsewhere in these comments, there is a high likelihood that some LSLs, GRRs, and lead connectors will remain in place in a water system after the proposed section 141.84(d) LSLR program is completed. Thus, a CCT study using LSLs is likely to be necessary and highly relevant to designing and implementing OCCT even after the section 141.84(d) LSLR program is complete, and EPA's primary rationale for proposed section 141.81(f) lacks merit. Instead of sparing water systems from conducting a necessary CCT study using LSLs and implementing OCCT, the effect of proposed section 141.81(f) is likely to be a delay of the exact same CCT study by up to five years, subjecting consumers to non-optimized or non-existent CCT for up to an extra five years. Relatedly, as proposed, there is nothing in section 141.81(f) that "incentivize[s]" water systems "to find ways to obtain access to each lead and GRR service line to replace 100% of lead and GRR service lines within five years."[18] By incorporating the LSLR requirements of proposed section 141.84(d), including the section 141.84(d) exceptions that allow systems to leave LSLs and GRRs in place, proposed section

[15] 88 Fed. Reg. at 85,058.
[16] 88 Fed. Reg. at 85,058.
[17] 88 Fed. Reg. at 85,064.
[18] *Contra* 88 Fed. Reg. at 84,922.

141.81(f) provides no additional incentive for water systems to get access to all LSLs and GRRs. In fact, proposed section 141.81(f) may incentivize systems to do the minimal outreach required under proposed section 141.84(d), and to do it in a rushed and ineffective manner that leads to fewer LSLRs, in order to meet the five-year deadline in proposed section 141.81(f).

Even assuming that water systems will make their best efforts to obtain access and replace all LSLs and GRRs within five years, the structure of proposed section 141.81(f) means that a system's success in achieving 100% LSLR within five years cannot be known until the end of the five-year period. Even if a system meets the requirement to replace 20% of its LSLs and GRRs per year in the first few years, there is no way to guarantee that the system will complete 100% of LSLRs by the end of year five. As a result, a system might leave up to 20% (or more) of its LSLs and GRRs in service—potentially totaling hundreds or thousands or tens of thousands of service lines—and that outcome would not be knowable until the end of year five. Thus, even for water systems that have the best intentions, there is no mechanism to prevent proposed section 141.81(f) from creating a situation where a water system that exceeded the lead action level will delay CCT actions by five years only to have to undertake the exact same CCT actions it would have been required to take at the time of the original lead action level exceedance. That subjects water consumers to non-optimized CCT for up to an extra five years and the only "benefit" would be delaying CCT study costs for the water system.

iii. The five-year deferral fails to protect public health to the extent feasible in multiple ways

The conceptual design of proposed section 141.81(f) is flawed in several other ways as well.

a. Implementing OCCT does not always require five years

The five-year CCT deferral in proposed section 141.81(f) is based on EPA's assumption that selecting and implementing OCCT generally requires about five years,[19] but that assumption is inconsistent with the proposed LCRI text. For example, proposed sections 141.81(d) and (e) would allow some water systems to recommend OCCT and allow states to specify OCCT for such systems without requiring a CCT study in some circumstances.[20] As EPA states, "EPA is proposing changes to expedite when States can approve CCT re-optimization treatment changes for systems" based on a water system's "past CCT study results" so as to "expedite treatment changes" and "allow[] the benefits of treatment modification to be realized sooner."[21] For systems that can re-optimize CCT or implement CCT without a CCT study, the five-year delay of CCT in proposed section 141.81(f) is illogical and serves only to delay health-protective CCT changes that could be feasibly implemented in less than five years.

[19] 88 Fed. Reg. at 84,937.
[20] *See* 88 Fed. Reg. at 85,057-58 (proposed §§ 141.81(d)(1)(iii)-(iv), (d)(2); 141.81(e)(1)(iii), (e)(2)). The LCRR also allows for faster selection and implementation of CCT in some circumstances. 86 Fed. Reg. at 4285-86.
[21] 88 Fed. Reg. at 84,938.

b. The five-year deferral of OCCT fails to account for the widely varying numbers of LSLs and GRRs in water systems, even in systems of similar size

Proposed section 141.81(f)'s five-year deferral of CCT actions does not account for the widely varying numbers of LSLs and GRRs in water systems, even in systems serving similarly sized populations. As a result, it needlessly would allow water systems to defer CCT actions for five years even if the water system has the resources to complete LSLRs much faster. If proposed section 141.81(f) is retained, it should be amended to include a minimum annual LSL replacement rate to help ensure that systems complete LSLRs as quickly as possible and defer CCT actions for the shortest period possible.

In Exhibit 1 on pages 3 to 6 of EPA's LCRI Technical Support Document, EPA collected multiple examples of cities with similar population sizes that had total numbers of LSLs and GRRs that vary by an order of magnitude or more. For example, among large systems, Washington, D.C., had 28,000 LSLs and GRRs, which is two orders of magnitude more than the slightly larger (by population) city of Tucson, which had only 600 LSLs or GRRs. Among medium-size systems, Bloomfield, NJ, had 500 LSLs or GRRs compared to 5,000 in Battle Creek, MI, despite similar population sizes.[22] Overall, EPA estimates that the vast majority of water systems nationwide—about 96.5 percent—have fewer than 1,000 LSLs and GRRs and provides examples of multiple systems of varying sizes that were able to replace all LSLs in one or two years.[23]

The failure of proposed section 141.81(f) to account for these differences is problematic because it would allow some water systems to defer CCT actions for five years even when they have the resources to complete LSLRs in fewer than five years. Even at a 20% annual replacement rate, many water systems with low quantities of LSLs and GRRs would be required to replace comparatively few service lines per year, despite the water systems having similar resources to systems that would be required to replace an order of magnitude more service lines per year. That would allow some water systems to defer CCT actions for five years even if the system has the resources to replace all of its LSLs and GRRs in fewer than five years. Using one of the above examples, if a water system serving a city similar to Battle Creek would have to replace 1,000 LSLs per year to take advantage of proposed section 141.81(f), a water system serving a similarly sized city that has one-tenth as many LSLs and GRRs should be required to conduct replacements at a similar rate and replace all of its LSLs and GRRs within one year. To address this problem, the rate of required LSLRs in proposed section 141.81(f) should be at least 20% of all LSLs and GRRs in the system or at least 500 LSLRs per year, whichever is higher, and States should have authority to require a faster rate if the State deems it feasible. This would ensure that all systems replace LSLs and GRRs at a reasonable, expeditious, and feasible rate. For example, Newark, New Jersey, was able to replace about 100 LSLs *per day* once its LSLR

[22] Other examples of cities with similar populations and vastly differing numbers of LSLs and GRRs from Exhibit 1 in the LCRI Technical Support Document include: Sioux Falls, SD (198,524 people, 230 LSLs/GRRs) and York, PA (197,177 people, 2,300 LSLs/GRRs); Quincy, MA (101,636 people, 285 LSLs/GRRs) and Flint, MI (98,310 people, 12,035 LSLs/GRRs); and Framingham, MA (72,362 people, 184 LSLs/GRRs) and Madison, WI (71,160 people, 8,000 LSLs/GRRs).

[23] 88 Fed. Reg. at 84,912.

program was fully operational,[24] so a minimum rate of 500 LSLRs *per year* would be equivalent to the rate that Newark achieved *per week*. Exhibit 1 on pages 3 to 6 of EPA's LCRI Technical Support Document provides many more examples of water systems of various sizes that successfully replaced at least 500 LSLs per year, including Cincinnati, OH; Washington, DC; Pittsburgh, PA; Trenton, NJ; Aurora, IL; Kalamazoo, MI; Lansing, MI; Flint, MI; Madison, WI; Galesburg, IL; and Stoughton, WI. At least two other systems with fewer than 500 total LSLs—Mayville, WI, and Village of Montgomery, IL—completed all of their replacements in a single year. These results show that a minimum annual replacement rate of 500 LSLs per year is feasible.

c. Proposed section 141.81(f) lacks necessary criteria for determining which systems are eligible to defer CCT actions

As written, proposed section 141.81(f) applies to systems with LSLs or GRRs "that can complete the service line replacement program within five years", but it contains no criteria for determining whether it is reasonable to expect that a system "can complete" the LSLR program in five years.[25] The first milestone is replacement of 20% of LSLs and GRRs after the first year.[26] It appears that systems can self-select into the five-year CCT deferral, and there is no opportunity to enforce non-compliance until after the first year. This would allow *all* water systems to defer CCT actions for at least one year, regardless of whether a system can comply with the requirements of proposed section 141.81(f). For example, the proposal does not require water systems to demonstrate that they have funding or access to replace LSLs and GRRs within five years, not even for removal of those service lines that would have to be replaced in the first year to comply with proposed section 141.81(f). If a system does not have access and funding lined up for the first year of LSLRs, it is implausible that the system will be able to comply with proposed section 141.81(f). But, as written, there is nothing to stop such a system from attempting (and failing) to comply with proposed section 141.81(f) and deferring CCT actions for at least one year. Without more stringent criteria for water systems to be eligible for the five-year CCT deferral, proposed section 141.81(f) is likely to function as a de facto delay of at least one year for all systems that would otherwise be required to take CCT actions under proposed section 141.81(a), (d), and (e). Such a result would not protect health to the extent feasible, but rather would increase risk for a water system's consumers.

d. Proposed section 141.81(f) unduly and unreasonably delays feasible public health protections that could otherwise be achieved through OCCT

Proposed section 141.81(f) is also flawed because it fails to adequately protect public health using feasible CCT during the five-year LSLR period and during the subsequent five-year period in which a water system would have to implement or re-optimize CCT (unless it is deemed to have OCCT). Notably, proposed section 141.81(f) applies only to systems that are required to implement or re-optimize CCT because the system exceeded an action level or, for large systems, the lead PQL. Thus, it applies only to systems for which CCT is not deemed optimized (as defined by EPA in proposed section 141.81(b)) and for which there is a credible

[24] *See* 88 Fed. Reg. at 84,914.
[25] 88 Fed. Reg. at 85,057 (proposed § 141.81(f)).
[26] *Id.* (proposed § 141.81(f)(1)(ii), (3)).

risk of harm from elevated lead and/or copper levels. If CCT is not optimized, consumers are not only at risk from LSLs and GRRs, but also at risk from lead and copper leaching from premise plumbing, fixtures, and lead connectors.[27] Proposed section 141.81(f) unreasonably delays feasible improvements to CCT that would benefit all water consumers, including those whose sources of lead exposure from premise plumbing and/or lead connectors are not addressed fully by the five-year LSLR program.

By delaying CCT improvements for five years, proposed section 141.81(f) risks exposing vulnerable children to inadequately treated drinking water for most of the period when the children are most vulnerable to lead exposure. For example, consider a tenant living in a rental property served by an LSL who comes home with a formula-fed newborn child at the same time the water system announces a lead action-level exceedance. Under proposed section 141.81(f), the water system could defer taking any steps to optimize CCT until the child is five years old and, if a subsequent CCT study and implementation process lasts for five years (consistent with EPA's assumptions), defer implementation of optimized CCT until the child is ten years old. Given the permitted five-year time frame for full LSLR, the water system could also defer attempting to replace the child's LSL until the child is at least four years old (while providing water with inadequate CCT that entire time) and then, if the landlord refuses to pay for the LSLR or refuses access, not replace the LSL. As a result, for most or all of the years when the child is most vulnerable to the effects of lead poisoning, the proposed LCRI would allow the water system to deliver water without optimized CCT via LSLs, increasing the risk that the child will be exposed to unsafe amounts of lead in drinking water. Similarly, a child growing up in a household without an LSL, whose lead exposure is primarily from a lead connector and/or premise plumbing, would have to wait up to ten years for optimized CCT. In either scenario, the effect of proposed section 141.81(f) is to unduly delay implementation of OCCT by five years, which risks unnecessarily exposing an entire cohort of children to unsafe levels of lead in drinking water and fails to protect public health to the extent feasible.

As discussed elsewhere in these comments, we strongly urge EPA to require water systems to deliver filters to all customers following any action level exceedance. However, if EPA does not accept that proposal and if proposed section 141.81(f) is retained, at a minimum this provision should be strengthened to require that systems provide effective point-of-use filters certified to remove lead to all households (or at least to all locations with an LSL, GRR or unknown service line) during the five-year delay period and during any subsequent CCT study and implementation.

iv. If it is retained, proposed section 141.81(f) should be narrowed to defer only CCT studies focused on LSLs

EPA's primary rationale for proposed section 141.81(f) is "to allow systems to avoid the costly and time-consuming process of conducting a harvested LSL pipe loop CCT study and installing the corresponding OCCT when the identified treatment would not be tailored for the system's long-term distribution system conditions without LSLs."[28] This purpose could be

[27] *See generally* 88 Fed. Reg. at 84,897 ("Lead can enter drinking water when plumbing materials that contain lead corrode, especially where the water is highly acidic or has a low mineral content that corrodes pipes and fixtures. The most common sources of lead in drinking water are lead pipes, faucets, and fixtures.")
[28] 88 Fed. Reg. at 84,937.

achieved by narrowly exempting water systems from conducting a harvested LSL pipe loop CCT study and requiring water systems that take advantage of proposed section 141.81(f) to pursue CCT actions focused on the anticipated distribution system conditions without LSLs and GRRs. Specifically, water systems utilizing proposed section 141.81(f) could be treated as systems without LSLs for purposes of proposed sections 141.81(d) and (e) and could be required to initiate or reoptimize CCT based on analyses that assume no LSLs or GRRs in the distribution system (e.g., pipe loop studies conducted on other materials in the system). However, if the water system fails to remove 100% of LSLs, GRRs, and lead connectors within five years—*with no exceptions for access, control, funding, or any other reasons*—the full provisions of proposed sections 141.81(d) and (e) should apply, including the requirements for a harvested LSL pipe loop CCT study (plus a requirement for immediate delivery of filters to all LSL and GRR houses until all LSLs and GRRs are gone, if not already required).

This narrower approach would better achieve EPA's stated purposes for proposed section 141.81(f) and better protect public health. It would allow water systems to conduct less costly CCT studies in the near term, would not delay the results of those CCT studies and implementation of OCCT, and would create an incentive for water systems to actually remove 100% of LSLs, GRRs, and lead connectors in order to avoid the costs of having to do a harvested LSL pipe loop CCT study.

This narrower approach would be similar to the way that Denver, Colorado, is balancing lead service line replacements and corrosion control. Denver is working to replace all lead service lines at no direct cost to the customer, providing free water filters to all customers suspected of having a lead service line until six months after the service line is replaced, and optimizing corrosion control based on the non-lead distribution system that will remain in place after the LSLR program is complete.[29] Notably, Denver Water has been able to pay for this multi-faceted approach to lead reduction using a fairly typical suite of funding sources available to water systems, including federal funding, water rates, bonds, and other revenue sources.[30]

v. Recommendations regarding proposed section 141.81(f)

For all of these reasons, proposed section 141.81(f) is misguided, backslides from the CCT requirements in the LCR and LCRR, and should be removed from the LCRI. It fails to protect public health to the extent feasible, will not generate the benefits that EPA attributes to it, and creates perverse incentives and mechanisms for water systems to do less to solve the problem of lead in drinking water.

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[29] *See* U.S. EPA, Region 8, In re: Denver Water, Colorado, Variance under SDWA section 1415(a)(3) (Nov. 30, 2022), *available at* https://www.denverwater.org/sites/default/files/variance-order-2022.pdf.

[30] *See* Denver Water, Lead Reduction Program, Resource Materials, Federal Funding, https://www.denverwater.org/your-water/water-quality/lead/multimedia (accessed Jan. 31, 2024). We note that continuing to provide filters for at least six months, or longer, after an LSLR is essential to protect public health because lead can accumulate in scales in plumbing downstream of the LSL and those downstream scales can continue to be a source of lead after the LSL is removed. *See* Schock, M. R., et al., *Importance of Pipe Deposits to Lead and Copper Rule Compliance*. Journal AWWA (2014), 106(7), E336-E349, https://doi.org/10.5942/jawwa.2014.106.0064.

If proposed section 141.81(f) is retained, it must be narrowed and strengthened in at least the following ways:

a. Instead of exempting water systems from proposed section 141.81(d) or (e), proposed section 141.81(f) should allow a water system with LSLs or GRRs to be treated as if it does not have LSLs or GRRs for purposes of sections 141.81(d) or (e). Water systems should not be exempted from sections 141.81(d) or (e) entirely, and CCT improvements should be implemented as soon as possible.

b. A water system that seeks to use proposed section 141.81(f) should be required to demonstrate to the State, and the State should certify, that the water system:
   i. has the necessary control and access (legal and physical) to replace all LSLs and GRRs in its system, and
   ii. has funding available immediately to complete at least the 20% of LSLRs required in the first year, and
   iii. has a credible, likely-to-succeed plan for obtaining funding for all five years of the LSLR program.

c. The rate of required LSLRs should be at least 20% of all LSLs and GRRs in the system or at least 500 LSLRs per year, whichever is higher, and States should have authority to require a faster rate if the State deems it feasible.

d. If EPA rejects our recommendation to require water systems to distribute filters after all lead action level exceedances (see section 4 of our comments for more detail), filter distribution should be required for any water system deferring CCT actions under proposed section 141.81(f). Specifically, such water systems should be required to deliver point-of-use filters certified to remove lead to all consumers, or at least to all consumers served by an LSL or GRR, at no cost to the consumer. This filter provision requirement should apply at least until the LSL or GRR is removed, at which time all requirements following service line replacements should apply.

B. §§ 141.2, 141.81(a), (b): The LCRI's definition of OCCT should be clarified and provisions inconsistent with the OCCT definition should be modified

The LCRI would define "[o]ptimal corrosion control treatment (OCCT)" as "the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the water system to violate any national primary drinking water regulations,"[31] but this should be modified in the final rule. Due to the differing chemistries of lead and copper, it is generally not possible to "minimize" lead and copper

[31] 88 Fed. Reg. at 85,054 (§ 141.2).

concentrations simultaneously,[32] nor should that be the LCRI's goal. The MCLG and action level for copper is appropriately set at 1.3 mg/L, and this provides a reasonable target for copper concentrations at users' taps. By contrast, the MCLG for lead is zero, and lead concentrations should be as low as possible. The definition of OCCT should be modified to say that OCCT is "the corrosion control treatment that minimizes lead concentrations at users' taps and meets the copper MCLG at users' taps . . . ." This change would ensure that OCCT protects public health to the extent feasible by keeping copper levels within a safe range and minimizing lead levels as much as possible.

In addition, the last phrase of the OCCT definition should be modified to ". . . while ensuring that the whole system maintains simultaneous compliance with all national primary drinking water regulations" to ensure that water systems place equal priority on all national primary drinking water regulations, including the LCRI. Lead crises in the past, including in Washington, DC, have been exacerbated by water systems selecting treatment options that prioritize compliance with MCLs over compliance with the LCR. This proposed change to the OCCT definition could help to clarify that systems must balance water treatments to attain compliance with all national primary drinking water regulations, including treatment technique-based regulations such as the LCRI.

The LCRI's provisions for "deeming" a water system to have OCCT are inconsistent with its definition of OCCT and must be changed. Specifically, proposed section 141.81(b)(1) would allow medium water systems without CCT and all small water systems to be "deemed to have OCCT" if the system does not exceed the lead action level during two consecutive six-month tap monitoring periods.[33] Not exceeding the lead action level is not synonymous with minimizing lead concentrations at users' taps. This provision does not comply with SDWA's requirement to protect health to the extent feasible because there may be feasible CCT options that would minimize lead concentrations to levels substantially lower than the action level. Compliance with the lead action level is measured using the 90th percentile lead sampling result. The LCRI's proposed provision for deeming small and some medium water systems to have OCCT means that such a water system could have compliance sample results with any conceivable lead value in 10 percent of its samples and still be considered to have OCCT. Nothing could be further from the truth. Nevertheless, we recognize that there is a need for some reasonable threshold to determine if a system has OCCT. For all water systems, that threshold should be provided by proposed section 141.81(b)(3), which deems a water system to have OCCT if its 90th percentile tap sampling results do not exceed the copper action level and are at or below the practical quantitation limit (PQL) for lead. Proposed section 141.81(b)(1) and all cross-references to it should be deleted from the LCRI, and proposed section 141.81(b)(3) should provide the sole basis for deeming a system to have OCCT.

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[32] *See, e.g.*, Michael R. Schock, *et al.*, *Effect of pH, DIC, Orthophosphate and Sulfate on Drinking Water Cuprosolvency*, EPA Office of Research and Development, EPA/600/R-95/085 (June 1995), https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=23251&Lab=NRMRL ("Indeed, a response that effectively controls lead corrosion might exacerbate copper corrosion."); Donna M. Dodrill, Marc Edwards, *Corrosion control on the basis of utility experience*, Journal AWWA, 87:7, 74-85 (July 1995), https://doi.org/10.1002/j.1551-8833.1995.tb06395.x.

[33] 88 Fed. Reg. at 85,056.

The LCRI's provisions that allow a system with CCT to re-optimize CCT only once if certain conditions are met are also in conflict with the LCRI's definition of OCCT. Proposed section 141.81(a) would allow water systems with CCT to be excused from completing the re-optimization steps in proposed section 141.81(d) if the system has re-optimized CCT once after the LCRI's compliance date, is meeting its State-designated water quality parameters, and continues to operate and maintain CCT.[34] Functionally, these provisions would mean that a water system that repeatedly or even perpetually violates an action level would be treated as having OCCT, and conflates the concept of OCCT with meeting State-designated water quality parameters. These provisions are highly problematic, should be modified in the final LCRI, and are addressed in more detail below in part 10(E)(ii) of these comments.

C. § 141.82(c): The LCRI's provisions regarding the conduct of CCT studies should be strengthened

There are multiple opportunities to strengthen the LCRI's CCT study requirements to help ensure that CCT studies identify feasible and effective OCCT. EPA should make at least the following seven modifications.

i. CCT studies should be required to test more orthophosphate concentrations

Proposed sections 141.82(c)(1)(iii)-(iv) and 141.82(c)(2)(iii)-(iv) require CCT studies to evaluate the addition of an orthophosphate-based corrosion inhibitor at a concentration sufficient to maintain two specified orthophosphate residual concentrations (as PO_4) in all test samples: 1 mg/L and 3 mg/L.[35] These concentrations may be useful as a starting point, but there is no scientific basis for limiting CCT studies and OCCT to only two potential concentrations of orthophosphate. Based on myriad, system-specific water chemistry factors, the optimal orthophosphate concentration for a particular water system may be higher or lower than this range of 1-3 mg/L. The factors include pH, alkalinity, calcium and aluminum levels, TOC, and others.[36]

As EPA noted in the LCRR, "[t]he high-end dose in the corrosion control study of 3 mg/L as PO_4 is at the low end of the typical range used in the United Kingdom where 95 percent of public water supplies are dosed with orthophosphate."[37] For example, in north west England, by 2005 orthophosphate treatment "was applied to 98% of the region, [with] 75% dosed at 2.0 mg P/L, 18% at 1.5 mg as P/L, [and] 5% at 1.0 mg P/L."[38] As discussed in the LCRR, an orthophosphate concentration of 1.0 mg/L as P is equivalent to 3.0 mg/L as PO_4,[39] so the vast majority of north west England is treated with a dose of 6.0 or 4.5 mg/L as PO_4. As another

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[34] *Id.* (§ 141.81(a)(1)(i)(A)-(C), (2)(i)(A)-(C), (3)(i)(A)-(C)).
[35] 88 Fed. Reg. at 85,059.
[36] *See, e.g.*, Michael R. Schock & Darren A. Lytle, *Ch. 20 Internal Corrosion and Deposition Control*, in Am. Water Works Ass'n, *Water Quality & Treatment*, 20.1, 20.54 – 20.63 & fig. 20-23 (corrected) (6th ed. 2010).
[37] 86 Fed. Reg. 4198, 4210 (Jan. 15, 2021) (citing Hayes and Hydes, 2010).
[38] P.T. Cardew, *Measuring the benefit of orthophosphate treatment on lead in drinking water*, 07.1 J. of Water & Health 123, 123 & figs. 4, 5 (2009). *See also* C.R. Hayes, et al., *Experience in Wales (UK) of the optimization of ortho-phosphate dosing for controlling lead in drinking water*, 06.02 J. of Water & Health 177, 181 (2008) (finding that, in Wales, "[t]he average dose of ortho-phosphate needed to achieve the [Drinking Water Inspectorate] criterion ranged from 0.6 to 1.5 mg/L (P) with an average of 0.9 mg/L (P) across the 39 dosing schemes.").
[39] 86 Fed. Reg. at 4210.

example, the 2021 CCT study for Flint, Michigan, ultimately found that the "lowest total lead levels were at an orthophosphate dose of 4.0 mg/L PO_4," and recommended that Flint continue to use an orthophosphate dosage of about 3.5 mg/L (as PO_4), both above the range required by the LCRI.[40]

Instead of evaluating only two fixed, arbitrary orthophosphate doses, a water system should determine the optimal orthophosphate concentration for itself by finding the orthophosphate concentration above which the lead response flattens out and there is a clear point of diminishing additional corrosion control benefits (while ensuring that the overall treatment also allows the system to meet all other national primary drinking water standards). In testing various orthophosphate dosages, water systems also may need to adjust other water quality parameters, such as by removing hardness or changing away from aluminum-containing coagulant chemicals that can consume some of the phosphate.

Proposed sections 141.82(c)(1)(ii) and (c)(2)(ii), which require systems to evaluate "[t]he addition of an orthophosphate- or a silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective corrosion inhibitor residual concentration in all test samples" are not sufficient, for at least two reasons. First, a water system can comply with these provisions by testing only a silicate-based corrosion inhibitor. Recent research shows that silicate-based corrosion treatments do not really work for minimizing lead releases and any benefits are due to elevation of pH from the silicate chemicals.[41] Second, these provisions are vague and require only that the tested chemical achieve an "effective" corrosion inhibitor residual concentration. Without clearer requirements to test multiple dosages and a clearer requirement that the "effective" dose must minimize lead concentrations (consistent with the OCCT definition), these provisions are inadequate to ensure that systems conduct sufficiently rigorous, thorough studies to determine OCCT.

These sections should be modified as follows. First, proposed section 141.82(c)(1), which specifies CCT study requirements for systems without CCT, should explicitly allow and encourage systems to test orthophosphate concentrations above, below, or between the required concentrations of 1 and 3 mg/L (as PO_4). Second, proposed section 141.82(c)(2), which specifies CCT study requirements for systems with CCT that are required to re-optimize CCT, should require systems to iteratively test higher orthophosphate concentrations in increments no larger than 1 mg/L (as PO_4), until the system finds the concentration above which additional

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[40] Cornwell Engineering Group, Corrosion Control Study Pipe Loop Study Expanded Executive Summary, Prepared for City of Flint, at 18 (Jan. 18, 2021), *available at* https://www.michigan.gov/-/media/Project/Websites/flintwater/documents/2021/Executive-Summary-Flint-Pipe-Loops-dated-011821.pdf?rev=97a478f748dc47068b257e601d70937e.

[41] *See, e.g.*, Bofu Li et al., *Effectiveness of Sodium Silicates for Lead Corrosion Control: A Critical Review of Current Data*, Environ. Sci. Technol. Lett. (2021) 8, 11, 932–939, https://pubs.acs.org/doi/10.1021/acs.estlett.1c00671 ("We find that silicate treatment generally accompanied higher lead release than the equivalent (pH-matched) system without sodium silicate (0.5–21.5 times higher). Moreover, silicate treatment was inferior to orthophosphate treatment; sodium silicate accompanied 1.0–65 times more lead release than the equivalent orthophosphate-treated system. Sodium silicate's positive effect on pH, then, appears to be the main driver of lead release control."); Bofu Li et al., *Controlling lead release due to uniform and galvanic corrosion — An evaluation of silicate-based inhibitors*, J. of Hazardous Materials, (2021) Vol. 407, 124707, https://doi.org/10.1016/j.jhazmat.2020.124707 ("Independent of pH, silicates did not consistently mitigate lead release due to either uniform or galvanic corrosion.").

orthophosphate provides diminishing additional corrosion control benefits or until the system determines that orthophosphate is not an effective CCT due to its particular water chemistry and characteristics.[42] It is appropriate to require systems to test a broader range of orthophosphate concentrations, and to do so in a more rigorous, iterative fashion when a system is re-optimizing CCT because the need to re-optimize CCT indicates that a system has not achieved optimal CCT despite having conducted an earlier CCT study. Going forward, any initial CCT study compliant with the LCRI will include the required testing of orthophosphate resulting in residual concentrations of 1 and 3 mg/L (as PO_4). Thus, a re-optimization study must consider a broader range of orthophosphate concentrations to try to find a truly optimal dosage for the system, rather than repeating the same study with the same limitations that would be likely to reach the same inadequate outcome as the original CCT study.

ii. CCT studies should measure additional water quality parameters that are necessary for determining OCCT

Proposed section 141.82(c)(4)[43] lists water quality parameters that must be measured before and after evaluating a corrosion control treatment, and it specifically requires measuring only lead, copper, pH, alkalinity, orthophosphate, and silicate. In addition to those analytes, the list of required water quality parameters for CCT studies should be expanded to include:

a. Dissolved inorganic carbon (DIC)
b. Hardness (calcium and magnesium)
c. Dissolved oxygen
d. pH
e. Silica
f. Oxidation-reduction potential
g. Ammonia, chloride, and sulfate
h. Natural organic matter (NOM)
i. Iron, aluminum, and manganese.

Including these additional water quality parameters will provide essential data for interpreting the results of CCT studies and appropriately selecting OCCT.[44] For example, a synthesis of research on control of lead in drinking water, authored by EPA experts, shows that lead solubility varies substantially based on pH and dissolved inorganic carbon, and that "considerably higher dosages of orthophosphate are needed in waters with higher carbonate contents."[45]

[42] Personal comms. with Michael Schock and Elin Betanzo.
[43] 88 Fed. Reg. at 85,059.
[44] *See generally* Michael R. Schock & Darren A. Lytle, *Ch. 20 Internal Corrosion and Deposition Control*, in Am. Water Works Ass'n, *Water Quality & Treatment*, 20.1, 20.54 – 20.63 (6th ed. 2010) (discussing how various water quality parameters affect lead solubility and corrosion control treatments).
[45] Michael R. Schock & Darren A. Lytle, *Ch. 20 Internal Corrosion and Deposition Control*, in Am. Water Works Ass'n, *Water Quality & Treatment*, 20.1, 20.55 – 20.56 & figs. 20-21, 20-22, 20-23 (corrected) (6th ed. 2010).

iii. Only CCT studies compliant with the LCRI should be used for determining OCCT

Proposed section 141.82(c)(3) allows water systems to evaluate corrosion control treatments using "analyses based on documented analogous treatments with similar size systems that have similar water chemistry and similar distribution system configurations."[46] Relatedly, proposed section 141.81(d)(1)(iv) contemplates that systems required to re-optimize CCT may rely on the system's past corrosion control treatment study results. We recognize and support the desire to allow water systems and States to select and implement OCCT based on existing, reliable CCT studies, if such studies are available. However, these provisions create a risk that water systems will rely on inaccurate, outdated studies and that CCT mistakes from the past will be perpetuated. In any circumstance in which a water system or a State is permitted to rely on a preexisting CCT study, the LCRI should stipulate that the preexisting study must have complied with the LCRI's requirements for CCT studies. One way to achieve this would be to allow water systems and States to use only "reliable" preexisting CCT studies, and to define a "reliable CCT study" as one that complies with the LCRI's requirements for CCT studies. In addition, there may be circumstances in which it is protective of public health for a water system and State to rely on a prior CCT study to select and implement changes to the system's CCT, such as to increase the dose of orthophosphate if the prior study suggests that may be effective. However, a preexisting CCT study should not excuse a water system from any requirements to complete a new CCT study unless the CCT study complies with the LCRI's requirements and there is no reason to believe that the water chemistry in the water system has changed substantially after completion of the preexisting CCT study.

iv. The LCRI should include transparency requirements for all CCT studies

At a minimum, all water systems carrying out a CCT study should be required to (1) hold at least one public meeting to provide information and receive feedback during the CCT study, and (2) to make the final CCT study publicly available in electronic form on the internet. These requirements would facilitate information sharing between water systems and would make it easier for some water systems to evaluate CCT using "analyses based on documented analogous treatments with similar size systems that have similar water chemistry and similar distribution system configurations."[47] Transparency requirements also would allow consumers to better understand their water systems' CCT studies and results and would allow independent technical experts to evaluate and provide feedback on CCT studies, which would likely lead to better CCT studies and more effective OCCT.

v. Metal coupon studies should be eliminated

The LCRR's limitations on metal coupon studies were an improvement on the 1991 LCR, but did not go far enough. Proposed section 141.82(c)(3) should be modified to eliminate the option of using metal coupon tests alone as CCT studies. Metal coupon studies on their own do not provide sufficiently reliable and accurate information to determine OCCT.

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[46] 88 Fed. Reg. at 85,059.
[47] 88 Fed. Reg. at 85,059/3 (§ 141.82(c)(3)).

Coupon studies do not consider the potential impact of water quality changes on the release of existing lead scales. Modifying the pH from the level the premise plumbing and distribution system have been exposed to for many years or even decades cannot be simulated by fresh coupons because they do not contain the scales that naturally build up over time under prevailing conditions. While pH and other water quality parameters impact lead solubility, it also impacts the stability of the scale and chlorine in the distribution system. As a result, in some water systems, water quality changes such as lowering the pH have caused particulate lead spikes from the destabilization or solubilization of the existing pipe scales that will remain in LSLs, brass and galvanized plumbing. This is why coupon studies are not adequate for quantifying lead release and changes that can result from a change in CCT.[48]

The purpose of a lead coupon is to reflect the effectiveness of corrosion inhibitors on new lead pipes. Brass, galvanized, and copper-with-lead-solder coupons would reflect lead release from new premise plumbing materials. But none of them would represent the current state of these materials in the distribution system. EPA has previously expressed concerns about conducting CCT studies that assume a coupon would reflect distribution system conditions.[49] In short, coupon studies are unlikely to reveal much that could not be deduced by an experienced CCT expert based on water system chemistry and existing scientific literature.

vi. The LCRI should account for lead dioxide (PbO_2) scales as a possible CCT and as a possible impediment to safe orthophosphate use

In water systems that do not currently use phosphate-based CCT, lead dioxide (PbO_2) scales may be acting to control lead release.[50] Scientific research, and the experience of cities such as Newark, demonstrates that adding phosphate to such a system, or a part of a system with extensive PbO_2 scales, can destabilize these scales resulting in high lead-in-drinking-water levels that may last for months to years and can include the release of Pb(II) phosphate nanoparticles that can pass through point-of-use filters.[51] In the LCRI, or in accompanying guidance, EPA should publicize the risks of trying to convert to phosphate-based treatment in a system with extensive PbO_2 scales and clarify that water systems and States may determine that adjusting water chemistry to maintain PbO_2 scales is an effective, acceptable OCCT. In particular, for

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[48] Letter from Candice Bauer, Manager, Ground Water and Drinking Water Branch, U.S. EPA Region 5, to Eric Oswald, Director, Drinking Water and Env't Health Div., MI Dep't of Env't, Great Lakes, & Energy, at 2 (Nov. 23, 2021), https://www.epa.gov/system/files/documents/2021-12/mi_benton-harbor_cct-study-plan-feedback_ltr_2021-11-23.pdf.

[49] *See generally id.*

[50] *See, e.g.,* Michael R. Schock & Darren A. Lytle, *Ch. 20 Internal Corrosion and Deposition Control*, in Am. Water Works Ass'n, *Water Quality & Treatment*, 20.1, 20.55 (6th ed. 2010) ("Low lead levels at modest to high DIC were also found to be attributable to the discovery that many of these moderate- to high-alkalinity water systems are likely protected by PbO_2 deposits . . . .").

[51] *See, e.g.*, Lytle, D. A. et al., *Lead Particle Size Fractionation and Identification in Newark, New Jersey's Drinking Water*, Environ Sci Technol (2020), 54(21), 13672-13679, https://pubs.acs.org/doi/10.1021/acs.est.0c03797, *manuscript available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7702024/pdf/nihms-1645231.pdf; Michael K. DeSantis, et al., *Orthophosphate Interactions with Destabilized PbO_2 Scales,* Env't Sci. & Tech. (2020) 54 (22), 14302-14311, https://pubs.acs.org/doi/pdf/10.1021/acs.est.0c03027; Glen R. Boyd, et al., *Effects of Changing disinfectants on lead and copper release*, Journal AWWA (Nov. 2008) 100:11, 75-87, https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/j.1551-8833.2008.tb09775.x; Darren A Lytle & Michael R. Schock, *Formation of Pb(IV) oxides in chlorinated water*, Journal AWWA (Nov. 2005) 97:11, 102-114, https://awwa.onlinelibrary.wiley.com/doi/abs/10.1002/j.1551-8833.2005.tb07523.x.

chlorinating systems, the LCRI should add evaluation of PbO_2 scale and pH adjustment as a corrosion control treatment option, and such systems should be required to evaluate the effectiveness of chlorination to maintain PbO_2 scale before switching to orthophosphate. If a chlorinating system proposes to switch to orthophosphate, the system should be required to make publicly available a study demonstrating that the switch will not substantially increase lead in drinking water, including an evaluation of the potential for creation of Pb(II) phosphate nanoparticles.

vii. DBP pre-cursor removal as CCT

In the LCRI, EPA should consider adding disinfection byproduct (DBP) precursor removal as a corrosion control treatment because it allows high chlorine and high pH that may maintain PbO_2 scale while maintaining compliance with DBP MCLs. If chlorine disinfection is maintaining PbO_2 scales and low lead levels, but a water supply is dangerously close to the DBP MCLs, it is appropriate to study DBP precursor removal as an alternative to changing disinfectant and adding a corrosion inhibitor. Changing disinfectant and adding orthophosphate has been associated with destabilized PbO_2 scales because of disinfectant change.[52] A water system should be able to study whether DBP pre-cursor removal would allow the water system to maintain lead control via PbO_2 scale in lieu of adding or studying an orthophosphate inhibitor while making other long-term treatment changes to maintain DBP compliance.

D. § 141.81(d) & (e): The LCRI's procedures for designating OCCT for small and medium systems should be modified

The LCRI, in proposed sections 141.81(d)(1)(iii) and 141.81(e)(1)(iii), would require medium water systems without lead service lines and all small water systems to recommend optimal or re-optimized CCT within six months after an exceedance of the lead or copper action level. It is not clear that small and medium systems have sufficient technical capacity to make a technically and scientifically sound CCT recommendation within six months. State drinking water programs are more likely to have corrosion control experience and expertise, including from working with other similar water systems in the State. EPA should consider modifying this requirement to require such water systems to compile and provide specified information to the State within a shorter time frame, such as within 45 or 90 days, to facilitate a well-informed State designation of OCCT in Step 2 of the process (proposed section 141.81(d)(2), (e)(2)). For example, instead of recommending OCCT, small and medium water systems could be required to compile and provide to the State within 45 days: (1) all WQP monitoring results from the past ten years, including all available WQP data from the distribution system and from source water monitoring, (2) all lead and copper tap monitoring sampling results from the last ten years, including all tap sampling data for lead and copper collected for any purpose that are in the control of the water system, (3) a compilation of any known CCT studies and/or designated OCCT for water systems with similar characteristics (e.g., based on geographic proximity, source water, distribution system characteristics, etc.), and (4) any other information within the water system's control that may be relevant to the State's designation of OCCT.

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[52] Michael K. DeSantis, et al., *Orthophosphate Interactions with Destabilized PbO_2 Scales,* Env't Sci. & Tech. (2020) 54 (22), 14302-14311, https://pubs.acs.org/doi/pdf/10.1021/acs.est.0c03027.

In addition, EPA should conduct, or require States to conduct, systematic corrosion control studies using typical, representative source waters across the country (or their state) to provide a robust baseline of CCT studies that States and water systems could use to extrapolate to treatment requirements for individual small- and medium-size systems. In many cases, especially for systems that lack LSLs and GRRs, CCT experts can already predict CCT options that are likely to be effective based on a water system's characteristics and chemistry and the substantial scientific literature on CCT. Representative CCT studies would complement existing information to make CCT selections even more streamlined. Ideally, the LCRI should require States to conduct such representative CCT studies as a condition of primacy. In addition or, at a minimum, in the alternative, EPA should consider conducting these studies or funding states to conduct them separate from LCRI requirements.

E. § 141.81: The LCRI should require more water systems to conduct CCT studies and implement OCCT

As drafted, the LCRI perpetuates a dizzyingly complex decision tree for determining which water systems are required to conduct CCT studies and implement OCCT, and it adds new exceptions and loopholes that fail to protect public health. The LCRI should be simplified and strengthened by requiring more water systems to conduct CCT studies and implement OCCT.

Overall, the LCRI requires water systems to complete CCT steps, including a CCT study, when triggered to do so by an action level exceedance or, for large systems, when the 90th percentile tap sampling monitoring exceeds the lead PQL. These triggers, and multiple exceptions to them, are embedded in a complex web of cross-referencing provisions in proposed sections 141.81(a)-(g).

i. More water systems should be required to conduct CCT studies

A fundamental problem with the LCRI's approach to CCT is that all CCT obligations are only triggered by an action level exceedance (or, for large systems, a lead PQL exceedance). That approach is problematic because of the length of time it takes to complete a corrosion control study. As EPA summarizes, "[i]t generally takes approximately five years to complete the CCT evaluation and installation process: 30 months to construct a pipe rig and conduct a treatment study followed by 30 months to install the State-approved OCCT and an additional one year to conduct follow-up monitoring."[53] That means that, after an action level or PQL exceedance, consumers generally are left to wait for about five years before getting any benefits from CCT as a treatment technique. And, even then, it typically takes additional months or years for the CCT to work as designed, for example, through the formation of new scales within the water distribution system.

A feasible and more health-protective approach would be to require all water systems, without any exceptions, to complete at least Steps 1 through 4 of proposed section 141.81(d) (for systems with CCT) or Steps 1 through 4 of proposed section 141.81(e) (for systems without CCT). That would result in every water system having State-designated OCCT. The most health-protective, feasible approach would be for all water systems then to be required to install and

[53] 88 Fed. Reg. at 84,937.

maintain the OCCT, with an ongoing duty to re-optimize CCT if the water system's 90th percentile tap sampling results exceed the lead PQL or the copper action level (see part 10(B) of these comments). But even if water systems were required only to implement the State-designated OCCT after an action level exceedance (or, for large systems, a lead PQL exceedance), that would still be far more health protective than what the LCRI proposes. EPA's own estimates show that completing the CCT study ahead of time would reduce the time lag before implementing CCT by up to about 30 months, allowing water systems to implement OCCT about twice as fast. Thirty months—about two-and-a-half years—represents a substantial portion of the period when a young child is most susceptible to lead poisoning. Reducing the time to implement OCCT after an action level or PQL exceedance by 30 months would provide far better protection for consumers and is a feasible way to make CCT a more effective treatment technique.

In the alternative, if the LCRI retains a triggering condition for CCT studies, the appropriate trigger for all water systems should be 90th percentile tap monitoring results that exceed the lead PQL or the copper action level. Exceeding either of these thresholds indicates an unsafe level of lead and/or copper in at least 10 percent of sampled households, and water systems should begin CCT preparations immediately. Exceeding either the lead PQL or the copper action level should be sufficient to require a water system to complete at least Steps 1 through 4 of proposed section 141.81(d) (for systems with CCT) or Steps 1 through 4 of proposed section 141.81(e) (for systems without CCT). The most health-protective, feasible approach would be for any such system to be required to implement the State-designated OCCT as well. But, even if the action level is retained as the triggering event for small and medium water systems to implement CCT, all systems with 90th percentile tap monitoring results that exceed the lead PQL or the copper action level should be required to start preparing for a possible action level exceedance to minimize the duration following an action level exceedance during which the system exceeds the action level and does not have OCCT.

At a minimum, to facilitate regulatory flexibility, proposed section 141.81(a) should be modified to allow a State to require any water system to study and/or install CCT at any time and for any reason. This addition would ensure that primacy States reserve such authority for themselves in their regulations and would facilitate State interventions in unusual circumstances. For example, a State should be able to require a water system to study and install CCT if the State concludes that there is a problem with lead or copper in the system's water notwithstanding the system's 90th percentile tap monitoring results (which might be missing, inaccurate, incomplete, or otherwise erroneous).[54] Moreover, as EPA is aware, some states have "no more stringent than federal law" clauses, making explicit authorization for such state actions important.

ii. All systems with CCT should have an ongoing duty to re-optimize CCT after action level exceedances

For water systems of all sizes with CCT, the LCRI would require a system that exceeds either the lead or copper action level to complete the re-optimized OCCT steps in proposed

[54] For example, EPA ordered emergency actions in Clarksburg, West Virginia, based on individual sampling results and other circumstances even though there had not yet been a formal action level exceedance.

section 141.81(d) after the first action level exceedance.[55] Thereafter, a water system would be excused from completing the re-optimization steps if the system has re-optimized once after the LCRI's compliance date, is meeting its State-designated water quality parameters, and continues to operate and maintain CCT.[56] EPA justifies this exception to the re-optimization requirement by arguing that continued action level violations may be the result of factors other than the performance of the CCT.[57] EPA also asserts that systems with repeated action level exceedances would be excused from re-optimizing more than once "unless required by the State."[58]

There are several problems with this provision. First, it assumes that a water system and State properly identified the single optimal CCT for the system during the one re-optimization process. That assumption ignores the reality that CCT is a complex science and that achieving OCCT may require multiple rounds of iterative adjustments to find the CCT that truly minimizes lead concentrations at the tap system-wide. For example, on January 9, 2019, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) told Benton Harbor to implement corrosion control treatment prior to studying it or testing it. The selected inhibitor was initiated despite skepticism from the EGLE manager and a contradiction with EPA's CCT guidance manual. Benton Harbor had to continue increasing its orthophosphate dose for several years until the 90th percentile lead level finally began to decrease in late 2021. It also ignores a variety of circumstances that would indicate a new re-optimization study is needed, such as the possibilities that the initial re-optimization study was conducted poorly and reached erroneous results, that CCT science may have advanced since the time of the initial re-optimization study, or that the system's source water quality or treatment may have changed.

Second, EPA's rationale for this provision—that repeated action level exceedances may result from factors other than the performance of CCT—is at odds with EPA's rationale for setting the lead action level at 0.010 mg/L. EPA states that, in setting the lead action level, "EPA's primary consideration was the finding that an action level at 0.010 mg/L is supported by past CCT performance data as being generally representative of OCCT,"[59] and asserts that "an action level of 0.010 mg/L would ensure the treatment technique of CCT is feasible for small and medium systems."[60] EPA should stand by its determination that the lead action level is feasible for systems of all sizes and representative of OCCT, and should require systems with CCT that exceed an action level to try again and to continue improving their CCT until it is truly optimized and, at a minimum, achieves compliance with the action level, or until the State determines that nothing more can be done. (And, as discussed throughout these comments, any time there is an action level exceedance, water systems should be required to deliver certified lead reducing filters to all customers while CCT is being evaluated and implemented, and filters may be the only solution if a system truly has OCCT yet continues to violate an action level.) Any decision that nothing more can be done to optimize CCT in a water system that repeatedly exceeds an action level should be made by the State based on the specific circumstances of the particular water system, not determined in the abstract by a national regulation.

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[55] 88 Fed. Reg. at 85.056 (§ 141.81(a)(1)(i), (2)(i), (3)(i)).
[56] *Id.* (§ 141.81(a)(1)(i)(A)-(C), (2)(i)(A)-(C), (3)(i)(A)-(C)).
[57] 88 Fed. Reg. at 84,937.
[58] *Id.*
[59] 88 Fed. Reg. at 84,939.
[60] 88 Fed. Reg. at 84,943.

Third, as drafted, proposed section 141.81(a), does not explicitly allow a State to require a water system with CCT that exceeds the lead action level to re-optimize CCT. For large systems, under proposed section 141.81(a)(1)(ii), a State may require a re-optimization process if a system exceeds the lead PQL but does *not* exceed the lead or copper action level. But there is no explicit provision in proposed section 141.81(a)(1)(i), (2)(i), or (3)(i) allowing a State to require multiple re-optimizations for a system of any size that has CCT *and* repeatedly exceeds the lead or copper action level. This reinforces the need, identified above in these comments, to add a provision to proposed section 141.81(a) allowing a State to require CCT steps at any time for any reason.

For systems with CCT that repeatedly exceed either the lead or copper action level, the default assumption in the LCRI that CCT is already optimized should be reversed. Instead, by default, a system with CCT that repeatedly exceeds an action level should be assumed not to have OCCT and should be required to complete the re-optimization process in proposed section 141.81(d), unless and until the State determines that no further optimization of CCT is possible. One mechanism to achieve this would be to require systems with CCT that have repeated action level exceedances to initiate the steps in proposed section 141.81(d) but starting with Step 1(iv) and Step 2 (proposed sections 141.81(d)(1)(iv) and 141.81(d)(2)). That would allow water systems with repeated action level exceedances to recommend CCT modifications based their past CCT study results and require the State to either require a new CCT study or to designate (or redesignate) re-optimized CCT for the system.

In the alternative, at a bare minimum, proposed sections 141.81(a)(1)(i), (2)(i), and (3)(i) must be modified to include limits on how long a system with recurring action level exceedances can avoid doing a re-optimization study. EPA should draft the CCT provisions of the LCRI with an eye on long-term implementation, including during the period after mandatory lead service line removals during which the LCRI may still be in effect. As proposed, the LCRI could lead to the absurd result of water systems continuing to use ineffective CCT for decades, long after all lead service lines have been replaced and despite recurring action level exceedances. Even under EPA's rationale for limiting repeated re-optimization studies, there should come a point when water systems that repeatedly violate an action level are no longer assumed to have, or treated as if they have, OCCT. To avert this outcome, proposed sections 141.81(a)(1)(i), (2)(i), and (3)(i) should be modified at a minimum to include specific time limits that ensure that a preexisting re-optimization study is not outdated and to place limits on how many monitoring periods of action level exceedances are allowed. Specifically, we recommend that systems be allowed to defer further re-optimization studies only if the system's preexisting re-optimization study is less than five years old and for no more than two consecutive six-month monitoring periods with action level exceedances. A new re-optimization study should be required of all systems with CCT if either of those conditions is not met because it would indicate that the preexisting CCT study may be outdated or that there may be pervasive, continuing problems with the system's CCT. We recommend these thresholds because they would require a system to conduct no more than two re-optimization studies over the next 10 years during the mandatory LSLR program and would require new re-optimization studies by systems with chronic, ongoing action level exceedances that may be indicative of ineffective, non-optimized CCT. In doing so, these thresholds would account for the burdens of repeated CCT studies, especially during intensive LSLR efforts, while doing more to protect public health to the extent feasible by ensuring that water systems with inadequate CCT are not allowed to continue using inadequate CCT indefinitely.

iii. Medium and small systems should not be excused from the consequences of exceeding an action level

Proposed section 141.81(g) should be deleted from the LCRI. As drafted, proposed section 141.81(g) applies to small and medium systems without CCT that exceed the lead and/or copper action level and are required to complete the CCT steps in proposed section 141.81(e).[61] If such a system subsequently does not exceed the lead and copper action levels for two consecutive six-month tap monitoring periods, the system is allowed to stop the CCT process after Step 2 (stopping before completing the CCT study in Step 3) or after Step 4 (stopping before installing OCCT in Step 5). EPA does not offer any substantive explanation or justification for proposed section 141.81(g), other than noting that the concept is carried over from the LCRR.[62]

Proposed section 141.81(g) defeats the purpose of using the action levels to trigger initial CCT obligations for small and medium systems. In proposing the LCRI's lead action level, EPA stated that "EPA's primary consideration was the finding that an action level at 0.010 mg/L is supported by past CCT performance data as being generally representative of OCCT"[63], and concluded that "an action level of 0.010 mg/L would ensure the treatment technique of CCT is feasible for small and medium systems."[64] Having concluded that the lead action level is generally feasible and achievable for small and medium systems, there is no reason to give small and medium systems a free pass after an action level exceedance. Even a single action level exceedance is evidence that a water system does not have OCCT, and such water systems should not be excused from studying and implementing OCCT even if their later tap monitoring results are below the action level.

As drafted, proposed section 141.81(g) creates a strong, perverse incentive for small and medium systems that exceed an action level to attempt to game the monitoring program to bring their 90th percentile monitoring results below the action level, regardless of whether those results are truly representative of system-wide water quality. For example, within the bounds of allowable changes to a system's monitoring program, a system might attempt to select different monitoring sites that are anticipated to have lower lead and/or copper concentrations or attempt to sample many additional sites that are anticipated to have lower lead and/or copper concentrations to move the 90th percentile value even if nothing actually changes in the water system.

As a general matter, there is no reason to believe that action level exceedances will typically be self-correcting. Plumbing tends to corrode more over time, not less. A reduction in lead compliance sampling results from one monitoring period to the next that lacks an identified scientific mechanism for creating that reduction cannot be considered a correction to the water quality problem. One possible justification for proposed section 141.81(g) is that the mandatory 10-year LSLR requirement may support an optimistic hope that action level exceedances in systems with LSLs and GRRs will be corrected by the LSLR requirements. If that is EPA's

[61] 88 Fed. Reg. at 85,058.
[62] 88 Fed. Reg. at 84,937. The LCRR summarized this provision but did not explain or justify it. *See* 86 Fed. Reg. at 4209.
[63] 88 Fed. Reg. at 84,939.
[64] 88 Fed. Reg. at 84,943.

rationale, it should be explained and proposed section 141.81(g) should, at a minimum, be narrowed to apply only under the following circumstances: (1) to small and medium systems that have LSLs and GRRs; (2) when the action level exceedance is driven entirely or primarily by fifth liter samples from LSLs and GRRs, not first liter samples from premise plumbing; and (3) for no longer than the 10-year period that corresponds with the mandatory LSLR requirements. These narrower conditions would ensure that proposed section 141.81(g) applies only to systems for which there is a conceivably plausible expectation that LSLRs may resolve the initial action level exceedance.

More broadly, in considering whether to retain or modify proposed section 141.81(g), EPA should keep in mind how it will work in the future, long after the 10-year mandatory LSLR requirements are completed, when there would be little reason to expect that anything meaningful will change within a water system between monitoring periods (unless the system implements CCT or makes other major changes to the system or its source water). EPA should also keep in mind its conclusion that the vast majority of water systems have zero or fewer than 1,000 LSLs, and so action level exceedances in many systems will be driven by issues unrelated to LSLs and that phenomenon will become even more widespread as systems complete the mandatory LSLR requirement. When a small or medium water system exceeds the lead or copper action level, there is no reason to excuse the system from studying and implementing CCT in the absence of evidence or a reasonable belief that something else has changed to meaningfully improve the safety of the system's water.

Proposed section 141.81(g) is also unnecessary because proposed section 141.93 creates flexibility options for small systems that would otherwise be required to study and implement CCT under proposed section 141.81. Rather than creating multiple avenues for small systems to evade studying and implementing CCT, the only exception for systems required to study and implement CCT should be the small system compliance flexibility options in proposed section 141.93 (subject to the recommendations we provide in section 6 of these comments).

For these reasons, proposed section 141.81(g) should be deleted from the LCRI. In the alternative, at a minimum, proposed section 141.81(g) should be modified to require small and medium systems to complete their CCT study through Step 4, the State designation of OCCT. If proposed section 141.81(g) is retained, it should only allow small and medium systems to defer implementation of their State-designated OCCT by allowing them to pause the CCT process before Step 5. As discussed in more detail in part 10(E)(i) of these comments, completing the CCT study through Step 4 would allow a water system that later exceeds an action level again to implement OCCT up to about 30 months faster than if the system has to start from scratch, and would help to reduce the lengthy period of time between an action level exceedance and the implementation of OCCT, which in turn would better protect public health. Also, as discussed above, if the intent of proposed section 141.81(g) is to allow for the possibility that LSLRs will resolve an action level exceedance, additional requirements should be added to ensure that proposed section 141.81(g) applies only to systems with LSLs or GRRs, only during the period of mandatory LSLRs, and only when the system's initial action level exceedance is caused by fifth liter samples from the LSLs and GRRs, not by first liter samples from premise plumbing.

iv. Re-optimization requirement for systems currently using a polyphosphate or a polyphosphate blend for CCT

Proposed section 141.81 should be modified to require all systems, of any size, that currently use a polyphosphate or a polyphosphate blend as their CCT to complete the re-optimization process in proposed section 141.81(d), without any exceptions, if such a system has a lead action level exceedance. As EPA experts explained in a synthesis chapter about corrosion control, "[i]n both theory and practice, polyphosphate chemicals have been shown to be detrimental to lead control when all the important factors have been isolated in the tests. Some of the apparently successful applications of polyphosphate-lead corrosion control may actually be caused by pH adjustment or the reversion of a fraction of the polyphosphate to a protective orthophosphate form."[65] As a result, if a system that is currently relying on a polyphosphate or polyphosphate blend for CCT exceeds the lead action level, it must be required to complete the re-optimization process consistent with the LCRI's requirements.

F. § 141.81(g) & 141.90(a)(4): Requirements for systems planning a treatment or source change

As widely reported in numerous cities, including Flint, MI, Washington, DC, Pittsburgh, PA, University Park, IL, and others, changes in a water system's source water or water treatment can result in catastrophic corrosion control failures and massive public health crises due to lead in drinking water. Because EPA is expected to soon require certain additional measures to control disinfection byproducts though revised microbial and disinfection byproduct rules, additional widespread changes in water treatment can be expected. A change in disinfection practices or treatment changes intended to reduce disinfection byproduct levels (such as pH adjustments or certain technologies used for DBP precursor removal) may have a profound impact on the effectiveness of corrosion control, as we saw in Washington, DC[66] and Newark, NJ.[67] Proposed sections 141.81(g) and 141.90(a)(4) require water systems to notify the State and receive State approval before adding a new water source or making long-term changes in treatment.[68] These provisions are necessary and a good first step but, alone, they are insufficient to ensure effective CCT and protect public health to the extent feasible. These provisions should be strengthened in at least four ways.

First, the LCRI should have mandatory minimum requirements for the information and studies that a water system must conduct and submit to the State prior to adding a new water source or making long-term treatment changes. These studies and information should include, at a minimum: (1) WQP data for the existing water source(s) and any proposed new water

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[65] Michael R. Schock & Darren A. Lytle, *Ch. 20 Internal Corrosion and Deposition Control*, in Am. Water Works Ass'n, *Water Quality & Treatment*, 20.1, 20.58 (6th ed. 2010)

[66] *See, e.g.*, Rebecca Renner, *Plumbing the Depths of DC's Drinking Water Crisis*, Environ. Sci. Technol. 2004, 38, 12, 224A–227A, https://doi.org/10.1021/es040525h.

[67] *See* Lytle, D. et al., *Lead Particles Size Fractionation and Identification in Newark, New Jersey's Drinking Water.* Env. Sci. Technol. 54(21):13672-13679, (2020), https://doi.org/10.1021/acs.est.0c03797; CDM Smith, City of Newark Lead and Copper Rule Compliance Study, Newark, NJ, Pequannock WTP Corrosion Control Review And Recommendations – Final, City of Newark Department of Water and Sewer Utilities, March 15, 2019, *available at* https://www.nrdc.org/sites/default/files/pequannock_water_treatment_plant_corrosion_control_review_and_recommendations-newark-20190315.pdf.

[68] 88 Fed. Reg. at 85,059, 85,080.

source(s); (2) an evaluation of the impact of the water source or treatment change on simultaneous compliance with all national primary drinking water standards; and (3) unless the change is prompted by the results of a CCT study conducted consistent with proposed section 141.82(c), the water system should be required to complete and submit a CCT study consistent with proposed section 141.82(c) that evaluates CCT using the proposed new water source and/or new treatments using plumbing materials harvested from the distribution system.

Second, a State's approval of any water source or treatment changes should require a water system to conduct standard tap monitoring under proposed section 141.86(c) and standard WQP monitoring under proposed section 141.87(b). A water system that had previously qualified for reducing monitoring under proposed sections 141.86(d) and 141.87(c) must be required to re-qualify for the reduced monitoring after adding a water source or changing treatment.

Third, a water system proposing to add a water source or change treatment should be required to notify its customers at the same time it notifies the State, hold at least one public meeting to present information and answer questions about the proposed change(s), and make publicly available the results of the studies and information regarding the proposed change(s) that are submitted to the State.

Fourth, a water system changing its water source or treatment should provide certified lead reducing filters to all households until two standard tap monitoring periods demonstrate compliance with the lead action level, to verify that there is no increase in lead release due to the change.

By making these changes, the LCRI would help to prevent catastrophic failures of OCCT before they occur, which is a feasible way to protect public health from foreseeable, preventable crises.

G. § 141.82(g): CCT requirements for consecutive and wholesale systems must be strengthened

The LCRI's CCT requirements for consecutive and wholesale water systems are inadequate and should be strengthened. As proposed, the LCRI includes language from the LCRR stating that "the continued operation and maintenance of OCCT and re-optimized OCCT requirements apply to consecutive systems, including those distributing water that has been treated for corrosion control by another system."[69] This lone reference to consecutive systems is inadequate to address lead and copper issues that can arise in consecutive systems.[70]

Many water systems across the United States have dependency relationships where a wholesale system treats water, in most cases to SDWA standards, then sells the water to a consecutive system that distributes the water to customers. The treating water system may or may not have its own customers. Treatment is designed to address source water contaminants; water quality changes as it moves through distribution systems due to chemical and microbial

[69] 88 Fed. Reg. at 84,937, 85,060 (proposed section 141.82(g)).
[70] *See generally* Elin Betanzo, Safe Water Engineering, LLC, *Corrosion Control Treatment and Compliance Requirements for Wholesale/Consecutive System Relationships Are Needed in the Lead and Copper Rule Improvements* (2023) (from which much of this section of these comments is adapted).

reactions, and the potential for contamination to enter the distribution system. In this case, the treating water system determines the fundamental water quality in the wholesale/consecutive systems, but the purchasing system is responsible for compliance with distribution system drinking water standards, including the Lead and Copper Rule. Splitting a physically interconnected water system into different parts and dividing compliance responsibility according to ownership complicates the implementation of and compliance with drinking water regulations. The lack of requirements and triggers to assess source water treatment can limit the public health protection available to residents in the consecutive water system(s).

EPA is considering regulations (The Water System Restructuring Assessment Rule[71]) that could greatly increase the number of wholesale/consecutive system relationships in the United States, and the LCRI must do more to account for and plan for these relationships. The LCRI, as proposed, does not create any responsibilities for wholesale water systems to evaluate and implement optimal corrosion control treatment when a purchasing consecutive system has a lead or copper action level exceedance. Corrosion control is a crucial treatment technique in the LCRI for reducing lead in drinking water. The failure to impose any CCT requirements on wholesale water systems means that residents and consumers in purchased water systems are not receiving the same public health protection as in treating water systems.

A recurring example of the LCR corrosion control challenge is apparent in Michigan, where the Michigan Department of Environment, Great Lakes, and Energy (EGLE) has not required the Great Lakes Water Authority (GLWA) to evaluate corrosion control treatment despite several lead action level exceedances in consecutive systems in the Detroit area. GLWA has no service connections, so it is not required to collect compliance samples under the LCR, LCRR, or the proposed LCRI. Consequently, GLWA cannot experience its own lead action level exceedance that would trigger corrosion control treatment requirements. The GLWA system serves nearly 4 million people and includes up to 330,935 lead service lines based on July 2023 reporting for Michigan's Preliminary Distribution System Inventory. As December 2023, 15 of these systems have a 90th percentile lead value that exceeds 10 ppb representing up to 139,018 LSLs and a population of 1.2 million. Three of these communities would be eligible for an extension of the 10-year LSLR mandate under the LCRI proposal. Several of these communities have had more than one lead action level exceedance over the past 4 years.[72]

As the rules require, and would continue to require under the proposed LCRI, if a purchasing system has an action level exceedance, the purchasing system is responsible for compliance at the purchased system level. There is no exploration of treatment improvements to reduce lead levels in the wholesale system. In Michigan, this typically means that the system with a lead action level exceedance continues sampling and, due to the sporadic nature of lead release, the lead action level exceedance appears to go away after one or two compliance

[71] The America's Water Infrastructure Act (AWIA), Public Law 115–270, 132 Stat. 3765 et seq., October 23, 2018, section 2010(a), requires EPA to promulgate a regulation that authorizes State primacy agencies to require an assessment of restructuring options for a public water system that frequently violates health-based standards and is unwilling or unable to take feasible corrective actions to return to compliance, or that has unsuccessfully attempted feasible and affordable actions to return to compliance. *See also* EPA, The Water System Restructuring Assessment Rule, *last updated* Aug. 10, 2023, https://www.epa.gov/dwcapacity/water-system-restructuring-assessment-rule.
[72] Elin Betanzo, Safe Water Engineering, LLC, Analysis of Michigan LCR compliance data (2024) (unpublished analysis on file with the authors).

sampling periods despite no change in water quality. Even though the lead action level exceedance ends in one community, a new one frequently starts in another purchasing community because there has been no fundamental change in the water chemistry. As a result, an opportunity to protect public health by addressing water chemistry problems throughout the entire reach of the wholesale system is lost and any action level exceedances are addressed piecemeal, if at all, by the purchased water systems. In short, the existing and proposed corrosion control triggers fail to protect public health to the extent feasible when there is a wholesale/consecutive system relationship. In this case, the lack of CCT requirements would prevent public health protection to at least 1.2 million people that live in communities that currently exceed the 10 ppb proposed lead action level.

The LCRI should clearly address the responsibility of treating systems to evaluate and improve corrosion control treatment when a purchasing system has an action level exceedance. The LCRI must clarify a treating system's responsibility for providing water quality that meets all SDWA requirements to its consecutive systems, and it must clarify that the treating water system must evaluate or re-optimize corrosion control treatment if there is an action level exceedance in any one of its consecutive, purchased water systems. Further, the rule must be clear that a wholesale system and reviewing primacy agency must consider all consecutive systems when considering changes to corrosion control treatment. They also must have a mechanism for considering, evaluating, and addressing multiple purchasing consecutive systems with action level exceedances, given that action level exceedances can occur in different locations during different compliance sampling periods. The LCRI must clarify the responsibilities of wholesale systems to implement optimal corrosion control treatment and clarify the responsibilities of both wholesale and consecutive systems for addressing action level exceedances in a consecutive, purchasing system. These gaps in requirements for wholesale/consecutive system relationships must be addressed in the LCRI before EPA takes any further actions to increase the number of wholesale/consecutive system relationships in the United States.

H. § 141.87: Water quality parameter monitoring should be expanded, simplified, and more transparent

The LCRI's Water Quality Parameter (WQP) Monitoring provisions (proposed section 141.87) include at least two provisions that better protect public health compared to the LCR. The LCRI reaffirms EPA's decision in the LCRR to eliminate triennial reduced WQP monitoring because it is too infrequent.[73] We agree that triennial WQP monitoring is not sufficient for any water system to support water quality management decisions. In addition, the LCRI would "require all medium systems with CCT to monitor for water quality parameters regardless of the lead and copper levels, except those medium systems whose 90th percentile lead level is at or below 0.005 mg/L."[74] We generally support expanding WQP monitoring to more water systems because it equips systems with data to detect potential problems with water chemistry or CCT as early as possible, enabling water systems to try to avert water quality problems and action level

[73] 88 Fed. Reg. at 84,944.
[74] 88 Fed. Reg. at 84,944.

exceedances before they occur. Despite these improvements, there are several ways that the LCRI's WQP monitoring provisions should be further strengthened and simplified.

First, WQP monitoring requirements should be expanded and simplified to include all systems, regardless of lead and copper levels. WQP data is basic information about the water being distributed in a water system that all systems should have and evaluate regularly. Having regularly collected, baseline WQP data before any action level exceedance or any other triggering event would help water systems and States watch for evidence of water chemistry changes that could develop into problems and would help them diagnose what may have caused or contributed to an action level exceedance if one occurs.

Second, for transparency, public accountability, and information sharing, water systems and States should be required to share publicly and proactively all WQP monitoring results by posting them conspicuously online in an easy-to-use electronic spreadsheet or database format and by submitting the results to EPA for EPA to post on its website. This would allow consumers to better understand the characteristics of their water. It also would facilitate information sharing, including about OCCT, among water systems by helping water systems identify other systems with similar water chemistry.

Third, the entry point sampling requirements should be expanded to include samples representative of each water source both before and after treatment. As proposed, the LCRI only requires entry point samples after treatment.[75] Failing to require WQP monitoring for untreated source water omits an important source of information that is highly relevant to designing optimal CCT and evaluating the possible effects of any future proposed changes in source water.

Fourth, the WQP monitoring parameters specified in proposed sections 141.87(a)(1)(ii), (a)(2)(ii), and (b)(2)(i) and 141.82(J)(1)(i) should be expanded. As drafted, the required parameters include, at most, pH, alkalinity, orthophosphate and/or silica if used as an inhibitor, and any other parameters specified by the State.[76] At a minimum, calcium, conductivity, and temperature should also be required parameters at all WQP monitoring sites for all systems because each of them can affect lead release and the selection of CCT, and many water systems will only monitor parameters that are mandatory.[77] Calcium is important to measure because it may be necessary to adjust water hardness in order to make pH adjustments or to allow orthophosphate treatment to work. Calcium reacts with a variety of phosphates and can form scales or deposits in pipes and affect complexation by polyphosphates, which are important to understand when designing CCT. Also, calcium is an integral part of many "lead orthophosphate scales" where Ca-substituted lead(II) phosphate solid phases are the norm, and where hard waters cannot tolerate substantial pH adjustment without serious scaling issues.[78] Conductivity is an important and easy to measure surrogate that can detect mixing of waters, detect chloride contamination of water supplies, and provide evidence of seasonal changes in major water quality constituents or degradation of source waters. All of those factors can directly or indirectly

[75] 88 Fed. Reg. at 85,078 (§ 141.87(a)(2)(i)).
[76] 88 Fed. Reg. at 85,077, 85,078 (§ 141.87(a)(1)(ii), (a)(2)(ii), (b)(2)(i)).
[77] *See generally* Michael R. Schock & Darren A. Lytle, *Ch. 20 Internal Corrosion and Deposition Control*, in Am. Water Works Ass'n, *Water Quality & Treatment*, at 20.80 tbl. 20-3 (6th ed. 2010).
[78] Michael R. Schock, personal comm.

impact lead release and effectiveness of CCT.[79] Temperature affects lead and copper release and has a major role in the solubility and release of lead and other scale components.[80] Relatedly, EPA should consider simplifying proposed section 141.87 to have a single, expanded list of required WQP parameters applicable to all WQP monitoring sites for all systems, rather than having three separate lists of required WQP parameters for distribution system samples, entry point samples, and initial tap sampling.

Fifth, corrosion control is most effective when water quality is consistent both at the entry point to the distribution system and throughout the distribution system. Although WQPs are not indicators of lead or copper release, it is far easier to measure WQPs frequently to ensure water quality consistency than it is to measure lead in residents' homes. For this reason, in addition to increasing the WQP parameters collected on a regular basis, we agree with EPA's proposal to require more frequent WQP testing. Further, to maximize the utility of the WQP data, at least one round of WQP testing should always occur during the lead and copper compliance sampling period so that lead and copper release data can be analyzed in conjunction with contemporaneous WQP data.

Sixth, the LCRI would continue the LCR's requirement that states set minimum WQPs for systems with OCCT. We are aware of water systems that are capable of maintaining minimum WQPs, but still have wide variations in WQPs at the entry point that could limit the effectiveness of CCT.[81] In proposed section 141.82(f),[82] EPA should require states to set both a lower and upper bound for WQPs to ensure consistent water quality and to ensure optimal CCT conditions are maintained.

Finally, in the LCRI, EPA proposes to maintain Optimal Water Quality Parameter limits and ranges as the primary compliance method for large public water systems and smaller systems employing corrosion control treatment. The proposed LCRI (and the LCRR and the LCR before it) fail to cite peer-reviewed scientific evidence that water quality parameters (as opposed to actual lead and copper tap monitoring results) will accurately predict whether or not a water system meets or exceeds the lead and copper action levels. To protect public health, EPA should make tap monitoring for lead and copper the primary, enforceable compliance method for all water systems.

I. § 141.82(j): Distribution system and site assessment (formerly find-and-fix)

The LCRI would largely maintain the "find-and-fix" provisions from the LCRR, albeit under the name "distribution system and site assessment" to reflect that "the 'fix' to address [a lead action level] exceedance [at a particular tap sampling site] may be outside of the control of the water system."[83] The concept of requiring water systems to follow up on and attempt to

[79] *Id.*
[80] *Id.*
[81] Examples include Benton Harbor, MI, and Jackson, MS. Elin Betanzo, Safe Water Engineering, personal comm.
[82] 88 Fed. Reg. at 85,060.
[83] 88 Fed. Reg. at 84,944; *see generally id.* at 85,061 (§ 141.82(j)).

address individual tap samples that exceed the lead action level is laudable. However, the design of this provision is problematic and it should be modified and strengthened in several ways.

First, proposed section 141.82(j) takes a corrosion control treatment approach to a tap sample that exceeds the lead action level, which does nothing to address the immediate, near-term risks of high lead concentrations in drinking water. Any amount of lead in drinking water is unsafe, and lead concentrations above the action level are especially hazardous to health. Any time a tap sample exceeds the lead action level, the water system should be required to provide to the affected customer(s) a filter certified to remove lead at no cost to the customer, which should be provided at the same time that the sampling results are shared with the customer under proposed section 141.85(d); (2) determine if the service line is a LSL or GRR and/or if there is a lead connector; and (3) if so, replace any LSL, GRR, and lead connector (which may be done as part of the general 10-year LSLR mandate if the tap sample is collected during that time period, to ensure that LSLRs are completed efficiently during the 10-year program). Including a LSLR provision here is necessary despite the general LSLR mandate in proposed section 141.84(d) because the "access" requirements in proposed section 141.84(d) mean that some LSLs and GRRs may be left in service. And a customer may be more likely to grant access to replace an LSL or GRR if tap sampling shows the customer's water contains elevated levels of lead. Any CCT or WQP monitoring steps should be secondary to taking immediate actions to address the acute threat to public health represented by a tap sample above the lead action level (or lead PQL). Section 141.82(j) should be modified to make the provision of filters and LSLR the first steps in the process. If EPA perceives a tradeoff between this recommendation to provide filters and offer LSLRs and the proposed requirements for WQP monitoring and CCT modifications, modifying proposed section 141.82(j) to require filter provision and LSLRs instead of the current proposed text would simplify this provision and be more health-protective than the provision as drafted.

Second, the threshold for triggering proposed section 141.82(j) is too high. Any amount of lead in drinking water is unsafe, so the trigger for this provision should be the lead PQL instead of the lead action level. At a minimum, our proposed filter requirements should be triggered by the lead PQL, even if the broader LSLR and WQP sampling provisions are tied to lead action level exceedances.

Third, in conducting follow-up tap sampling pursuant to proposed section 141.82(j)(2), water systems should be required to provide the customer with information explaining that lead releases and measured lead concentrations in water vary over time, that subsequent samples showing lower or non-detectable lead concentrations do not prove that the problem has been resolved, and that the most health-protective option is for the customer to use a filter certified to remove lead (*see, e.g.*, discussion of public education and notification content changes needed in section 8(A)(i) of our comments). Absent this information, and by allowing the water system to conduct follow-up sampling using any collection procedures, there is a risk that customers will get a false sense of security if the follow-up sampling shows lower or non-detectable lead concentrations. With no identified change to premise water quality and infrastructure, there is no evidence that the conditions that created the original high result have been removed or prevented and should be assumed to remain present.

Fourth, as drafted, proposed section 141.82(j) appears to require localized WQP monitoring and other steps for every tap sample exceeding the lead action level, even if the water system is simultaneously required to complete a CCT study or CCT re-optimization study. A more health-protective approach would be to require a comprehensive CCT study or CCT re-optimization study and implementation of OCCT any time a tap sample exceeds the lead action level (or, better yet, the lead PQL). At a minimum, it may be more implementable and less burdensome and redundant to allow water systems, if triggered by proposed section 141.82(j), either to conduct the localized study required by proposed section 141.82(j) or to conduct a system-wide CCT study or re-optimization study. The LCRI should also clarify that, if the system's 90th percentile sampling results exceed the lead action level, the system must comply with the systemwide CCT study and implementation provisions in proposed sections 141.82(d) or (e) and need not also conduct the studies required by proposed section 141.82(j).

Finally, as discussed in part 10(H) of these comments, the WQPs specified in proposed section 141.82(J)(1)(i) should be expanded to include calcium, conductivity, and temperature.

J. The lead practical quantitation limit (PQL) should be lowered to reflect current scientific and laboratory methods

EPA's derivation of the lead practical quantitation limit (PQL) is more than 35 years old and has not kept up with modern laboratory methods and capabilities. EPA should reduce the PQL to 0.0005 mg/L (0.5 ppb) or, at a minimum, to no more than 0.0025 mg/L (2.5 ppb).

In the proposed LCRI, EPA concludes that the lead PQL should remain at 0.005 mg/L.[84] EPA asserts that the minimum detection limit for lead can be "as low as 0.0006 mg/L," but asserts that the PQL should add an uncertainty factor of 5 to 10 to account for analytical variability.[85] In support, EPA cites to its 35-year-old derivation of the lead PQL in its proposed lead and copper drinking water regulations from 1988.[86] However, in 1988, EPA concluded that "the lowest [method detection limit] for any of the methods used to detect lead is 0.001 mg/L," and EPA proposed a lead PQL that was five times higher: 0.005 mg/L.[87] Having concluded in the LCRI that the minimum detection limit is now about half what it was in 1988, EPA should, at a minimum, reduce the lead PQL by half and set it no higher than 0.0025 mg/L (2.5 ppb).

Moreover, the minimum detection limit cited in the LCRI is outdated[88] and the lead PQL should be set even lower. For example, the 2021 CCT study for Flint, Michigan, quantified lead

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[84] 88 Fed. Reg. at 84,942-43.
[85] 88 Fed. Reg. at 84,942.
[86] 53 Fed. Reg. 31,516, 31,550 (Aug. 18, 1988).
[87] 53 Fed. Reg. at 31,551.
[88] EPA's cited value of 0.0006 mg/L (or 0.6 µg/L or 0.6 ppb) appears to come from EPA, *Method 200.8, Revision 5.4: Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry*, at 200.8-41 tbl.7 (1994), *available at* https://www.epa.gov/sites/default/files/2015-08/documents/method_200-8_rev_5-4_1994.pdf. However, that 30-year-old document does not reflect modern laboratory methods and, even then, using "state-of-the-art instrumentation" from 1994 it reported lower method detection limits for lead of 0.05 µg/L and 0.02 µg/L. *Id.* at 200.8-41 tbl.7 n.2. Those lower method detection limits are more consistent with the results reported in Method 6020B twenty years later.

concentrations down to a method *reporting* limit of 1 µg/L (equivalent to 0.001 mg/L or 1 ppb).[89] More recently, EPA's 2023 Benton Harbor Drinking Water Study quantified lead in drinking water down to a *reporting* limit of 0.5 ppb (equivalent to 0.0005 mg/L).[90] For the Benton Harbor study, EPA's Chicago Regional Laboratory achieved a reporting limit of 0.5 ppb using Inductively Coupled Plasma-Mass Spectrometry, EPA method 200.8/SW-846 6020B, using the Agilent 7700x, Metals 001 version 11.[91] EPA Method 6020B includes a table of "performance data for a simulated drinking water standard," which found that the method measured lead concentrations down to about 24 ng/L, equivalent to 0.024 µg/L (or 0.024 ppb).[92] Method 6020B notes that instrument detection limits are different than lower limits of quantitation, and directs laboratories to determine and verify the lower limit of quantitation, which may vary based on matrices, instrumentation, and operating conditions.[93] The Benton Harbor study's reporting limit indicates that EPA's Chicago Regional Laboratory was able to achieve a lower limit of quantitation for lead of at least 0.5 ppb. In sum, there is evidence that modern methods have *detection* limits for lead in drinking water as low as about 0.024 ppb and *reporting* limits, based on the lower limit of quantitation, as low as 0.5 ppb. Accordingly, EPA should set the lead PQL at 0.5 ppb (0.0005 mg/L) consistent with the reporting limits achieved by modern laboratory methods.

Setting the PQL too high has real world health impacts. Water systems may report test results below the PQL as non-quantifiable, non-detect, below reporting limits, or in other non-quantified ways that suggest the sample contains no measurable lead, even if measurable lead was detected. When that happens, it gives consumers false confidence that their water is lead-free when in fact it contains measurable lead. And, as EPA acknowledges, there is no safe level of lead in drinking water. Also, EPA treats the lead PQL as the lowest possible value to consider for the lead action level.[94] A lead PQL of 0.5 ppb (or, at least, no more than 2.5 ppb) would further support reducing the lead action level below 10 ppb, as discussed elsewhere in these comments, which is a feasible way to better protect public health from lead in drinking water.

The Safe Drinking Water Act requires EPA's drinking water standards to use "the best available science best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices; and . . . data collected by accepted methods or best available methods (if the reliability of the method and the nature of the decision justifies use of the data)."[95] To protect public health, keep up with modern and best available scientific methods, and ensure that water systems accurately report lead test results, the LCRI should set the lead PQL at 0.0005 mg/L (or 0.5 ppb), consistent with the reporting limit and lower limit of quantitation used in EPA's recent Benton Harbor report. At a minimum, EPA

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[89] Cornwell Engineering Group, Corrosion Control Study Pipe Loop Study Expanded Executive Summary, Prepared for City of Flint, at 6 (Jan. 18, 2021), *available at* https://www.michigan.gov/-/media/Project/Websites/flintwater/documents/2021/Executive-Summary-Flint-Pipe-Loops-dated-011821.pdf?rev=97a478f748dc47068b257e601d70937e.

[90] EPA, *Benton Harbor Drinking Water Study*, EPA/600/R-22/269, at 11 & tbl. 1, (April 2023), *available at* https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=546677&Lab=CESER.

[91] *Id.* at tbl. 1, nn. 6-7.

[92] EPA, Method 6020B, Inductively Coupled Plasma-Mass Spectrometry, at 23, 29 tbl. 4 (rev. 2, July 2014), *available at* https://www.epa.gov/sites/default/files/2015-12/documents/6020b.pdf.

[93] *Id.* at 2, 13-14, 17.

[94] 88 Fed. Reg. at 84,942.

[95] SDWA § 1412(b)(3)(A), 42 U.S.C. § 300g-1(b)(3)(A).

should set the PQL no higher than 0.0025 mg/L (2.5 ppb), which would be generally consistent with EPA's 1988 PQL methodology, adjusted for EPA's (outdated) interpretation of modern laboratory method detection limits in the proposed LCRI.

K. EPA should create incentives to address the identified shortages of CCT experts

EPA expresses "concern[s] about the number of CCT experts available nationally to assist water systems in designing an OCCT study and implementing treatment."[96] EPA "expects CCT expertise to be highly technical given that corrosion chemistry is complex and theoretical predictions are rarely sufficient to fully understand a system."[97] And EPA concludes that "knowledge of relevant chemistry alone is usually not sufficient to perform comprehensive CCT studies. Instead, experts typically rely on significant practical and learned experience to evaluate each system individually. This knowledge is generally gained through practical, on-the-job experience that cannot otherwise be replicated."[98]

The effectiveness of the CCT provisions in the LCRI will depend in part on whether CCT studies and OCCT designations are based on sound science and carried out by well-qualified professionals. To address its concerns, EPA should consider all available options to encourage more people to become CCT experts. In particular, EPA should look for opportunities to fund educational programs that train CCT experts, including programs with substantial apprenticeship-type experiences that emphasize on-the-job learning. EPA also should seek to fund or create forums for sharing CCT knowledge among public- and private-sector CCT experts. As discussed elsewhere in these comments, the LCRI should contain robust transparency requirements for CCT studies and OCCT decisions to facilitate information-sharing among water systems and States. Within the LCRI, EPA also could try to create a reliable market for CCT experts by mandating that CCT studies and decisions about OCCT be conducted by or approved by CCT experts with particular credentials. However, any credentialing provisions should allow plenty of time for experts to obtain the necessary credentials, to avoid exacerbating any potential short-term shortages of CCT experts.

As examples, at the time EPA's LCRI development was announced, the Biden-Harris Administration also announced that EPA and the Department of Labor would collaborate with labor unions to accelerate LSLRs.[99] EPA could pursue similar initiatives focused on building up CCT expertise and capacity. EPA also could partner with the National Science Foundation (NSF) to improve CCT expertise. The NSF and EPA have previously established research fellowships for NSF-funded projects or to host Graduate Research Fellowship Program Fellows,[100] including for projects relating to sustainable and healthy communities and water research topics.[101] In addition, NSF and EPA have made awards for centers for Environmental Implications of

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[96] 88 Fed. Reg. at 84,942.
[97] *Id.*
[98] *Id*. at 84,942.
[99] Fact Sheet, The Biden-Harris Lead Pipe and Paint Action Plan (Dec. 16, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/16/fact-sheet-the-biden-harris-lead-pipe-and-paint-action-plan/.
[100] EPA, Research Fellowships for Graduate Students (last updated Oct. 17, 2023), https://www.epa.gov/research-fellowships/research-fellowships-graduate-students.
[101] EPA, Fellowship Research Areas, Sustainable and Health Communities Research (last updated Dec. 22, 2023), https://www.epa.gov/research-fellowships/fellowship-research-areas#Sustainable.

Technology, led by UCLA and Duke University.[102] All of these examples could serve as models for ways that EPA could invest in and promote the CCT capacity building and expertise.

L. Responses to EPA's requests for comment about CCT issues

EPA has requested comment on the following specific CCT issues. Our summary responses are included here, along with cross-references to more detailed responses elsewhere in these comments.

i. The proposed determination that the CTT [sic] treatment technique is feasible and prevents known or anticipated adverse health effects to the extent feasible.

We agree that CCT is a feasible treatment technique and, when designed and implemented properly, can prevent known or anticipated adverse health effects. For the reasons stated throughout section 10 of these comments, the LCRI's CCT provisions, as currently drafted, do not prevent known or anticipated adverse health effects to the extent feasible. Throughout section 10 of these comments, we have suggested modifications to the LCRI's CCT provisions that are necessary to ensure that the LCRI's CCT provisions collectively prescribe a treatment technique that will prevent known or anticipated adverse health effects to the extent feasible.

ii. Comment on whether it would be more appropriate to require water systems to re-optimize again following an action level exceedance regardless of meeting their optimal water quality parameters and to provide the State with the authority to waive this requirement.

Yes. As discussed in detail in section 10(E)(ii) of these comments, LCRI should require that all systems with CCT have an ongoing duty to re-optimize CCT after action level exceedances, unless the State determines after full and carefully documented consideration that re-optimization is not needed.

iii. The proposed option for a water system to delay OCCT until after the system has replaced all of its LSLs and GRR service lines, while the system achieves at least 20 percent removal per year and must have no LSLs, GRR service lines, or lead status unknown service lines remaining at the end of the five-year period.

As discussed in detail in section 10(A) of these comments, this five-year CCT delay provision fails to protect public health to the extent feasible, will not achieve EPA's stated goals, and must be eliminated or modified.

iv. The treatment recommendation and CCT study process can take multiple years to complete. For systems with existing corrosion control, the system may be able to alter the existing treatment (e.g., increase pH and/or orthophosphate dose) without a new CCT study on a much faster timeframe rather than waiting for

[102] U.S. National Science Foundation, NSF and EPA Establish Two Centers for Environmental Implications of Nanotechnology, News Release 08-155 (Sept. 17, 2008), https://www.nsf.gov/news/news_summ.jsp?cntn_id=112234.

study results that may recommend that same change. EPA is requesting comment on whether there are situations and/or conditions where existing treatment modifications may achieve similar lead reductions rather than delaying new treatment for two-and-a-half years while a study is underway.

We agree that there likely are situations and/or conditions where existing treatment modifications should be implemented in parallel with or instead of conducting a new CCT study. CCT is a complex science and optimizing CCT throughout a water system may require iterative processes to adjust treatment doses and methods to achieve intended water quality parameters. A well-designed and executed CCT study may provide sufficient information for a water system and State to designate re-optimized CCT without re-doing an entire CCT study. We note, however, that there will be other situations for which a new CCT will be necessary to re-optimize CCT. We support giving States flexibility to determine whether a new CCT study is needed or whether existing information is sufficient to designate re-optimized CCT because this determination will need to be a fact- and circumstance-specific evaluation customized to each individual water system.

Section 11: EPA Should Establish a Maximum Contaminant Level for Lead

A. The SDWA requires EPA to set an MCL because it is feasible to ascertain the level of lead

The Safe Drinking Water Act (SDWA) provides that EPA "is authorized to promulgate a national primary drinking water regulation that requires the use of a treatment technique in lieu of establishing a maximum contaminant level, if the Administrator makes a finding that it is not economically or technologically feasible to ascertain the level of the contaminant."[1] The Lead and Copper Rule Improvements (LCRI) proposal requires covered public water systems to monitor for lead at the tap, and thus it is per se feasible to ascertain the level of lead in drinking water. Thus, the statute requires EPA to establish a Maximum Contaminant Level, or MCL.

Instead of re-establishing an MCL for lead as the law requires and as EPA had promulgated in 1975,[2] the LCRI would fashion a complex and treatment technique that fails to protect public health to the extent feasible.[3] Regrettably, because of the innumerable loopholes and exceptions to key provisions of the LCRI, if it is finalized in its proposed form many if not most lead service lines (LSLs) are likely to remain in use and to continue to contaminate drinking water. Therefore, not only is an MCL legally required for lead, but if these loopholes and exceptions are not eliminated in the final rule, the LCRI will allow continued unnecessary and inequitable lead exposure to millions of children and vulnerable subpopulations, contrary to the SDWA's requirements and EPA's and the Biden Administration's stated goals.

In the LCRI, the agency asserts that it cannot establish an MCL for lead, even though EPA had previously established an MCL for lead in 1975,[4] which was in effect for 16 years until the original Lead and Copper Rule treatment technique came into effect in 1991.[5] In fact, in issuing that MCL that was to be measured at the tap, EPA noted that,

> Concern was expressed over the inability to control potential sources of contaminants which are under the control of the consumer. The promulgated definition of "maximum contaminant level," §141.2(d), retains the requirement that the maximum contaminant level be measured at the tap except in the case of turbidity….However, the definition has been expanded to make clear that contaminants added to the water by circumstances under the control of the consumer are not the responsibility of the supplier of water, unless the contaminants result from corrosion of piping and plumbing resulting from the quality of water supplied.[6]

Thus, EPA was well aware of the fact that corrosive water could mobilize lead in drinking water but established an MCL for lead to be measured at the tap. The agency reasoned that the public

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[1] 42 U.S.C. § 300g-1(b)(7)(A).
[2] See National Interim Primary Drinking Water Regulations, 40 Fed. Reg. at 59,566 (Dec. 24, 1975) (setting a 50 ppb MCL for lead, measured at the tap).
[3] See, ibid ("The Administrator shall identify those treatment techniques which, in the Administrator's judgment, would prevent known or anticipated adverse effects on the health of persons to the extent feasible.")
[4] Ibid.
[5] 56 Fed. Reg. 26,460 (June 7, 1991).
[6] 40 Fed. Reg. at 59,566, 59,567-68.

water system could control the corrosivity of its water and therefore is responsible for lead contamination mobilized by its corrosive water.

In the LCR in 1991, however, the agency reversed course and asserted that it could not set an MCL for lead and instead established a treatment technique it called the Lead and Copper Rule.[7] While the basis for that assertion was questionable then, none of those bases currently apply. EPA's historic and current rationales for rejecting an MCL distill down to three: (1) indoor plumbing is the main contributor to lead in tap water and that is not under the control of the water system so it must set a treatment technique instead of an MCL; (2) if EPA were to crack down on lead levels at the tap through an MCL it would result in increases in other contaminants at the tap, a situation Congress did not anticipate and therefore EPA must set a treatment technique instead of an MCL; and (3) the levels of lead vary at the tap and therefore it is not feasible to set an MCL, so EPA must establish a treatment technique. As discussed below, each of these rationales is flawed, and the first two have been superseded by amendments to the SDWA enacted after the 1991 rule and the court decision upholding it. Therefore, EPA is under a legal obligation to establish an MCL.

B. EPA's previous justifications for refusing to set a maximum contaminant level no longer apply

The D.C. Circuit in 1994 affirmed EPA's choice in the 1991 Rule to set a treatment technique and not a maximum contaminant level for lead.[8] But the Court's decision turned on two justifications that no longer apply.

First, at the time, the court relied upon the assumption that the primary source of lead in drinking water was indoor plumbing, not drinking water infrastructure owned or controlled by water systems.[9] Household plumbing fixtures could then contain up to eight percent lead.[10] The Court deferred to EPA's interpretation that it was not "feasible" to set a maximum contaminant level when water systems did not control the major sources of lead in the water.[11]

Since then, however, the Safe Drinking Water Act has been amended to nearly eliminate lead from plumbing and fixtures.[12] As a result, lead service lines have overtaken household

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[7] 56 Fed. Reg. 26,460 (June 7, 1991).
[8] *American Water Works Ass'n v. EPA*, 40 F.3d 1,266, 1,270-71 (D.C. Cir. 1994).
[9] Id. at 1,271.
[10] See SDWA §1417 as in effect in 1993, Pub. L. 99–339, title I, § 109(a), June 19, 1986, 100 Stat. 642, at 651-53- (prohibiting sale of plumbing and fixtures that were not "lead free," defined to allow lead up to 8 percent in plumbing). As discussed below, Section 1417's definition of lead free for plumbing was amended in 2011 to allow at most 0.25 percent lead in any wetted surface of plumbing and fixtures. 42 U.S.C. § 300g-6. See, Pub. L. 111–380, § 2(a), Jan. 4, 2011, 124 Stat. 4131 (amending the definition of legal "lead free" plumbing).
[11] *Am. Water Works Ass'n*, 40 F.3d at 1,271.
[12] See Pub. L. No. 104-182, § 118, 110 Stat. 1613, 1645-47 (1996) (codified as amended at 42 U.S.C. § 300g-6) (expanding previous restrictions on lead pipes, solder, and flux to include lead plumbing fittings and fixtures); Pub. L. No. 111-380, § 2, 124 Stat. 4131, 4131 (2011) (codified as amended at 42 U.S.C. § 300g-6(d)(1)(B)) (lowering the amount of allowable lead in plumbing to 0.25 percent).

plumbing as the dominant source of contamination, as EPA concedes.[13] This moots EPA's prior rationale. According to Jeff Cohen, the former EPA official who led the drafting the 1991 Rule: "Given the restrictions on lead in new plumbing, the Agency's rationale in 1991 for rejecting the option to set [a maximum contaminant level] at the tap no longer holds today."[14] While indoor plumbing still can contribute to lead in tap water, EPA's data presented in the LCRI preamble demonstrates that if the water systems have corrosion control treatment and remove all LSLs, both measures within the control of the water system, the lead levels plummet; currently about 95 percent of large systems would meet a action level of 5 ppb.[15] With application of additional actions such as improved corrosion control and if necessary provision of point of use devices to affected households, compliance with an MCL would certainly be feasible. Thus, systems could be held accountable for complying with an MCL at such a level.

Second, EPA argued in 1991 that requiring all water systems to meet a maximum contaminant level would encourage remedial techniques that reduced lead but *increased* levels of other contaminants, with harmful unintended consequences.[16] The Court agreed with EPA's argument that Congress did not contemplate that risk, and therefore "impliedly delegated" to EPA the discretion to impose a treatment technique instead.[17]

But Congress has since amended the Safe Drinking Water Act to address that situation too, allowing EPA to set a higher maximum contaminant level than otherwise required if necessary to prevent a harmful increase in the concentration of other contaminants.[18] EPA's argument about unintended consequences therefore no longer applies.

In the LCRI proposal, EPA's justification for refusing to set a maximum contaminant level, the agency says, is that "[b]ased on the analysis being conducted for the proposed LCRI, EPA is proposing to determine that information and factors consistent with the Act that cause lead and copper variation identified in the 1991 LCR and supported in the LCRR continue to apply today. Therefore, it is not feasible to establish MCLs for lead and copper consistent with the SDWA."[19]

The agency now offers three objections to establishing an MCL in the LCRI proposal:

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[13] 88 Fed. Reg. at 84,909 ("Studies have shown that LSLs are the predominant contributor of lead in drinking water where they are present"); see also Comment of Jeff Cohen (former manager of EPA's drafting of the original 1991 Lead and Copper Rule), April 12, 2021, EPA Docket for National Primary Drinking Water Regulations: Lead and Copper Rule Revisions, Docket ID No. EPA-HQ-OW-2017-0300, document 1887, https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1887. ("the Agency should again consider establishing an MCL for lead instead of the current treatment technique approach. Given the restrictions on lead in new plumbing, the Agency's rationale in 1991 for rejecting the option to set an MCL at the tap no longer holds today. *As of 2020, it is possible that water systems can be held responsible for the sources of lead contamination in drinking water, specifically, corrosive water interacting with lead service lines.*"(emphasis in original)).

[14] Comment of Jeff Cohen, Jan. 22, 2020, Docket ID No. EPA-HQ-OW-2017-0300, document 0988, https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-0988

[15] See, LCRI, 88 Fed. Reg. at 84,941, Exhibit 5 (about 95 percent of large water systems—the systems by which the SDWA requires EPA to measure feasibility—would meet an action level of 5 ppb).

[16] *Am. Water Works Ass'n*, 40 F.3d at 1,270-71.

[17] Id.

[18] 42 U.S.C. § 300g-1(b)(5).

[19] 88 Fed. Reg. at 84,907.

> First, as noted in the LCR, "lead release can be unpredictable over time and across households, can originate from many sources owned by the water system and the customer, can vary based on the sample technique used, and can be affected by customer water use habits" (53 FR 31527, USEPA, 1988). Studies continue to show that the levels of lead and copper measured at the tap after treatment is variable due to several factors… Second, the conditions of plumbing materials also continue to vary from water system to water system, and from site to site within a water system, such that lead in drinking water continues to be subject to high levels of variability…. Third, despite changes to the allowable amount of lead in "lead free" plumbing, many older buildings can still be a source of lead.[20]

At bottom, EPA's argument is that lead levels in water are variable, and the amount measured can depend on sample technique used, customer water use habits, stagnation, physical disruptions to lead pipes, plumbing materials, and other factors. Yet for other purposes, EPA deems it feasible to ascertain lead levels in water despite lead's variability. Indeed, EPA's entire scheme under both the 1991 Rule and the LCRI depends on measuring lead levels and taking prescribed action based on the level detected.[21] While EPA handwaves with a series of complex mathematical analyses of the variability of lead levels at the tap,[22] and while we fully agree that lead levels are variable at the tap, EPA has failed to explain why it is feasible to ascertain lead levels to compel action under a treatment technique with an Action Level set at 10 parts per billion, but not feasible to ascertain lead levels to compel action using a maximum contaminant level. This justification is internally inconsistent and arbitrary.

Moreover, EPA has set maximum contaminant levels for other similarly highly variable drinking water contaminants, like total trihalomethanes and haloacetic acids.[23] These substances are disinfection byproducts (DBPs) that can vary within a single water supply and at a single location based on the season, water temperature, pH, residence time in the distribution system, and even the diameter of distribution pipes, among other factors.[24] Yet EPA accounted for this variability and still established maximum contaminant levels for these chemicals.[25] Just as for disinfection byproducts, EPA could design and prescribe sampling procedures that account for the variability of lead in water. Indeed, EPA's former drafter of the original 1991 Lead and Copper Rule pointed out, "[u[nder an MCL approach, implementation and oversight would be significantly streamlined compared to the current rule and the proposed revisions, while continuing to provide comprehensive public health protection. The MCL could be established as either a single data point or as a statistical value similar to an action level…."[26]

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[20] Id. at 84,907-09.
[21] See id. at 84,939 (summarizing required steps based on exceedance of 10 ppb "action level").
[22] Id. at 84,907-909.
[23] 40 C.F.R. §§ 141.64(b)(2)(i), 141.601(b).
[24] 71 Fed. Reg. 388, 394 (Jan. 4, 2006).
[25] 40 C.F.R. §§ 141.64(b)(2)(i), 141.601(b).
[26] Comment of Jeff Cohen (former manager of EPA's drafting of the original 1991 Lead and Copper Rule), April 12, 2021, EPA Docket for National Primary Drinking Water Regulations: Lead and Copper Rule Revisions, Docket ID No. EPA-HQ-OW-2017-0300, document 1887, https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1887.

In the LCRI EPA objects to the comparison of DBPs and lead, noting that

> there is no indication that the level of purported sampling ‘‘variability’’ associated with disinfection byproducts can be reasonably compared to that of lead contamination in drinking water. Another critical distinction between the lead and copper rules and the disinfection byproduct rules is that, unlike for lead, water systems disinfecting the water supply are the source of disinfection byproducts. Water systems introduce disinfectants, such as chlorine and chloramine, into the drinking water supply.[27]

However, this rationale ignores that as is true for DBPs, lead levels can be significantly reduced by water systems through changes in treatment at the water treatment plant (i.e. corrosion control), and through removal of sources of lead under the control of the water system (e.g. removing LSLs). The rationale for rejecting the comparison to DBPs also runs directly contrary to the agency's findings in establishing the MCLs for DBPs. For example, in setting the Stage 2 MCLs for DBPs, EPA requires systems to test at multiple locations across the distribution system including at higher risk locations, and established "locational running annual average" MCLs at these high risk site, noting that there are extensive data on the "significant variability with respect to factors influencing DBP formation, including temperature, residence time, and geographical region."[28] EPA explains that,

> the Stage 2 DBPR is designed to address spatial variations in DBP exposure through a new compliance calculation (referred to as locational running annual average) for TTHM and HAA5 MCLs. …The Stage 1 DBPR running annual average (RAA) calculation allowed some locations within a distribution system to have higher DBP annual averages than others as long as the system-wide average was below the MCL. The Stage 2 DBPR bases compliance on a locational running annual average (LRAA) calculation, where the annual average at each sampling location in the distribution system will be used to determine compliance with the MCLs….The LRAA will reduce exposures to high DBP concentrations by ensuring that each monitoring site is in compliance with the MCLs as an annual average, while providing all customers drinking water that more consistently meets the MCLs."[29]

Thus, the agency clearly could fashion an MCL for lead that would address variability of lead levels across the distribution system, targeting high risk locations much as the LCRI does for compliance monitoring for the action level.

EPA also has ignored evidence that regulatory agencies in other countries have set the equivalent of a maximum contaminant level for lead and devised adequate monitoring requirements to account for lead's variability.[30] Canada, for example, recommends a maximum

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[27] 88 Fed. Reg. at 84,910.
[28] 71 Fed. Reg. 388, 465 (Jan. 4, 2006).
[29] Id. at 391.
[30] See Comment submitted by Natural Resources Defense Council, EPA Docket for National Primary Drinking Water Regulations: Lead and Copper Rule Revisions (Mar. 1, 2020), at 6. Docket ID No. EPA-HQ-OW-2017-1546 https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1546; comment submitted by Evan Feinauer, Staff Attorney, Clean Wisconsin et al. (Feb. 18, 2020) at 2. Docket ID No. EPA-HQ-OW-2017-0300-1445. https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1445 .

acceptable concentration for lead of 5 ppb.[31] Several Canadian provinces have imposed limits of either 5 or 10 ppb.[32]

C. EPA's stated concern about water system "responsibility" is internally inconsistent and arbitrary

EPA asserts that lead service lines are "not always" owned or controlled by the water system, and thus water systems are not "always responsible" for lead in drinking water.[33] EPA's reasoning is muddled, but the agency appears to argue that this excuses it from setting a maximum contaminant level.[34].

This excuse fails because EPA's treatment technique under the LCRI proposal *already* holds water systems responsible for lead contamination from lead service lines, regardless of whether they are owned or controlled by the water system. As EPA itself explained in the Lead and Copper Rule Revisions (LCRR), "historically, the [Lead and Copper Rule] *has not been limited to system-owned portions* of the distribution system."[35] The LCRI imposes responsibility on water systems regardless of service line ownership in at least five ways. First, EPA defined "lead service line" to include lines "owned by the water system, owned by the property owner, or both."[36] EPA adopted this definition "to ensure that the customer or private side of the service line *are included in rule requirements* such as inventory and replacement."[37] Second, the rule's corrosion control requirements apply equally to water systems with varying proportions of publicly and privately owned service lines.[38] Third, to determine lead levels in a water system, EPA prioritizes sampling from sites with lead service lines, whether publicly or privately owned.[39] Fourth, for sampling at homes served by lead service lines, EPA requires collection of both the first and fifth liter of water from the running kitchen or bathroom tap,[40] which better reflects lead levels resulting from contact with service lines, including "customer-owned" lines.[41] Fifth, EPA directs water systems to inventory all lead service lines, including private lines, because customer-owned service lines are always "connected to either a system-owned service

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[31] Comment submitted by Evan Feinauer, Staff Attorney, Clean Wisconsin et al., *supra* note 30, at 2. (citing Health Canada Guidelines).
[32] See Regulation respecting the quality of drinking water 2021, q-2, r. 40, s. 3 (Que.) (5 ppb lead limit); Standards and guidelines for municipal waterworks, wastewater and storm drainage systems 2012, 1.1 (Alta.) (adopting limits set forth in Health Canada Guidelines); Ontario Drinking Water Quality Standards 2003, O. Reg. 169/03 (10 ppb lead limit).
[33] EPA, Public Comment and Response Document for the Final Lead and Copper Rule Revisions (December 2020), at 470. EPA Docket No. EPA-HQ-OW-2017-0300-1622. https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1622
[34] Id. at 470-71.
[35] 86 Fed. Reg. at 4,212. As discussed extensively in section 2 of these comments regarding water system "control" of LSLs, the contention that water systems often lack control over LSLs is incorrect.
[36] 40 C.F.R. § 141.2.
[37] EPA, Public Comment and Response Document for the Final Lead and Copper Rule Revisions at 31 (emphasis added).
[38] 40 C.F.R. § 141.81.
[39] Id. § 141.86(a)(3).
[40] Id. §§ 141.86(b)(1) & (b)(3)(ii).
[41] 88 Fed. Reg. at 85,070, 85,073 (§§ 141.85(c)(2), 141.86(b)(1)(ii)).

line or system-owned water main and are therefore accessible to the system."[42] EPA does not explain why its "responsibility" rationale disqualifies a maximum contaminant level but not a treatment technique.

In sum, Congress expressed a clear preference that EPA set maximum contaminant levels for regulated contaminants. Only infeasibility in measuring the level of the contaminant excuses the agency from doing so. EPA did not adequately justify its refusal to set a maximum contaminant level for lead.

[42] 86 Fed. Reg. at 4,212. The requirement to test homes with private LSLs is not changed in the LCRI. See 88 Fed. Reg. at 84,933 ("EPA is not proposing changes to the initial inventories required under the LCRR….").

Section 12: Analysis of the LCRI's Benefits and Costs

A. The LCRI Economic Analysis Presents Reasonable Estimates of Per-LSLR Costs, and There are Strategies Available to Water Systems to Further Reduce LSLR Costs

Critics of the LCRI, especially among water systems, often argue that EPA understates the cost of full LSLR. In fact, an independent analysis commissioned by NRDC demonstrates that the LCRI Economic Analysis presents a reasonable estimate of per-LSLR costs, and that higher cost estimates put forward by the American Water Works Association (AWWA) are inflated.

Further, the independent cost analysis identifies many strategies that water systems can use to further reduce costs, especially non-construction costs. Some of those strategies, such as requiring water systems to cover the full cost of LSLR, can be directly mandated by EPA in the LCRI, while others are within the power of water systems to implement through design of their own LSLR programs when they implement the LCRI.

i. EPA's estimated per-LSLR costs are reasonable and AWWA's estimated costs are exaggerated

In December 2022, the American Water Works Association (AWWA) submitted to EPA a per-LSLR cost estimate, in the form of a CDM Smith report attached to an AWWA comment to the LCRI docket.[1] This new full LSLR cost estimate was about twice AWWA's previous estimate presented to EPA in 2020,[2] and also two times the previous average cost estimate provided by EPA and in the Lead and Copper Rule Revisions (LCRR) Economic Analysis in 2020.[3]

The proposed LCRI is supported by a new Economic Analysis, which presents EPA's own updated per-LSLR cost estimates.[4] As EPA observed in the Economic Analysis, CDM Smith's cost estimates are "notably" higher than EPA's new estimates.[5]

NRDC commissioned an independent report from Safe Water Engineering, which analyzes the bases of CDM Smith's and EPA's most recent per-LSLR cost estimates, compares

[1] CDM Smith (Nov. 2022), *Considerations When Costing Lead Service Line Identification and Replacement—Final Report*, included as attachment to Ltr. of 12/19/2022 from AWWA to EPA, https://www.regulations.gov/comment/EPA-HQ-OW-2022-0813-0031.
[2] Comment submitted by G. Tracy Mehan, III, Executive Director, Government Affairs, American Water Works Association (AWWA), Feb. 5, 2020, www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1018.
[3] EPA, *Economic Analysis for the Final Lead and Copper Rule Revisions*. Office of Water (4607M) EPA 816-R-20-008 (Dec. 2020), https://downloads.regulations.gov/EPA-HQ-OW-2017-0300-1769/content.pdf.
[4] *Economic Analysis for the Proposed Lead and Copper Rule Improvements*. Office of Water (4607M) EPA 815-R-23-005 (Nov. 2023), https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712.
[5] EPA, *Economic Analysis Appendices for the Proposed Lead and Copper Rule Improvements*. Office of Water (4606M) EPA 815-R-23-005A (Nov. 2023), pp. A-5 to A-6, https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712.

similarities and differences, and provides an additional literature review to further contextualize available data.[6]

The Safe Water Engineering report also presents independent per-LSLR construction cost estimates using data from RS Means, an industry standard construction cost tracking database. The results of that analysis provide the relative magnitude of individual line-item costs to identify major LSLR cost drivers, allowing for exploration of opportunities to reduce those costs.

The Safe Water Engineering Report is included as an appendix to this section, which will be submitted in a separate comment submission. We incorporate the report and its findings into our comments. The report's key findings are summarized below.

The Safe Water Engineering report concludes that CDM Smith substantially overestimated per-LSLR costs because of certain methodological choices they made when interpreting the data they collected. In contrast, the Safe Water Engineering report presents several lines of evidence showing that EPA's lower per-LSLR cost estimates are reasonable. These lines of evidence include: an independent re-analysis of CDM's data that avoids selective inclusion of projects and more accurately reflect fixed auxiliary costs; a critical review of EPA's data and analysis in the LCRI Economic Analysis; an independent literature review, not limited to the literature cited by CDM; and the independent per-LSLR construction cost estimates using data from RS Means.

Based on the same lines of evidence, the Safe Water Engineering report also concludes that the highest per-LSLR costs reported by individual water systems are outliers. Likewise, the report's independent estimate shows that there is a small set of construction conditions and auxiliary non-construction expenditures that can drive up costs, which, as reflected in the literature review cost estimates, are not experienced in the majority of LSLRs.

ii. There are many strategies readily available to water systems to further reduce costs

The Safe Water Engineering report identifies many opportunities for water systems to reduce non-construction costs associated with local LSLR programs, through attention to critical project planning and policy decisions. It includes a comprehensive description of the elements of program design and potential strategies for reducing costs. Some of those strategies, including having the water system cover the full cost of LSLR, can be directly mandated by EPA in the LCRI. Others would be within the power of water systems to implement through design of their own LSLR programs; the report notes several examples of cities that have been able to reduce costs over the course of multi-year LSLR programs, through improved program planning and implementation, even as some materials costs increase due to inflation.

[6] Elin Warn Betanzo, Safe Water Engineering, LLC, and Vanessa Speight, 2024, *Lead Service Line Replacement Costs and Strategies for Reducing Them* (appended to these comments and submitted under separate cover in Docket No. EPA-HW-OW-2022-0801).

B. Analysis of LCRI Benefit Analysis[7]

i. General Comments

EPA's analysis of the LCRI benefits is improved over EPA's previous cost-benefit analyses, but it remains manifestly inadequate.[8] The SDWA requires EPA to consider all "[q]uantifiable and nonquantifiable health risk reduction benefits for which there is a factual basis in the rulemaking record to conclude that such benefits are likely to occur…."[9] Furthermore, EPA is analyze the "effects of the contaminant on the general population and on groups within the general population such as infants, children, pregnant women, the elderly, individuals with a history of serious illness, or other subpopulations that are identified as likely to be at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population."[10] This, the agency has failed to do.

Compared to its LCRR analysis, EPA substantially increased the assessed benefits of health endpoints – from one health endpoint (decreased IQ-earnings) to 4 health endpoints across seven potential physiological systems, and the total estimated benefits have increased 20-fold. Nonetheless, the benefit analysis is conspicuous in its omissions. Most obvious – despite its heavy labor market/capital emphasis -- is the inexplicable omission of productivity losses associated with the limited health endpoints EPA has cherry-picked to include.

This is unfathomable and omitting it substantially biases downwards the quantification of damages associated with preterm births and ADHD at a minimum. For instance, Doshi et al., 2012 (used in the EA) finds that "Overall national annual incremental costs of ADHD ranged from $143 billion to $266 billion. Most of these costs were incurred by adults ($105B – $194B) compared with children/adolescents ($38B – $72B). For adults, the largest cost category was productivity and income losses ($87B – $138B)."[11] The Doshi estimates do not include loss of employment or stress related illnesses. Another significant omission is that the low-birth-weight damage estimate includes only the costs of immediate hospitalization. Estimates of the total costs of low birth weight infants show them to be an order of magnitude higher than the hospitalization costs, including parental productivity loss and numerous long term sequelae for the infant.

For perspective, the cost assessment components (Chapter 4 of the Economic Analysis plus Appendix B), are largely reworks of the 2021 LCR cost analyses. Chapter 4 is 336 pages

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[7] The economic analysis of the LCRI's benefits assessment in these comments was provided by Ronnie Levin, T.H. Chan Harvard School of Public Health, based in large part upon her research published in, 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, which is hereby incorporated by reference in these comments.

[8] USEPA (2023) Economic Analysis for the Proposed Lead and Copper Rule Improvements, Report, EPA-HQ-OW-2022-0801-0712, https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712. ("EPA 2023 EA")

[9] SDWA §1412(b)(3)(C)(i)(I), 42 U.S.C. §300g-1(b)(3)(C)(i)(I).

[10] Ibid §1412(b)(3)(C)(i)(V), 42 U.S.C. §300g-1(b)(3)(C)(i)(V).

[11] Doshi JA, Hodgkins P, Kahle J, Sikirica V, Cangelosi MJ, Setyawan J, Erder MH, Neumann PJ. Economic impact of childhood and adult attention-deficit/hyperactivity disorder in the United States. J Am Acad Child Adolesc Psychiatry. 2012 Oct;51(10):990-1002.e2. https://www.jaacap.org/article/S0890-8567(12)00538-2/fulltext. Epub 2012 Sep 5. PMID: 23021476.

with Appendix B another 266 pages and an additional 8 pages to compare the LCRI and LCR (Appendix C).[12] The benefit component (Chapter 5 of the EA) is 66 pages long with an additional 12 pages of uncertainties (none in the cost sections!); Appendix D is 27 pages with an additional 17 pages of references to give it oomph.[13]

EPA describes the robust scientific evidence of lead's health damages, noting health

> endpoints identified using two comprehensive United States Government documents summarizing the literature on lead exposure health impacts. These documents are EPA's Integrated Science Assessment for Lead (ISA) (USEPA, 2013), and the United States Department of Health and Human Services' NTP Monograph on Health Effects of Low-Level Lead (NTP, 2012). Both of these sources present comprehensive reviews of the literature as of the time of publication on the risk of adverse health effects associated with lead exposure. EPA summarized those endpoints to which either the EPA ISA or the NTP Monograph assigned one of the top two [highest causality] tiers of confidence in the relationship between lead exposure and the risk of adverse health effects. These endpoints include cardiovascular effects, renal effects, reproductive and developmental effects, immunological effects, neurological effects, and cancer.[14]

First, these two comprehensive reviews are outdated. EPA's next ISA (USEPA, 2023) has already been released for external review. The 2012 NTP report is more than a decade old. Why isn't more current research cited? Second, with the almost 20 separate health endpoints across 7 separate body systems EPA identified as causally related to lead exposure contained in these comprehensive reviews, why was EPA able to quantify only 4?

EPA describes the health evidence to be compelling, with evidence of a causal relationship between lead exposure and 7 body systems. EPA notes that for 3 of the 4 quantified benefits, the slopes are steeper at lower levels and several show no evidence of a threshold below which effects cease (IQ, cardiovascular, reduction in birth weight). EPA also describes average US lead exposures from drinking water as low. This indicates that it is precisely the drinking water exposures that are likely to produce the highest benefits.

Nonetheless, EPA ascribes several pages to uncertainties in these health estimates and declined to include other endpoints. Does EPA think that the uncertainties in WLLs are principally *higher* WLLs? If not, each of these monetized estimates should be portrayed as a LOWER BOUND estimate.

EPA has not even included all the data that it clearly has. The monetization of cognitive damage referred to as the IQ-earnings matrix is heavily detailed, but the effect on earnings is the delayed damage that is visible in adulthood. The concurrent remediation is compensatory education for the children who have sustained the IQ damage. Using the same exposure-IQ decrement data portrayed in chapter 5 (sections 5.5.1 and 5.5.2) of the EA, EPA could easily

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[12] EPA 2023 EA, Appendices,EPA-HQ-OW-2022-0801-0712, https://www.regulations.gov/document/EPA-HQ-OW-2022-0801-0712. ("EPA EA Appendices")
[13] Ibid.
[14] EPA 2023 EA at 6-5.

estimate the number of children likely to need compensatory remedial education. EPA estimates 297,190 IQ points saved by the LCRI. With a national mean IQ of 100 and with 68% of the US population estimated to have IQs between 85 and 115, assuming that children exposed to lead from drinking water have the same IQ distribution as the rest of the US population, we can assume that a loss of 10 IQ points will drop a child's almost a standard deviation (Omni Health Calculator, available at www.omnicalculator.com › health › iq-percentile). Only the children with below average IQs will require compensatory education.

To better assess all the health benefits of EPA's LCRI, we used EPA's exposure and effect estimates from the LCRI (contained in its Economic Analysis), converted all estimates to 2022$, then scaled the omitted health endpoints to include all the categories published in the Levin Schwartz 2023 benefit analysis.

Table 1, monetized benefits of LCRI including those omitted from EPA economic analysis.

Body system	Component assessed	Population	Aspect monetized	Monetized unit cost (2022$)	Incidence	Derivation of inci est	Total monetized benefit (millions 2022$)
Nervous System Effects							
	Cognitive Function Decrements	Children	IQ earnings	$22,400 per IQ pt[a]	297,190[a]	EPA LCRI	$6,657[a]
	Cognitive Function Decrements	Children	Short-term damages (compensatory ed)	$51,500[b]	15,000	Scaling[c]	$773
	Behavioral & Conduct Problems	Children	ADHD	$179,000[a]	4,221[a]	EPA LCRI	$755[a]
	Sensory Function Decrements	Children	Auditory impairment	$18,300 [b]	1620	Scaling[c]	$30
	Internalizing Behaviors	Children	---				
	Cognitive Function Decrements	Adults	Depression	$70,000 [b]	2400	Scaling[c]	$168
	Psychopathological Effects	Adults	ADHD	$11,000 [b]	20,000	Scaling[c]	$220
	Psychopathological Effects (alternative)	Adults	Dementia	$31,000 [b]	400	Scaling[c]	$12
Cardiovascular Effects	Hypertension	Adults	Hypertension	$5,700[b]	100,000	Scaling[c]	$570
	Coronary Heart Disease	Adults	Coronary heart disease	$19,500 [b]	1500	Scaling[c]	$29
Immune System Effects	Immunological damage	Lifetime	Asthma	$56,000 [b]	2080	Scaling[c]	$116
Hematologic Effects	Decreased Red Blood Cell Survival and Altered Heme Synthesis	Lifetime	Anemia	$3,700 [b]	50	Scaling[c]	--
Reproductive & Developmental Effects	Development	Lifetime	---				
	Birth Outcomes	Childhood & life	Low birth weight	$5 [a]	1.4 mil [a]	EPA LCRI	$6 [a]
	Male Reproductive Function	Adult	Male reproductive impairment	$66,800 [b]	800	Scaling[c]	$53
Cancer	Cancer	Adult	Lung cancer	$293,000 [b]	5	Scaling[c]	$0.9
Mortality	Cardiovascular	Adult	VSL	$10.4 mil [a]	2642 [a]	EPA LCRI	$27,382 [a]
TOTAL							**$36,772**

Legend: a: EPA LCRI 2023 Economic Analysis; b: Levin Schwartz 2023 converted to 2022$; c: scaling from Levin Schwartz to LCRI exposure estimates[15]

[15] 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.

The total estimated benefits ($36,772 in 2022$), while only 10% higher than EPA's estimates, present a much more comprehensive picture of the benefits of the LCRI. Of course, this assessment remains a poor underestimate of the total damages because each monetized endpoint is incomplete; the largest omissions are likely productivity losses and the long-term sequelae of low birthweights.

EPA repeatedly claims an inability to quantify benefits, but not costs. For instance, "because of the lack of granularity in the lead tap water concentration data available to EPA for the regulatory analysis, EPA is unable to quantify the benefits of small improvements in CCT to individuals residing in homes with LSLs/GRR service lines."[16] Nonetheless, EPA does not find either the lack of granularity in the WLL data nor the lack of evidence of a threshold to constitute 'uncertainties' in the cost estimates or a downward bias in the benefits.

In addition to the paucity of monetized health benefits, EPA also refused to include materials benefits associated with required corrosion control. Corrosion control is the control treatment of choice because lead is principally a corrosion by-product in drinking water. EPA's omission of monetized benefit estimation is willful. EPA acknowledges that estimates exist and indeed, EPA first published estimates of avoidable corrosion damage in 1986.[17] The quadrennial American Society of Civil Engineers report card on the state of US infrastructure contains a host of estimates of corrosion damage.[18] In addition, there are at least 2 international organizations that study corrosion: the National Association of Corrosion Engineers (NACE) and The Association for Materials Protection and Performance. EPA acknowledges that individuals who live or work in buildings without LSL/GRR lines are likely to benefit from the improved monitoring and additional actions to optimize corrosion control.[19] Nonetheless, EPA concludes "EPA did not have sufficient information to estimate these impacts nationally for the proposed rule analysis."[20]

In sum, the agency's EA fails to consider the full range of benefits from the proposed rule. OMB's new Circular No. A-4 on Regulatory Analysis, issued on November 9, 2023, provides OMB's guidance to Federal agencies.[21] It requires that agencies' regulatory cost benefit analyses should include the fullest range of information on known and anticipated social costs and benefits. Not only has EPA failed to comply with the SDWA's directives to consider the full range of health benefits, EPA has clearly not adhered to this OMB directive either.

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[16] EPA 2023 EA, at 6-5.
[17] Ronnie Levin, EPA Office of Policy, Planning and Evaluation, Reducing Lead in Drinking Water: A Benefit Analysis,
U.S. Environmental Protection Agency, EPA-230-09-86-019, Draft Final Report December 1986, (revised Spring 1987). https://www.epa.gov/sites/default/files/2017-12/documents/ee-0344_long.pdf
[18] American Society of Civil Engineers, Report Card for America's Infrastructure, 2021 https://infrastructurereportcard.org/
[19] EPA 2023 EA, at 5-22.
[20] Id. at 5-73.
[21] OMB Circular A-4, Nov.9 , 2023, To the Heads of Executive Agencies and Establishments, Subject: Regulatory Analysis, https://www.whitehouse.gov/wp-content/uploads/2023/04/DraftCircularA-4.pdf

ii. Discount Rate

EPA has used an unreasonably high discount rate of up to 7 percent to discount future benefits. First of all, we note that although EPA's EA discounts all benefits by 3 percent and 7 percent.[22] Yet OMB's 2023 Circular No. A-94, which guides agencies on what discount rates to use in cost-benefit analyses, was revised in November 2023 and states, "Discounted benefits or costs should be determined using a real discount rate of 2.0 percent if the benefits or costs reflect certainty-equivalent valuations and 3.1 percent if they do not." [23] It further notes that "This 2023 version of the Appendix is valid until the release of a subsequent Appendix in 2026."[24] Based upon the OMB Circular alone, the LCRI should present at most a 2% and possibly a 3% discount rate.

But based upon the best available science and literature, EPA should apply no (or at most a lower than 2 percent) discount rate for benefits to account for the intergenerational harms associated with PFAS and the nature of the rule's economic impacts.[25] Even OMB's separate Circular A-4 notes that some experts believe that any discounting of benefits to future generations is inherently unethical.[26] OMB notes that there are reasons to consider lower discount rates doe future benefits when they will accrue to future generations:

> Special ethical considerations arise when comparing benefits and costs across generations. Although most people demonstrate time preference in their own consumption behavior, which may vary by the good or service at hand, it may not be appropriate for society to demonstrate a similar preference when deciding between the well-being of current and future generations. Future citizens and residents who are affected by such choices cannot take part in making them, and today's society must act with some consideration of their interest. Some believe that it is ethically impermissible to discount the utility of future generations.[citations omitted] That is, government should treat all generations equally.[27]

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[22] EPA 2023 EA, passim.

[23] White House Office of Management and Budget, Issuance of Revised OMB Circular No. A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs." A Notice by the Management and Budget Office on 11/13/2023. Circular A-94, Appendix D: Discount Rates for Benefit-Cost Analysis, https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-94AppendixD.pdf .

[24] Ibid.

[25] See, e.g., Frank Ackerman and Lisa Heinzerling, Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection, 150 U. Pa. L. Rev. 1553, 1571 (2002), https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=3277&context=penn_law_review (questioning the use of discounting to address long-term, intergenerational harms, including those associated with "persistent toxins"); see also NYU Institute for Policy Integrity, Comments on National Primary Drinking Water Regulations: Lead and Copper Rule Revisions (Feb. 12, 2020), https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1478 https://policyintegrity.org/documents/EPA_Lead_Copper_Rule_Comments_2020.02.11.pdf (arguing for a "3% or lower discount rate" for benefits of EPA drinking water rule). https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1478

[26] OMB Circular A-4, supra note 20.

[27] Ibid at 80. & note 168 (citing, inter alia, Derek Parfit, Reasons and Persons (Oxford: Oxford University Press, 1984).

While OMB does not rule out any discounting of future benefits when there are intergenerational effects, the Office says that "it is often appropriate to discount long-term consumption benefits and costs—**although at a lower rate than the near term effects more likely to fall on a single generation**—if there is an expectation that future generations will be wealthier and thus will value a marginal dollar of benefits or costs by less than those alive today…."[28]

In the event a discount rate for future benefits is applied, a lower discount rate is more appropriate for this rulemaking than a higher, capital-based discount rate given the many decades-long timeframe for analysis, the impacts on future generations, and the extent of uncertainties in the magnitude of future health benefits.[29] EPA's draft preamble does not include or explain its determination as to why a discount rate is appropriate for intergenerational benefits as much or most of the benefits of the LCRI will be enjoyed by future generations of children and adults no longer exposed to lead. Instead, the EA does not even analyze a 2% discount rate, and presents benefit estimates based only on a 3% consumption-based discount rate and a 7% capital-based discount rate, as if they were equally relevant to assessing the net benefits of the rule.[30] Thus, if EPA continues to apply a discount rate in the final EA, it should use a reduced consumption-based discount rate—below 2%—as the 3% rate used in the Draft EA does not reflect the OMB Circulars or the best available economic data and literature.[31]

The agency fails to justify its use of 3% and 7% discount rates for future benefits. These discount rates, and particularly the 7% rate are wholly inappropriate and result in a substantial understatement of the benefits. Instead, EPA should use a zero discount rate for the intergenerational and long-term future health benefits over the next several decades of the rule. EPA must fully justify its use of a discount rate more than zero.

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[28] Ibid at 80 (emphasis added)

[29] Peter Howard & Jason A. Schwartz, *Valuing the Future: Legal and Economic Considerations for Updating Discount Rates*, 39 Yale J. Regul. 595, 599, 603 (2022) https://policyintegrity.org/files/publications/09.-Howard-Schwartz-Final_.-595-657_.pdf (arguing that a consumption-based discount rate is appropriate for estimating benefits of rules designed to affect public health over a long time horizon).

[30] EPA 2023 EA, supra, Chapter 5.

[31] See, Ackerman & Heinzerling, supra note 24, NYU Institute for Policy Integrity, note 24, Derek Parfit, supra note 26, and Howard & Schwartz, supra note 28.

Section 13: Water Systems Can Replace all LSLRs Without Making Water Bills Unaffordable

Many water utilities and water utility associations have opposed a requirement to replace all lead service lines based on the cost of compliance, which they say may make water bills unaffordable, especially for low-income customers. The unavoidable implication is that millions of people should resign themselves to drinking unsafe water if low-income residents in their community cannot afford to pay higher water bills. Ironically, many people at risk of lead in their drinking water are the same people who would supposedly be "protected" from unaffordable water bills if lead pipes are allowed to remain in use. In reality, this approach would only perpetuate existing inequities in access to safe and affordable drinking water—inequities that the SDWA is meant to remedy and that President Biden, Vice President Harris, and EPA Administrator Regan have committed to addressing.

Moreover, cost-based opposition to a strong LCRI is based on a faulty premise that compliance, including replacement of all lead service lines, would necessarily result in unaffordable water bills. This is simply false.

Opponents of a strong LCRI overstate both the likely compliance costs and the significance of those costs relative to the overall scale of necessary investments in water infrastructure. Meanwhile, they overlook strategies they can use—in collaboration with EPA and the states—to ensure affordable access to safe water. When issuing the final LCRI, EPA should highlight strategies that water systems can use to comply without making water bills unaffordable for low-income customers.

Critically, as described below, utilities should be expected to maximize the use of available federal water infrastructure funds and other non-ratepayer sources of funds for lead service line replacement. Because residents in many communities have spent decades paying for contaminated water, it is of the utmost importance that water utilities prioritize accessing those non-ratepayer funds before asking those same families to spend more money to fix a problem they did not ask for (and a problem that often was created by the utility itself, which often required, installed, or approved the use of lead pipes, without knowledge of the homeowner). Where last-resort rate increases are demonstrated to be necessary, utilities should adopt strategies—including many EPA has specifically recommended—that can increase total rate revenues *without burdening low-income customers*.

A. AWWA has consistently overstated the likely costs of compliance

As discussed in section 12 of these comments, the LCRI Economic Analysis presents a reasonable estimate of per-LSLR costs; higher cost estimates put forward by AWWA are inflated; and water systems can further reduce costs of full LSLR through careful attention to critical project planning and local policy decisions.

We note that AWWA's exaggerated cost estimates fit a pattern of grossly inflated SDWA compliance cost estimates by AWWA. For example, AWWA funded a recent study by Black and Veatch that suggests EPA's proposed Maximum Contaminant Levels for six PFAS will cost $3.8

billion per year,[1] when EPA's more sober assessment concludes that they will cost more like $777 million per year. A careful comparison of the AWWA and EPA estimates by Safe Water Engineering, which was submitted to EPA, concluded that AWWA has substantially inflated the anticipated PFAS treatment costs with a variety of unsupported assumptions that cause the purported costs to balloon.[2]

B. LCRI compliance costs would be a small fraction of water systems' overall capital and operating expenses

Even using the water utility sector's inflated cost estimates, opponents of a strong LCRI overstate the significance of those costs relative to the overall scale of investments in water infrastructure. Lead service line replacement and control of lead in tap water are not the major drivers for increased water bills—and they should be prioritized within water utilities' capital improvement programs because of the critical need to protect human health from toxic lead.

The utility sector routinely offers numbers in the multiple trillions of dollars to fully address water infrastructure needs.[3] Whatever the precise number, it is clear that the cost of lead service line replacement is only a small percentage of total water infrastructure needs and is not the primary driver of affordability concerns. Considering the comprehensive scope of water utility infrastructure and service provision, lead service line replacement costs represent an even smaller percentage of utilities' total budgetary needs, when both capital and operating expenses are included.[4] Further, whereas most water utility investment requires ongoing planning for reinvestment, maintenance, and replacement—meaning that projected needs continue to increase when planning horizons are expanded—lead service line replacement is a one-time expense.

C. Compliance costs can be funded without making bills unaffordable for low-income residents

Water utilities often overlook steps that utilities, states, and EPA can take to fund compliance costs *without relying exclusively on ratepayers*, and *without imposing unaffordable burdens on low-income residents*. Affordability of water bills for low-income customers is, and will continue to be, a challenge for water utilities with or without an obligation to replace lead service lines. The affordability challenge calls for holistic solutions to more equitably fund

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[1] AWWA statement on proposed PFAS drinking water standards, March 14, 2023, https://www.awwa.org/AWWA-Articles/awwa-statement-on-proposed-pfas-drinking-water-standards#:~:text=recent%20study%20conducted%20by%20Black%20%26%20Veatch%20on%20behalf%20of%20AWWA.

[2] Elin Betanzo, Safe Water Engineering, May 30, 2023, submitted as attachment to comments on the proposed PFAS MCL by Earthjustice, NRDC et al, https://www.regulations.gov/comment/EPA-HQ-OW-2022-0114-1808.

[3] See, e.g., AWWA, *Buried No Longer*, https://www.awwa.org/Portals/0/AWWA/Government/BuriedNoLonger.pdf?ver=2013-03-29-125906-653 (more than $1 trillion for water mains alone over 25 years); Value of Water Campaign & American Society of Civil Engineers, *The Economic Benefits of Investing in Water Infrastructure—How a Failure to Act Would Affect the US Economic Recovery*, https://uswateralliance.org/wp-content/uploads/2023/09/VOW-Economic-Paper_1.pdf, (over $3 trillion water and wastewater infrastructure need over 20 years).

[4] See Value of Water Campaign & American Society of Civil Engineers, *The Economic Benefits of Investing in Water Infrastructure—How a Failure to Act Would Affect the US Economic Recovery*, https://uswateralliance.org/wp-content/uploads/2023/09/VOW-Economic-Paper_1.pdf (over $100 billion annual operating expenses for water and wastewater, equivalent to $2 trillion over 20 years).

investment in water infrastructure, while prioritizing investments like lead service line replacement that meet critical public health needs.

A recent EPA guidance document under the Clean Water Act (the Feb. 2023 "Financial Capability Assessment Guidance"[5]) pushes wastewater systems to pursue "strategies for lowering costs and reducing impacts on low-income households"[6] using tools that "ensure that a financial strategy is in place to support needed infrastructure upgrades without overburdening their most vulnerable ratepayers."[7] In the guidance, EPA identifies "strategies for communities to support affordable utility rates while planning investments in water infrastructure that are essential to protecting clean water….Tools such as variable rate structures, consumer assistance programs, and grants or subsidies from the…State Revolving Fund are some of the tools outlined in the guidance."[8] All of those strategies are equally applicable to water systems. EPA's guidance further states that technical assistance is available through EPA concerning these approaches.

When issuing the final LCRI, EPA should highlight these and other funding and financing strategies that water systems can use to comply with the rule without making bills unaffordable for low-income households. As the final rule is implemented, EPA, the states, and water systems must all work to deploy these strategies.

We describe below several of the most important strategies, including maximizing use of available federal funding, especially for disadvantaged communities; maximizing use of other non-ratepayer sources of funding; and adopting equitable rate structures and other programs that can increase rate revenues without burdening low-income customers. We urge EPA to ramp up its technical assistance offerings on these topics.

i. Maximize the use of available federal funding, especially for disadvantaged communities

To help communities achieve the Biden Administration's goal of replacing all lead service lines within 10 years, Congress passed the Bipartisan Infrastructure Law (BIL). On top of federal and state funds available through the "base" Drinking Water State Revolving Fund program, the BIL provides $15 billion for water utilities to replace lead service lines, of which 49% must be provided as grants and forgivable loans to "eligible recipients," meaning disadvantaged communities.[9] Further, the BIL includes an additional $11.7 billion for drinking water infrastructure needs generally, including lead service line replacement (LSLR), of which

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[5] See EPA, Clean Water Act Financial Capability Assessment Guidance, February 2023, https://www.epa.gov/system/files/documents/2023-01/cwa-financial-capability-assessment-guidance.pdf.
[6] EPA, FAQ: Financial Capability Assessment Guidance Questions & Answers, Feb. 1, 2023, https://www.epa.gov/system/files/documents/2023-02/cwa-fca-questions-and-answers.pdf.
[7] EPA, EPA Announces Financial Capability Guidance to Support Communities and Ensure Clean, Affordable Water, Feb. 1, 2023, https://www.epa.gov/newsreleases/epa-announces-financial-capability-guidance-support-communities-and-ensure-clean.
[8] EPA, Fact Sheet: Clean Water Act Financial Capability Assessment Guidance, February 2023, https://www.epa.gov/system/files/documents/2023-02/cwa-fca-fact-sheet.pdf.
[9] Pub. L. No, 117–58, 135 Stat. 429, 1400-01 (Nov. 15, 2021); EPA, "Memorandum: Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law," Mar, 8, 2023, https://www.epa.gov/system/files/documents/2022-03/combined_srf-implementation-memo_final_03.2022.pdf.

49% is for grants and principal forgiveness to disadvantaged communities. LSLRs done with these funds come at no cost to ratepayers.

Other BIL funding, though not eligible to be used for LSLR costs, indirectly supports water utilities' ability to pay for LSLR by reducing the need to rely on ratepayer funds for capital improvements. This includes, for example, $9 billion in grants for water utilities to address emerging contaminants such as PFAS. For water utilities that function as combined water and wastewater utilities, the BIL's $11.7 billion in clean water infrastructure funds also offset capital improvement costs for wastewater and stormwater management, which would otherwise be passed on to ratepayers on their combined water and sewer bills. In addition, of course, there is funding available under the State Revolving Funds that have been federally capitalized and matched by state funds over the past two and a half decades, which continue to receive annual appropriations of about $1 billion or more. A significant portion of those funds also is reserved for grants and forgivable loans for disadvantaged communities.

Other federal funds are also available, such as Community Development Block Grants (CDBG), which are a major source of water infrastructure funding nationally.[10] EPA has highlighted CDBG as an available source of funds for lead service line replacement, specifically.[11]

Additionally, forty states have collectively dedicated almost $19 billion dollars in American Rescue Plan Act (ARPA) State Fiscal Recovery Fund monies towards water infrastructure, much of which is available to municipal water (and/or wastewater) utilities.[12] The Treasury Department's ARPA rules explicitly authorize the use of these funds for full lead service line replacement, while prohibiting their use for partial replacements.[13]

Many other federal funding programs also are available to help pay for lead service line replacement, including the Lead Reduction Project program,[14] and the Small, Underserved and Disadvantaged Communities Program.[15] EPA has highlighted these and other funding opportunities for LSL replacement on its website[16] and should discuss them in the final rule and in its outreach to the public and water systems. EPA should continue to bolster its technical assistance efforts to ensure that eligible communities can access all available grants and subsidized loans. Likewise, EPA should bolster its oversight of states' implementation of BIL funds, to ensure that funds designated for disadvantaged communities reach water utilities with

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[10] The Congressional Research Service (CRS) reports that, "[b]etween FY2016 and FY2020, disbursements by CDBG recipients for water and sewer improvements have averaged $388.4 million per year." CRS, Federally Supported Projects and Programs for Wastewater, Drinking Water, and Water Supply Infrastructure, Updated August 2, 2022, at 45, n. 132, https://crsreports.congress.gov/product/pdf/R/R46471.

[11] https://www.epa.gov/ground-water-and-drinking-water/funding-lead-service-line-replacement#CDBG.

[12] National Council of State Legislatures, ARPA State Fiscal Recovery Fund Database, https://www.ncsl.org/fiscal/arpa-state-fiscal-recovery-fund-allocations (last visited May 22, 2023).

[13] 31 C.F.R. §§ 35.6(e)(1)(iii)(B), (iv)(A); see U.S. Department of the Treasury, Coronavirus State and Local Fiscal Recovery Funds, 87 Fed. Reg. 4338, 4414 (Jan. 27, 2022).

[14] SDWA section 1459B, 42 U.S.C. 300j-19b.

[15] SDWA section 1459A, 42 U.S.C. 300j-19a.

[16] Identifying Funding Sources for Lead Service Line Replacement, https://www.epa.gov/ground-water-and-drinking-water/identifying-funding-sources-lead-service-line-replacement.

the greatest affordability challenges. EPA should closely track distribution of BIL funds (and other federal funds) and continue efforts to identify gaps in funding needs that can be identified for Congressional appropriators.

ii. Maximize use of other non-ratepayer sources of funding to replace lead service lines

EPA should strongly encourage innovative funding approaches to pay for lead service line replacements. For example, the EPA Administrator and Vice President Harris have celebrated the City of Newark, New Jersey's innovative program to expeditiously replace over 23,000 lead service lines at no cost to ratepayers, which was primarily financed through bonds that are being repaid with revenue provided by leasing fees from the local port authority.[17] In Madison, Wisconsin, the water utility used revenue from allowing cell phone towers to be affixed to utility property to help fund lead service line replacements.[18] Such innovative solutions can help fund these important investments.

iii. Adopt equitable rate structures and other programs to increase utility revenue without burdening low-income customers

As stated above, EPA's Financial Capability Assessment (FCA) Guidance provides a toolkit of approaches that utilities can use to increase investment in water infrastructure without making bills unaffordable for low-income customers. In addition to securing grants and subsidized loans, which reduce the costs of capital improvements for *all* ratepayers, the guidance identifies many steps that utilities can take to reduce costs for low-income customers specifically. These include:

- capping bills for low-income residents at a percentage of income;
- adopting "lifeline" rates with a low charge for an initial amount of usage sufficient to meet each household's essential needs;
- offering bill discounts specifically to low-income customers;
- helping low-income customers repair plumbing leaks and replace old, water-guzzling toilets, which can both reduce utilities' water supply costs and provide ongoing bill reductions for low-income households.[19]

[17] See Gary Brune, Lead Service Line Replacement at a Blistering Pace Newark, New Jersey, Feb 10, 2022, https://www.jerseywaterworks.org/latest-news/lead-service-line-replacement-at-a-blistering-pace-newark-new-jersey/; Andrew Coen, Port Authority lease deal will help Newark replace lead pipes, October 02, 2019, The Bond Buyer, https://www.bondbuyer.com/news/port-authority-lease-deal-will-help-newark-replace-lead-pipes.
[18] EPA, LSLR Financing Case Study: Madison, WI, https://www.epa.gov/dwreginfo/lslr-financing-case-study-madison-wi.
[19] See FCA Guidance, pp. C-6 through C-11.

There are water utilities around the country using each of these approaches, to varying degrees. In addition to examples cited in the FCA Guidance, many of the best examples are collected in an extensive water affordability "toolkit" published last year by the Natural Resources Defense Council and National Consumer Law Center.[20] That toolkit also provides detailed recommendations on best practices and factors to consider when implementing these strategies.

[20] Natural Resources Defense Council and National Consumer Law Center, *Water Affordability Advocacy Toolkit* (June 2022), https://www.nrdc.org/resources/water-affordability-advocacy-toolkit. Three of the most relevant chapters of from this publication are entitled "Equitable Water Rates," "Affordability and Assistance Programs," and "Water Efficiency and Plumbing Repair Assistance."

Section 14: EPA Must Insert Provisions in the Final LCRI that Improve Compliance with and Enforcement of the Rule and Provide Transparency to EPA and the Public

The proposed LCRI contains no provisions designed to improve: compliance with the LCR; the collection and comprehension of accurate sampling data; or, enforcement of the Rule. The final version must do so. The LCR is infamous for: the lack of water systems' compliance with it;[1] its *disincentives* to comply with the rule; the paltry and inaccurate data provided to EPA; and, by EPA's own admission, the inability of EPA to enforce the rule, largely because of those factors. As Cynthia Giles, the former Assistant Administrator for EPA's Office of Enforcement and Compliance Assurance from 2009 to 2017, and presently Senior Advisor in EPA's Office of Air and Radiation, aptly put it when commenting on the proposed LCRR:

> All the regulatory provisions in the world don't matter if the regulated systems aren't following them. Rule improvements have little meaning if the underlying reality is that violations are rampant but largely invisible.[2]

An NRDC report summarizing the limited data that states actually report to EPA found that from 2018 to 2020, 28 million people were served by 372 drinking water systems with over 530 health-based violations for lead.[3] And, as former Assistant Administrator Giles noted, there is a "mountain of evidence that violations of the lead [and copper] rule may be as much as ten times what EPA's data claims." Indeed, the most recent publicly available EPA audit of LCR data found that 92 percent of LCR treatment technique violations recorded in state files were not reported to EPA.[4]

As the Biden administration has already acknowledged, lack of compliance, transparency, and enforcement is an environmental justice issue that must be addressed. Executive Order 14008 provides that EPA shall "strengthen enforcement of environmental violations with disproportionate impact on underserved communities…and create a community notification program to monitor and provide real-time data to the public on current environmental pollution, including emissions, criteria pollutants, and toxins, in frontline and fenceline communities—places with the most significant exposure to such pollution."[5]

As discussed further below, the final LCRI therefore must make changes that address: 1) accurate data submission and transparency, and, 2) rampant noncompliance with the LCR. Only then will the positive changes proposed in the LCRI—and hopefully improved upon in the final LCRI—have any practical effect.

More specifically, EPA must require direct electronic reporting of LCRI monitoring results from state-certified laboratories to EPA and create a web-based portal for public access to

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[1] GAO, Additional Data and Statistical Analysis May Enhance EPA's Oversight of the Lead and Copper Rule, GAO-17-424, (Sept. 2017), at 3.
[2] Comments by Cynthia Giles, *Comments on Proposed Revisions to the Lead and Copper Rule*, Docket ID No. EPA-HQ-OW-2017-0300 (Feb. 4, 2020).
[3] Kristi Pullen Fedinick, *Millions Served by Water Systems Detecting Lead,* NRDC, (May 13, 2021), https://www.nrdc.org/resources/millions-served-water-systems-detecting-lead.
[4] EPA Office of Water, 2006 Drinking Water Data Reliability Analysis and Action Plan, EPA 816-R-07-010, March 2008, https://bit.ly/2YAJv1U.
[5] Exec. Order No. 14008 §222(b), 86 Fed. Reg. 7619, 7631 (Feb. 1, 2021).

national drinking water data. EPA should also require all LCRI treatment technique violations manually or automatically determined by the state to be simultaneously reported to the public water system and to EPA, and EPA should also post that information on the portal. Finally, EPA should require water systems to file quarterly reports indicating whether they have complied with LCR requirements. We provide suggestions for the content of those reports at the end of this Section.

A. EPA must implement and require direct electronic reporting of violations so it can increase compliance with the LCR through oversight and affected communities can receive timely and accurate information

There are three types of violations of the LCR: 1) monitoring violations; 2) reporting violations; and, 3) health-based violations. Obviously, health-based violations, such as a failure to comply with corrosion control requirements or failure to remove lead service lines as required, pose immediate and known public health threats. But the other types of violations are important, too. Monitoring violations such as a failure to test for lead in tap water as required may mask ongoing lead contamination problems that are not detected, whether intentionally or unintentionally. Reporting violations, such as a failure to issue public notification of a violation or failure to report test results to the state and public, undermine the awareness of the public of possible lead contamination problems, and harm states' and EPA's ability to oversee public water systems' compliance with the rule.

In general, the data in the Safe Drinking Water Information System Federal Version (SDWIS Fed) play a critical role in helping EPA monitor states' and water systems' compliance, which is a key component in how EPA performs its oversight role with respect to the LCR.[6] But that system does not work for the LCR. EPA does not currently receive all water system LCR compliance data. The limited scope of data currently required to be reported to EPA, and the anemic compliance with reporting of that limited scope, renders EPA oversight impossible, allowing the flagrant noncompliance with the LCR to persist.[7] More specifically, water systems are supposed to provide monitoring data to their primacy agencies and often these are recorded in a database called SDWIS/State.[8] The primacy agencies, however, do not then submit that monitoring and reporting data to EPA.[9] Rather, primacy agencies mainly submit only violations data to EPA through SDWIS/Fed, not monitoring results.[10] And as noted earlier, past EPA and GAO audits have found that often violations known to states are not passed on to EPA. As EPA has acknowledged, "[t]his limits EPA's ability to determine the completeness of the data received by the Agency and hinders the development of national training, technical assistance, and oversight."[11]

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[6] GAO, Additional Data and Statistical Analysis May Enhance EPA's Oversight of the Lead and Copper Rule, GAO-17-424, (Sept. 2017), at 3.
[7] *See id.* at 2.
[8] GAO, Unreliable State Data, supra note 2 at 9.
[9] EPA receives monitoring data from only Wyoming, Washington, D.C., and tribal lands other than the Navajo Nation. *Id.* at 2.
[10] EPA, Drinking Water Compliance Monitoring Data Strategic Plan, EPA-810-R-19-002 (July 2022) at 4.
[11] *Id.* at 2.

But even the limited violation data reported to EPA is unreliable for three reasons: (1) inaccurate monitoring; (2) anemic reporting; and, (3) reporting errors, whether intentional or not, from a convoluted reporting system. First, the known lack of compliance with the LCR results in monitoring data that is inaccurate. LCR monitoring is subject to inadvertent errors, but it is widely known that the rule also is subject to rampant intentional cheating and gaming by water systems to avoid having a 10 percent lead action level exceedance that would require corrective action, mechanisms that AWWA refers to as "loopholes."[12] The LCR has "very specific sampling procedures,"[13] and, as noted earlier, the proposed rule would strengthen those procedures.[14] But even if finalized, those improved sampling procedures might have little practical effect because, as EPA has acknowledged, the sampling procedures "are not always followed."[15] EPA has also recognized that some water systems do not test Tier 1 sites or fail to return to sites with previous high levels, in violation of the rule.[16] Some water systems intentionally sample incorrectly, in ways known to miss worst-case lead levels and some increase the number of sites tested in an apparent attempt to keep the percentage of lead action level exceedances below 10 percent.[17]

That LCR monitoring does not accurately capture the highest lead levels in a water system as it is supposed to can be seen by comparing recent lead testing results from water distributed by the Portland Water Bureau (PWB) in Portland, Oregon. The 90th percentile compliance testing results for the LCR were between 6 and 11 ppb for five of the six sampling periods during 2021, 2022, and 2023, with the remaining one at 21 ppb.[18] These results meant that there was no LAL exceedance publicly recorded for five of those periods, which led the

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[12] *See* Marc Edwards et al., *Gaps in the EPA Lead and Copper Rule That Can Allow for Gaming of Compliance*, (2009), https://mediad.publicbroadcasting.net/p/michigan/files/201511/Gaming_the_LCR_WASA_2003-2009_Oct_2009.pdf; Carol D. Leonnig et. al., *Lead Levels in Water Misrepresented Across U.S.*, Wash. Post (Oct. 5, 2004), www.washingtonpost.com/wp-dyn/articles/A7094-2004Oct4.html; Oliver Milman, *US Authorities Distorting Tests to Downplay Lead Content of Water*, Guardian (Jan. 22, 2016), https://www.theguardian.com/environment/2016/jan/22/water-lead-content-tests-us-authorities-distorting-flint-crisis; Oliver Milman & Jessica Glenza, *Philadelphia's Water-Testing Procedures Are 'Worse Than Flint' – Expert*, Guardian (Jan. 28, 2016), https://www.theguardian.com/environment/2016/jan/28/philadelphia-water-testing-crisis-flint-health-risk; Letter from Lisa Daniels, Ass'n of State Drinking Water Admin'rs, to Scott Pruit, EPA, regarding State Drinking Water Program Comments on Long-Term Revisions to the Lead and Copper Rule, 6, (Mar. 8, 2018), https://asdwa.files.wordpress.com/2018/03/final-lt_lcr-federal-consultation-asdwa-comments_appendices.pdf.

[13] EPA, Lead and Copper Rule Revisions Presentation at Federalism Consultation Meeting (Jan. 8, 2018) at slide 5, https://www.epa.gov/sites/default/files/2018-01/documents/eo_13132_federalism_consultation_presentation-final_1.9.2018.pdf.

[14] *See* Section 7.B.

[15] EPA, Lead and Copper Rule Revisions Presentation at Federalism Consultation Meeting (Jan. 8, 2018) at slide 5, https://www.epa.gov/sites/default/files/2018-01/documents/eo_13132_federalism_consultation_presentation-final_1.9.2018.pdf.

[16] *See, e.g.,* EPA Region III, Emergency Administrative Order Docket No. CWA-03-2023-0110DS, ¶16, (July 14, 2021), https://yosemite.epa.gov/OA/RHC/EPAAdmin.nsf/Filings/5D20FEB828000B458525871300486662/$File/Clarksburg%20Water%20Board.%20PWS%20Emergency%20Administrative%20Order.%207.14.2021.pdf; *see also* Brenda Goodman et al., *Lax Oversight Wakens Lead Testing of Water*, WebMD, (June 12, 2017) https://www.webmd.com/special-reports/lead-dangers/20170612/lead-water-testing.

[17] *See* Marc Edwards et al., *Gaps in the EPA Lead and Copper Rule*, supra note 19.

[18] https://yourwater.oregon.gov/leadcopper.php?pwsno=00657; Slide 3 of Frank Mazzola dated January 18, 2024.

State of Oregon to designate their CCT as optimized.[19] However, PWB conducted separate water testing outside of the LCR over those three years to help assess the effectiveness of their CCT. The results of that sampling showed 90th percentile results of 46.6 ppb in 2021, 39.1 ppb in 2022, and 28.8 ppb in 2023.[20] (The cause of that discrepancy is unclear, but previously, after a LAL exceedance, PWB improperly changed sites sampled for LCR compliance monitoring that resulted in it avoiding an LAL exceedance.[21]) This discrepancy demonstrates that whether purposeful or inadvertent, the LCR is not being properly followed or is being gamed, and thus persons are being placed at even higher risk than the construct of the LCR allows with 15 ppb LAL and 90th percentile.

In addition, some water systems whose monitoring actually shows a lead action level exceedance may not report the data to their primacy agencies.

Without accurate monitoring and reporting data, the number and location of water systems that have a lead action level exceedance requiring corrective action, and the number and location of systems that would have had an exceedance if the Rule's monitoring requirements had been followed, cannot be surmised or overseen. *See* EPA, 2006 National Public Water Systems Compliance Report, EPA-K-09-002 (Mar. 2009) at 5 ("If a system did not monitor the quality of its water, it is impossible to know if it has violated a health-based requirement. For this reason, a system's significant failure to monitor and report is a major violation that must be addressed and corrected.").

Second, very few known LCR health violations are reported to EPA in practice. As noted earlier, an EPA audit published in 2008 found that ***only eight percent*** of LCR treatment technique violations were reported to SDWIS/FED and thus to EPA.[22]

Finally, even when water systems report in practice, the convoluted system for reporting—water systems to primacy agencies and then primacy agencies to EPA—provides another avenue for inaccurate data. Indeed, "on the basis of its 2002 through 2004 audits, EPA reported that the 37 states it audited did not report or inaccurately reported about 49 percent of health-based violations committed by community water systems to SDWIS/Fed."[23] As EPA has explained, "[t]he shorter the distance from the beginning of the lifecycle to the end use in

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[19] Letter from Oregon Health Authority to Portland Water Bureau (PWB), dated December 23, 2023 documenting that PWB's CCT is deemed optimized.

[20] *See* Sentinel Homes Data, Portland Water Bureau, for 2021, 2022, and 2023; Slides 1 and 2 of Frank Mazzola dated January 18, 2024.

[21] *See* "Lead Levels in Water Misrepresented Across U.S.," Washington Post, Oct. 8, 2004, https://bit.ly/3HMnnZg https://www.washingtonpost.com/archive/politics/2004/10/05/lead-levels-in-water-misrepresented-across-us/085c8f5b-22e5-4975-8abd-11751e08abab/?pwapi_token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJyZWFzb24iOiJnaWZ0IiwibmJmIjoxNzA2NzYzNjAwLCJpc3MiOiJzdWJzY3JpcHRpb25zIiwiZXhwIjoxNzA4MTQ1OTk5LCJpYXQiOjE3MDY3NjM2MDAsImp0aSI6IjU4ZGM5NTQ2LWNmNWMtNDg0Mi1iNzNmLWQzNWQ5MTBiNWI2NyIsInVybCI6Imh0dHBzOi8vd3d3Lndhc2hpbmd0b25wb3N0LmNvbS9hcmNoaXZlL3BvbGl0aWNzLzIwMDQvMTAvMDUvbGVhZC1sZXZlbHMtaW4td2F0ZXItbWlzcmVwcmVzZW50ZWQtYWNyb3NzLXVzLzA4NWM4ZjViLTIyZTUtNDk3NS04YWJkLTExNzUxZTA4YWJhYi8ifQ.eEe7EZbWlf8vLomEd8j4ChrVSDZnU_XI5SChfv_q4uQ&itid=gfta

[22] EPA, 2006 Drinking Water Data Reliability Analysis and Action Plan, supra note 1 at i. Audits were discontinued in 2010 because of funding constraints. GAO, Unreliable State Data, supra note 2.

[23] GAO, Unreliable State Data, supra note 2 at 14.

analysis the better, since an error can be introduced into the data flow each time the data changes hands."[24]

It is therefore clear that the current LCR reporting system must be significantly revamped to eliminate the convoluted reporting structure and to provide EPA with access to more data. EPA itself has recognized this. In 2009, in light of the abysmal quality of data moving through SDWIS, EPA decided to replace SDWIS,[25] touting "SDWIS Prime," a shared database that would give EPA "direct access to the states' raw monitoring data" (rather than just violation data) thereby improving "EPA's ability to better understand national patterns of compliance and to diagnose problems faced by states."[26] The redesigned system would "provide [EPA] with greater access to, and oversight of, the states' determinations of SDWA violations,"[27] by reducing complexity in the convoluted reporting structure.

Congress also weighed in on the matter. Congress previously recognized the serious shortcomings in EPA's data collection and management systems for drinking water, and in 2018, passed the America's Water Infrastructure Act ("AWIA"), requiring EPA to, within one year of enactment, "develop and provide to Congress a strategic plan for improving the accuracy and availability of monitoring data collected."[28] EPA was required to provide "recommendations on practicable, cost-effective methods and means that can be employed to improve the accuracy and availability of submitted data."[29] .

But SDWIS Prime was never developed.[30] And EPA has perplexingly both dropped both the urgency for reforming reporting and the narrowed the scope of such reform. EPA did not submit to Congress a strategic plan as mandated by AWIA until July 2022, almost three years after it was required to. EPA recently started developing what it calls "Drinking Water State-Federal-Tribal Information Exchange System" or "DW-SFTIES." But DW-SFTIES has not been described as a one-stop shop program for both monitoring and health violation data. Rather, DW-SFTIES would be a centrally hosted web-based database to "replace *SDWIS State* with software that helps states perform day to day implementation of the drinking water program, and that facilitates easier information exchange among primacy agencies, regulated entities, EPA Regions, and EPA headquarters."[31] Thus, DW-SFTIES will not solve the complexity of LCR reporting like SDWIS Prime would have.

EPA took a step forward by recently proposing a rule revising the Consumer Confidence Report Rule that would require primacy agencies to report all drinking water monitoring data to EPA annually.[32] It is questionable, however, what practical effect that proposed rule alone, if promulgated, will have with respect to lead. As discussed above, primacy agencies currently fail

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[24] Drinking Water Compliance Monitoring Data Strategic Plan, supra note 10 at 5.
[25] This decision was informed by an alternatives analysis that suggested that replacing SDWIS was more in line with cost and data quality objectives. GAO, Unreliable State Data, supra note 2 at 37 n.55.
[26] GAO, Unreliable State Data, supra note 2 at 38.
[27] *Id.*
[28] PL 115-270 §2011(1)
[29] PL 115-270 §2011(3
[30] *See* April 25, 2023 letter from environmental organizations to Assistant Administrator Radhika Fox, in Appendix.
[31] SDWIS Modernization Board, *Safe Drinking Water Information System (SDWIS) Modernization Board Charter*, (Mar. 21, 2020) at 1 (emphasis added).
[32] *Id.*

to report lead data to EPA that they are already required to (almost no monitoring and reporting violations and a small percentage of health violations that is also significantly smaller than reporting on other contaminants[33]). There is no reason to think an additional reporting requirement alone would result in compliance with the requirement. That proposed rule also: (1) maintains the convoluted reporting system (water systems to primacy agencies and primacy agencies to EPA) that causes failures to report and inaccurate reporting; (2) would not affect the unreliability of the underlying monitoring data; and (3) contains no measures designed to increase compliance with it or other LCR provisions.

But the proposed LCRI does not include any provisions to solve the problems outlined above and fulfill Congress's directive in AWIA and that in Executive Order 14008.

It is therefore imperative that EPA institute in the final LCRI a mandatory direct electronic reporting rule. Such a mandate would help solve: (1) the low rate at which violations are reported; and (2) the inaccessibility of data amongst the public and other stakeholders. It must immediately adopt a computer program to accompany that mandate. Any new program EPA institutes must go beyond offering "tools to assist with [primacy agencies'] required quarterly reporting of violations" to EPA as DW-SFTIES is designed for.[34] The mandatory electronic reporting program must allow direct one-stop reporting of: (1) monitoring data; and, (2) monitoring, reporting, treatment technique, and health violation data that primacy agencies and EPA can access. If EPA determines it is necessary, it could allow a short (perhaps 7-day) delay after reporting to allow states or water systems to correct any errors, and any such corrections should be required to be justified and posted online. New Jersey implemented a streamlined electronic data reporting system that originates from the lab analyzing drinking water samples over 15 years ago.[35] EPA could look to that program as guidance for developing that necessary information transmission mechanism. And, as described in more detail at the end of this Section, the LCRI should also require electronic reporting to EPA's database of any corrosion control and LSLR deadlines, sanitary surveys including a checklist of significant deficiencies and deadlines for follow-up, and whether those deadlines have been met.

B. EPA must create an accessible web-based portal for public access to national drinking water sampling data and other important information

EPA should also create a web-based portal for public access to national drinking water compliance and monitoring data and other information as it recommended in 2015.[36] As EPA has recognized, "better public understanding of drinking water quality… is essential to making well informed local decisions on drinking water."[37] EPA has also recognized that "[a]ccess to drinking water compliance monitoring data can empower communities to take needed action. It

[33] EPA, 2006 Drinking Water Data Reliability Analysis and Action Plan, supra note 4 at i,19.
[34] E-Enterprise for the Environment, *Drinking Water State-Federal-Tribal Information Exchange System (DW-SFTIES) Board (Formerly SDWIS Modernization),* (Feb. 2023).
[35] *See* New Jersey E2 Reporting System Laboratory Participation Package, in Appendix.
[36] EPA, Drinking Water Action Plan, supra note 34 at 18.
[37] *Id*; *see also* National Primary Drinking Water Regulations: Consumer Confidence Report Rule Revisions, 88 Fed. Reg. 20092, 20094 (Apr. 5, 2023) (to be codified at 40 CFR pt. 141,142) ("[i]mproving access to and clarity of drinking water data [allows] customers of community water systems [to] make informed decisions about their health and the health of their families.").

also provides a more complete picture of water quality than simple violation information, and this can improve consumer confidence or identify a potential problem."[38]

EPA should make the following information available to the public on the web portal, some of which has been recommended in earlier parts of these comments:

- Water system quarterly reports per suggestion below in Section 14.C.1 & .2 (which may include some of the information set forth below)
- Compliance monitoring data[39]
- Any supplemental lead monitoring conducted by or on behalf of the water system
- WQP monitoring results
- School and childcare testing data, and lists indicating which schools/childcares opted for testing, which refused testing, and which were unresponsive
- Lead service line inventories
- Lead service line removal replacement plans
- Filter distribution plans
- Whether a water system met the required number and/or percentage of full LSLRs in the previous year. (yes/no)
- The number of customers or homeowners that denied access for a full service line replacement
- The number of partials water systems performed in the prior year, where they occurred, and why
- Corrosion control plans
- Monitoring results for water quality parameters required in optimal corrosion control plans
- Corrosion control studies
- Annual reviews and biennial audits per suggestion below in Section 14.C.5

It is encouraging that EPA stated in its proposed rule revising the Consumer Confidence Report Rule that it "intends" to make monitoring data public.[40] But EPA has stated an intention to make more drinking water information available to the public for over a decade,[41] yet even by EPA's admission, the publicly available data remains substantially incomplete, and EPA's front end for public access to SDWIS is largely impenetrable to average consumers.

C. The final LCRI must contain incentives for water systems to comply with the LCRI

Enforcement alone cannot solve the alarming level of noncompliance with the LCR or LCRI.[42] EPA therefore must incorporate tools into the final LCRI that encourage full compliance with the LCRI and effectively penalize water systems that fail to do so. do not

[38] Drinking Water Compliance Monitoring Data Strategic Plan, supra note 4 at 2; *see also* 88 Fed. Reg. 20092 at 20095.
[39] As set forth in Section 7.B.vi, we also recommend that EPA require large systems serving over 10,000 customers to make sampling data available online and include a link in a variety of materials.
[40] *See* National Primary Drinking Water Regulations: Consumer Confidence Report Rule Revisions, 88 Fed. Reg. at 20094.
[41] GAO, Unreliable State Data, supra note 2 at 37 n.54.
[42] *See, e.g.,* https://www.yalejreg.com/nc/symposium-giles-next-generation-compliance-07/.

comply to fulfill its duty. Fortunately, there are known, relatively easy tools EPA could use to reach those goals.

EPA, and specifically the Office of Water, has integrated some of the tools of "Next Generation Compliance" into its work.[43] Former Assistant Administrator Giles's published a book, Next Generation Compliance, in 2022 that drew from her experience at EPA with those tools. As set forth below, EPA could likely greatly increase compliance with the LCR if it incorporated some of those tools, explained below, into the final LCRI. Given the anemic rate of compliance with the LCR, this is something EPA must do to ensure the LCRI makes a practical difference.

In her book, Giles argues that the most important driver of compliance with environmental regulations is carefully and well-designed rules that employ creative strategies to set compliance as the default.[44] Chapter 1, entitled "Rules with Compliance Built In" discusses a select number of environmental regulations. In that chapter Giles describes four programs that have high rates of compliance and the aspects of those regulations that encourage compliance. She then discusses four programs with pervasive violations—one being the Lead and Copper Rule—and the aspects of those rules she identifies as causing such high rates of noncompliance. Giles discusses LCR provisions that incentivize water systems to *not* comply with the Rule and/or not uncover high lead levels.[45] Giles also sets forth a fairly straightforward roadmap of changes that can be made to the LCR to incentivize compliance. Below are some suggestions, extrapolated from Giles' discussion, that EPA should incorporate into the final LCRI:

1. Require direct electronic reporting of LCRI monitoring results and supplemental lead monitoring from state-certified laboratories to EPA and create a web-based portal for public access to national drinking water data. Any invalidated samples should be required to be noted, and an explanation provided as to why they were invalidated.

2. Require all LCRI treatment technique violations manually or automatically determined by the state to be simultaneously reported to the public water system and to EPA, which should also post that information on the portal. This should also include:

    a. Any corrosion control and LSLR deadlines
    b. Sanitary surveys including a checklist of significant deficiencies and deadlines for follow-up, and
    c. Whether those deadlines have been met.

3. Require water systems to electronically file, on an EPA database, quarterly reports certifying compliance or violations of the LCRI that a water system executive certifies as true, accurate and complete, subject to criminal penalties for false reporting.

[43] https://www.epa.gov/compliance/next-generation-compliance
[44] Cynthia Giles, *Next Generation Compliance: Environmental Regulation for the Modern Era* 1–13 (Oxford Univ. Press 2022).
[45] *Id*. at 34. Giles also filed comments on the proposed LCRR in 2020. *See* Cynthia Giles, Comments on the Agency's Proposed Revisions to its Lead and Copper Rule in the National Primary Drinking Water Regulations, 84 Fed. Reg. 61,684; Docket No. EPA-HQ-OW-2017-0300 (Feb. 4, 2020).

4. Set up the electronic filing program with a template to be complete for these quarterly filings that will: (a) automatically reject a report that is incomplete; and, (b) immediately determine when the data entered fails to meet the rule's requirements, resulting in automatic penalties.[46] The template should include at least the following:[47]

    a. Date range of monitoring.
    b. Number of sites monitored; if more than required, explanation of why.
    c. Number of Tier 1 sites monitored and basis for determination that site is served by a lead service line.
    d. Number of Tier 2, 3 and 4 sites monitored.
    e. Whether any of the testing sites were changed from the previous monitoring with a multiple-choice response as to reason why.
    f. Results from the first liter draw.
    g. Results from the fifth liter draw.
    h. Whether wide-mouth bottles were used to collect sample.
    i. Whether sampling instructions were provided that directed that monitoring be done of water that was stagnant for 6 hours and prohibited aerator removal and cleaning and flushing of sampled taps.
    j. Number of samples invalidated and reason for invalidation.
    k. Lead levels of invalidated samples.
    l. Whether corrosion control was re-optimized.
    m. Number of full lead service lines replaced in that quarter.
    n. Location of the lead service lines removed.
    o. If applicable, number of customers or homeowners that denied access for a full service line replacement
    p. If final rule fails to include a presumption of control and/or access requiring statement by state legal officer, for each property claimed a lack of control and/or access, the basis for claim and that the required number of outreach attempts made to any such site
    q. Whether any partial lead service line replacements occurred, and if so why and when the remaining portion will be replaced.
    r. For systems serving more than 10,000 people, a shape file indicating the service area served by the system.[48]

5. Provide that a failure to monitor or report will result in an automatic assumption that there was a lead action level exceedance (or other strong immediate consequence) for that monitoring period. Currently, monitoring or reporting violations often are not considered

[46] *See* Giles, Next Generation Compliance supra note 40 at 14-18, 23-24.
[47] If EPA chooses not to require quarterly reports, it should require water systems to submit to it all the information suggested to be included in the quarterly reports, and EPA should make that information public on the web portal.
[48] A shape file will provide EPA, states and the public with the information needed to locate the areas a water system serves, and to understand and map the system's service area to complete environmental justice, public health, and other research and evaluations. A shape file "is a simple, nontopological format for storing the geometric location and attribute information of geographic features. Geographic features in a shapefile can be represented by points, lines, or polygons (areas)." https://desktop.arcgis.com/en/arcmap/latest/manage-data/shapefiles/what-is-a-shapefile.htm Shape files can be readily generated by standard, widely-used off-the-shelf GIS software. Many states use them to track their systems' service area. *See, e.g.,* Mississippi Water Service Areas, Mississippi Public Service Commission, https://www.psc.state.ms.us/mapping/.

an enforcement priority by states and often are not even reported to EPA according to EPA and GAO data audits. Moreover, improper monitoring that results in underreporting of lead levels can lead to a water system having to sample water less frequently under 40 C.F.R, 141.86(d)(4), thus incentivizing noncompliance. *This change would disincentivize water systems from failing to monitor and report.*

6. Amend 40 CFR 141.86 to mandate that if a water system collects more tap samples than the minimum number required for its size, the system must calculate its 90th percentile by using the minimum required number of samples for its size that have the highest measured lead or copper levels. *This change will prevent the practice of testing more sites than a water system needs to dilute the pool and avoid a lead action level exceedance.*

7. Amend 40 CFR 142.17 to require that in addition to the regular annual reviews currently required, EPA conduct an audit every two years specifically of the state's compliance with the LCR and other reporting requirements and compliance with EPA's Enforcement Response Policy. EPA should publicly post the annual reviews and these biennial audits on its website. *These changes will encourage states to comply with applicable regulations and allow the public to know if their state is accurately reporting violations and taking enforcement as EPA policy requires.*

8. Require the public posting of water systems' own monitoring plan, optimal corrosion control plan, and lead service line replacement plans along with a certification from an executive that the plans and the water system's implementation of it comply with federal and state regulations. *This change will facilitate oversight and encourage compliance with monitoring requirements, and implementation of sound corrosion control and lead service line replacement policies. It will also allow the public to scrutinize their water system's plans.*[49]

D. Response to EPA's request for comment about promoting compliance outside of enforcement

EPA requests comment on whether the proposed requirements of the rule are enforceable and promote compliance without the need for State or Federal enforcement action. EPA also solicits comment on ways the rule could be modified to better promote compliance.[50]

As discussed immediately above in Section 14.C, even though the LCR is notorious for the lack of compliance with it, the proposed LCRI contains no provisions designed to improve this troubling and health-endangering issue. In that subsection, we propose detailed suggestions for improvement based on similar successful mechanisms in other EPA regulations.

[49] These issues were also discussed in greater detail in an April 25, 2023 letter from environmental organizations to Assistant Administrator Radhika Fox (available in appendix).
[50] General Matter Request 3 (88 Fed. Reg. at 85,035).

Section 15: Environmental Justice Concerns

EPA defines environmental justice as,

> the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys: [t]he same degree of protection from environmental and health hazards, and [e]qual access to the decision-making process to have a healthy environment in which to live, learn, and work.[1]

Under Executive Orders 128998 and 14096, EPA is required to make achieving environmental justice part of its mission and to "strengthen its commitment to deliver[ing] environmental justice to all communities across" the United States.[2] EPA claims that the proposed LCRI "will not create disproportionate and adverse human health or environmental effects on communities with environmental justice concerns."[3] SDWA requires that treatment techniques must account for the greater risks faced by subpopulations "identified as likely to be at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population."[4] EPA's analysis, however, fails to account for the weaknesses in the LCRI that will leave environmental justice communities disproportionately vulnerable to harms from lead in drinking water.

Each section of these comments discusses in more detail the relevant environmental justice impacts of the relevant part of the proposed LCRI. Here, we compile our comments related to environmental justice for ease of reference, highlighting specific concerns and recommendations. We strongly urge EPA to strengthen the LCRI to address these environmental justice issues.

A. Weaknesses in the proposed LCRI will disproportionately harm communities of color and low-wealth communities

Lead in drinking water has disproportionately harmed low-wealth communities and communities of color, especially Black and immigrant communities, for decades. Flint, Newark, Benton Harbor Michigan, and many other examples highlight this problem. Where loopholes and other weaknesses exist in the proposed LCRI, the harm from those provisions will disproportionately affect the same communities that have already borne the brunt of the harm from drinking water contamination.

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[1] *Environmental Justice*, EPA (last updated Jan. 11, 2024), *available at* https://www.epa.gov/environmentaljustice#:~:text=Environmental%20justice%20is%20the%20fair,laws%2C%20regulations%2C%20and%20policies.
[2] 88 Fed. Reg. at 85,043.
[3] *Id*.
[4] 42 U.S.C. § 300g-1(b)(3)(c)(i)(V) & (ii).

Numerous studies have documented that drinking water violations or ineffective, slow enforcement of drinking water standards, disproportionately affect communities with low wealth and communities of color.[5] Recent studies also have documented that lead in drinking water poses particular risks to communities of color and low wealth communities. For example, studies have shown that lead service lines or lead contaminated drinking water poses disproportionate risks in New York City,[6] the State of Illinois,[7] Evanston, Illinois,[8] Washington D.C.[9] and likely nationally.[10] One recent study highlighted the disproportionate risks to Black populations from lead in tap water for kidney disease, noting,

> Black patients have increased susceptibility to lead exposure due to higher rates of kidney disease and lower access to equitable health care, and, simultaneously, greater vulnerability, as evidenced by the higher levels of community water lead levels among Black than White patients with ESKD [End Stage Kidney Disease], with significantly less temporal improvement over the last decade.[11]

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[5] Kristi Pullen Fedinick et al., Watered Down Justice (NRDC, Environmental Justice Health Alliance and Coming Clean, 2019), https://www.nrdc.org/sites/default/files/watered-down-justice-report.pdf; McDonald YJ, Jones NE. Drinking Water Violations and Environmental Justice in the United States, 2011-2015. Am J Public Health. 2018 Oct;108(10):1401-1407. doi: 10.2105/AJPH.2018.304621. Epub 2018 Aug 23. PMID: 30138072; PMCID: PMC6137766; David Switzer, Manuel P. Teodoro, The Color of Drinking Water: Class Race, Ethnicity, and Safe Drinking Water Act Compliance, September, 2017, . AWWA, v. 109, No. 9, pp. 40-45, https://doi.org/10.5942/jawwa.2017.109.0128; McDonald YJ, Jones NE. Drinking Water Violations and Environmental Justice in the United States, 2011-2015. Am J Public Health. 2018 Oct;108(10):1401-1407. doi: 10.2105/AJPH.2018.304621. Epub 2018 Aug 23. PMID: 30138072; PMCID: PMC6137766.

[6] Columbia University, Mailman School of Public Health, Lead Service Lines in NYC Disproportionately Impact Hispanic/Latino Communities and Children Already At Risk, Aug. 30, 2023, https://www.publichealth.columbia.edu/news/lead-service-lines-nyc-disproportionately-impact-hispanic-latino-communities-children-already-risk-lead-exposure; Nigra AE, Lieberman-Cribbin W, Bostick BC, Chillrud SN, Carrión D. Geospatial Assessment of Racial/Ethnic Composition, Social Vulnerability, and Lead Water Service Lines in New York City. Environ Health Perspect. 2023 Aug;131(8):87015. doi: 10.1289/EHP12276. Epub 2023 Aug 30. PMID: 37646509; PMCID: PMC10467360; Arnold C. Digging into Exposure Disparities: Mapping Lead Service Lines in New York City. Environ Health Perspect. 2023 Nov;131(11):114001. doi: 10.1289/EHP13735. Epub 2023 Nov 3. PMID: 37918850; PMCID: PMC10622229.

[7] Justin Williams, Data Points: the environmental injustice of lead lines in Illinois, Nov. 10, 2020. https://www.metroplanning.org/news/9960/Data-Points-the-environmental-injustice-of-lead-lines-in-Illinois.

[8] Adina Keeling, Evanston's Lead Pipes called an Environmental Justice Concern, https://pulitzercenter.org/stories/evanstons-lead-pipes-called-environmental-justice-concern.

[9] Baehler KJ, McGraw M, Aquino MJ, Heslin R, McCormick L, Neltner T. Full Lead Service Line Replacement: A Case Study of Equity in Environmental Remediation. Sustainability. 2022; 14(1):352. https://doi.org/10.3390/su14010352

[10] Abt Associates, Environmental Justice Analysis for the Proposed Lead and Copper Rule Revisions, Contract # EP-W-17-009, Revised Draft, October 22, 2019. https://downloads.regulations.gov/EPA-HQ-OW-2017-0300-0008/content.pdf.

[11] Danziger J, Mukamal KJ, Weinhandl E. Associations of Community Water Lead Concentrations with Hemoglobin Concentrations and Erythropoietin-Stimulating Agent Use among Patients with Advanced CKD. J Am Soc Nephrol. 2021 Oct;32(10):2425-2434. doi: 10.1681/ASN.2020091281. Epub 2021 Jul 15. PMID: 34266982; PMCID: PMC8722797.

Not only does the proposed LCRI fail to fix many of these problems, the proposed rule would disproportionately harm environmental justice communities in certain ways. Some examples include:

- Rather than requiring water systems to pay for full LSL replacement, the LCRI allows them to charge individual customers for replacing LSLs under private property, which can cost thousands of dollars. As discussed extensively in the Cost-Sharing section 2.D.v. of these comments, peer reviewed studies and numerous examples show that this means that homeowners of color and those with low wealth often cannot pay, and landlords in low-wealth and communities of color will refuse to pay these costs.[12] Under the LCRI, these LSLs will remain in use, thus exacerbating the already serious inequities in lead exposure of these communities.[13]

- The LCRI's definition of "control," a change from the former presumption of control, means that LSLs, GRRs, and lead connectors would not have to be replaced in many instances. The ones that remain would be disproportionately in environmental justice communities.[14]

- The proposed LAL, while an improvement over the LCRR, is still not health-based.[15] EPA's own analyses confirm that a LAL of 10 ppb is not health protective—particularly for children. Harm from a LAL of 10ppb will not be evenly distributed. Black children have the highest blood lead levels.[16] Children living in homes below the federal poverty line had higher blood lead levels than children living above the poverty line, and Black children living below the poverty line had markedly higher blood lead levels than children in any other demographic reported.[17] Those disparities are not surprising since people of color are more likely to live in a home with a lead service line, and children of color are more likely to live in a home with lead paint.[18]

- Retaining the 90th percentile calculation for the LAL is likewise not health based and is more lenient than what is feasible with modern-day corrosion control technology.[19] For the same reasons that people of color, especially Black people, and people with low-wealth are most likely to live with lead exposure in their drinking water, these same communities are most likely to be where LAL exceedances occur. Under a 90th percentile calculation, 10% of these exceedances can occur without requiring the water system to

[12] *See* Cost-Sharing Section 2.D.v., *supra*.
[13] *See* id.
[14] *See* Control Section 2.D.iv., *supra*.
[15] *See* "Lowering the LAL will better prevent adverse health effects" Section 4.A.i, *supra*.
[16] Indicator B2, Table in ACE: Biomonitoring – Lead, EPA, *available at* https://awsedap.epa.gov/public/single/?appid=795b22e7-bc56-4252-8a36-8d68bcaee3a4&sheet=2dc75c28-4491-4a98-a4ff-52ce1ac40751&opt=ctxmenu,currsel.
[17] *See id*.
[18] 86 Fed. Reg. 71,574-01, 71,575; Yeter et al., Disparity in Risk Factor Severity for Early Childhood Blood Lead, *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7084658/.
[19] *See* A Percentile Higher Than 90th Would Better Prevent Adverse Health Effects Section 4.A.i, *supra*.

take any action at all. This puts the health of environmental justice communities disproportionately at risk.[20]

- The lack of requirements for school and childcare facilities would especially harm the health of Black and low-wealth children.[21] Schools and childcare facilities that can afford to remediate are most likely to enlist in a voluntary testing program such as proposed in the LCRI.[22] This results in different drinking water protections based on where one lives, with less protections in place for infants and children in low-wealth areas. And low-wealth children and children of color are more likely to have additional lead exposures and higher blood lead levels to begin with.[23] The proposed LCRI would compound these problems.

- EPA neglecting to provide guidance on replacement materials for removed lead service lines increases the risk of fenceline communities facing additional harm from plastics as lead pipes are replaced.[24] As discussed in the Replacement Materials section 2.E of these comments, producing and disposing of plastics, and transportation of plastics feedstock such as vinyl chloride, are linked to serious human health harms – and these harms are experienced disproportionately by fenceline communities near petrochemical and waste disposal facilities.[25] Fenceline communities near transportation hubs and corridors are also at serious risk from transport of plastics feedstocks.[26] Due to residential racial segregation, expulsive zoning[27] and environmental racism in the siting of production and disposal facilities, the residents of these communities are disproportionately people of color.[28]

- The Biden administration has already acknowledged that lack of compliance, transparency, and enforcement is an environmental justice issue that must be addressed. Executive Order 14008 provides that EPA shall "strengthen enforcement of

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[20] *See id*.
[21] *See* "The Proposed Rule Does Not Protect Children" Section 9.C, *supra*.
[22] *See id*.
[23] *See* Marissa Hauptman, Justin K. Niles, Jeffrey Gudin, et al., *Individual- and Community-Level Factors Associated With Detectable and Elevated Blood Lead Levels in US Children*, JAMA Pediatrics (Sep. 27, 2021), *available at* https://jamanetwork.com/journals/jamapediatrics/article-abstract/2784260.
[24] *See* Comments of Air Alliance Houston, et al. to EPA, Draft National Strategy to Prevent Plastic Pollution (April 2023), Docket ID No. EPA–HQ–OLEM–2023–0228-0276 ("Comment on Draft Plastic Strategy"), at 6-20 and citations therein, which are incorporated here by reference; Beyond Plastics, The Perils of PVC Plastic Pipes, 2023, https://www.beyondplastics.org/publications/perils-of-pvc-pipes.
[25] *See id*.
[26] Sun W. (2023). The Devastating Health Consequences of the Ohio Derailment: A Closer Look at the Effects of Vinyl Chloride Spill. International journal of environmental research and public health, 20(6), 5032. https://doi.org/10.3390/ijerph20065032.
[27] Ana Isabel Baptista, et al., U.S. Municipal Solid Waste Incinerators: An Industry in Decline, Tishman Env't and Design Ctr., at 13-14 (May 2019), https://www.no-burn.org/wpcontent/uploads/2021/03/CR_GaiaReportFinal_05.21-1.pdf.
[28] *See* Toxic Free Future, PVC Poison Plastic: An investigation following the Ohio train derailment of widespread vinyl chloride pollution caused by PVC production (April 13, 2023), at 8-10, https://toxicfreefuture.org/wp-content/uploads/2023/04/Report-PDF-PVC-Poison-PlasticInvestigation-4.pdf.

environmental violations with disproportionate impact on underserved communities…and create a community notification program to monitor and provide real-time data to the public on current environmental pollution, including emissions, criteria pollutants, and toxins, in frontline and fenceline communities—places with the most significant exposure to such pollution."[29] As discussed in the Transparency and Compliance section 14 of these comments, the LCR is unfortunately known for lack of water systems compliance[30] And the proposed rule includes no measures designed to increase that anemic lack of compliance. Lead is a greater threat to EJ communities, so a failure to comply with the LCR again disproportionately impacts those communities with the highest lead levels.

Public education measures also fall short when it comes to ensuring people are informed about their risk of lead exposure from drinking water. The Public Education section 8 of these comments provides extensive analysis and suggestions for improvement. Because environmental justice communities are more likely to be exposed to lead, a failure to accurately inform the public of lead risks likewise disproportionately harms these communities and leaves individuals, especially Black and low-wealth people, uninformed and unaware of the need to take precautions to protect their health.

i. The proposed LCRI would allow disproportionate lead exposure for renters, which is an environmental justice issue because tenants are disproportionately people of color and low-wealth

Some provisions of the proposed LCRI would give landlords the ability to block LSLR, leaving their tenants exposed to lead. Absentee landlords especially lack incentive to enable LSLR under the proposed rule.[31] And under the proposed rule, tenants have no recourse to override their landlord's decision, despite being the ones who will bear the brunt of the harm.

This is an environmental justice issue because tenants are more likely to be Black, Latinx, and low-wealth than their property-owning counterparts. According to Pew Research Center, "about 58% of households headed by Black or African American adults rent their homes, as do nearly 52% of Hispanic- or Latino-led households."[32] Only about a quarter of white households are rentals.[33] The data is similar when it comes to income: "[a]bout three-fifths of people in the lowest income quartile (60.6%) rent their homes, as do 87.6% of people with net worths below

[29] Exec. Order No. 14008 §222(b), 86 Fed. Reg. 7619, 7631 (Feb. 1, 2021).
[30] *See "*EPA Must Insert Provisions in the Final LCRI that Improve Compliance with and Enforcement of the Rule and Provide Transparency to EPA and the Public" Section 14 of these comments.
[31] *See* Access and Consent Section 2.D.iv. ("As Newark Water and Sewer Utilities Director Kareem Adeem has emphasized, it is logistically much easier to get consent from tenants at rental properties than it is from landlords (who may be absentee), and it puts the decision in the hands of the people who will most benefit from it. This works best in combination with prohibiting cost-sharing, as it then doesn't put the tenant in the position of agreeing to spend the landlord's money.").
[32] Drew Desilver, Pew Research Center, *As national eviction ban expires, a look at who rents and who owns in the U.S.,* August 2, 2021, *available at* https://bit.ly/3oPZs4S.
[33] *See id*.

the 25th percentile....Only 10.5% of people in the top income quartile...are renters."[34] Therefore, where the LCRI leaves renters vulnerable to lead exposure, it disproportionately harms people of color, especially Black people, and low-wealth persons.

Some of the ways the proposed LCRI harms tenants, and therefore would disproportionately impact environmental justice communities include:

- By defining control as "legal access, physical access,"[35] EPA risks LSLR not taking place at all where landlords deny access to their property. Tenants would then continue to be exposed to lead from the pipes underneath their landlord's private land with no recourse.[36]

- If property owners are required to contribute money towards LSLR, landlords will be incentivized to decline LSLR and deny access to their property, again exposing tenants to ongoing exposure to lead in drinking water.[37] A 2019 EPA environmental justice analysis of LCR revisions found that "household-level changes that depend on ability-to-pay will leave low-income households with disproportionately higher health risks."[38]

B. EPA must strengthen the LCRI to prevent adverse effects on environmental justice communities to the extent feasible

The LCRI has the potential to be an immense step forward for public health. Eliminating lead from drinking water would be a huge step towards achieving environmental justice. As Executive Order 14096 states, "[t]o fulfill our Nation's promises of justice, liberty, and equality, every person must have...clean water to drink." But that goal can be met only if EPA closes loopholes in the proposed LCRI and implements stronger compliance measures.

EPA must take the following steps to ensure that lead exposure in drinking water is eliminated to the greatest extent feasible, thereby ensuring that all communities reap those benefits:

- Require all LSLs to be replaced within 10 years without exceptions
- Prohibit cost-sharing for full LSL replacements;
- Return to the presumption that water systems control LSLs, as was presumed in the original LCR; require state provisions setting forth that water systems have control over full service lines as a condition of primacy;
- Require prioritization of replacements in environmental justice communities; Advise that copper is the best replacement option for lead pipes;
- Lower the LAL to no higher than 5ppb, and ideally 1ppb;

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[34] *Id*.
[35] 88 Fed. Reg. at 84,920.
[36] *See* Control Section 2.D.iv.
[37] *See* Cost-Sharing Section 2.D.v.
[38] Abt Associates, Environmental Justice Analysis for the Proposed Lead and Copper Rule Revisions, Docket No. EPA-HQ-OW-2017-0300-0008, 8–12 (2019), https://www.regulations.gov/document/EPA-HQ-OW-2017-0300-0008.

- Raise the 90th percentile to the 99th or 95th percentile, or at least the highest percentile that is feasible given current corrosion control technology. At a minimum, justify why it cannot be raised;
- Require all water systems to provide filters after one LAL exceedance;
- Incentivize water systems to work with schools and childcare centers to install filtration stations;
- If EPA allows an option for water systems to sample water instead of installing point of use devices at schools and childcare centers, require twice-annual sampling with prompt filter installation for sources testing at or above 1ppb.
- Prohibit partial LSL replacements;
- Require robust public education and outreach, in multiple languages and with multiple modes of communication, to ensure that everyone, especially the communities most impacted, are aware of the risks and their options to take precautionary measures;
- Require direct electronic reporting of LCRI monitoring results from state-certified laboratories to EPA and create a web-based portal for public access to national drinking water data;
- Require all treatment technique violations to be reported to the public water system and EPA, and post that information publicly;
- Institute incentives for compliance with the rule and eliminate disincentives
- State that any extension of LSLR poses an "unreasonable risk to health" as considered under the SDWA when granting small systems that need financial assistance extensions for treatment techniques.
- Highlight funding and financing strategies that water systems can use to comply with the rule without making bills unaffordable for low-income households.

EPA, the states, and water systems must all work to deploy these strategies once the rule is finalized. EPA must implement these measures in the Final Rule in order to effectuate a true LSLR program that does not leave out the highest-risk communities and demonstrate its firm commitment to achieving environmental justice.

Section 16: Compilation of Responses to EPA's Requests for Comment[1]

General Matters

1. Whether the proposed revisions to the LCRR treatment technique are effective to prevent known or anticipated adverse health effects to the extent feasible in accordance with the SDWA.

As described in the executive summary of our comments, the proposed LCRI includes many positive changes that will help to protect public health for decades to come. Nevertheless, the proposed LCRI contains weaknesses, loopholes, and shortcomings that we fear may imperil the LCRI's ability to achieve President Biden's and EPA's laudable goals to reduce lead exposure in drinking water fully, quickly, and equitably. In the final rule, we urge EPA to make a variety of changes to strengthen and simplify the rule further and to help ensure that its implementation will live up to its promise. These changes are summarized in section 1, and specific suggestions for improvements to the proposed LCRI's treatment techniques are addressed in detail throughout all sections of our comments. These changes are necessary for the LCRI prevent known or anticipated adverse effects on the health of persons to the extent feasible and to comply with the SDWA.

2. Whether there are additional ways EPA could reduce the complexity of the regulatory approach used to address lead in drinking water consistent with the statutory standard for a treatment technique rule in section 1412(b)(7)(A) of SDWA. Specifically, EPA requests comment on ways that the proposed LCRI could be simplified and ways that burden, including paperwork burden, could be reduced without affecting the ability of the rule to prevent known or anticipated adverse health effects.

The best way for EPA to reduce the complexity of the agency's regulatory approach would be to issue an at-the-tap Maximum Contaminant Level (MCL) for lead, as discussed in section 11 of these comments. If EPA does not issue an MCL, the agency could, as proposed in section 2 of these comments, simply require utilities to remove all LSLs at utility expense, and require primacy states to include such a requirement and to streamline the process to achieve this goal in their LCRI implementing regulations. See also section 2.B for discussion of statutory provisions regarding treatment techniques and flexibility.

3. Whether the proposed requirements of the rule are enforceable and promote compliance without the need for State or Federal enforcement action. EPA also solicits comment on ways the rule could be modified to better promote compliance.

As discussed in Section 14.C, even though the LCR is notorious for the lack of compliance with it, the proposed LCRI contains no provisions designed to improve this troubling and health-endangering issue. In that subsection, we propose detailed suggestions for improvement based on similar successful mechanisms in other EPA regulations, including specific requirements for electronic reporting among other recommendations.

[1] 88 Fed. Reg. at 85,035-38.

4. The revised definition of "connector," including that connectors are defined as "not exceeding two feet."

See section 2(D) regarding service lines and connectors subject to mandatory replacement.

Service Line Replacement

1. All aspects of the proposed scope of the replacement requirements, including the criteria used to define a full service line replacement (e.g., cutting the pipe at abandoned properties, replacing the entire service line) and which lead sources are subject to replacement under the mandatory program. EPA is seeking comment on whether to prohibit reconnection of any disconnected LSL or GRR service line. EPA is requesting comment on whether the Agency should include lead connectors or galvanized service lines that are or were downstream of a lead connector as part of mandatory replacement.

Yes EPA should prohibit reconnection of any disconnected LSL or GRR service line, and should include lead connectors and GRRs that are or were downstream of a lead pipe or connector as part of mandatory LSLR. For further discussion, see section 2(D)(i)(c)-(d).

2. Whether a reasonable effort to obtain property owner consent should be more than four times (e.g., five, six, or seven times).

Yes, additional efforts are necessary. See section 2(D)(iv).

3. Whether the proposed LCRI appropriately interprets "control" for the purposes of the mandatory replacement provision (i.e., require systems to conduct full service line replacement in situations where the system has access to conduct the full replacement).

No, it does not appropriately interpret control. See section 2(D)(iv).

4. The proposed minimum replacement rate and replacement deadlines. EPA is seeking comment on whether it is feasible for systems across the nation to complete service line replacement in a shorter timeframe than ten years, such as in six, seven, or eight years. EPA is seeking comment on the rate construct approach, including how to calculate compliance with a given service line replacement deadline and average annual rate calculated across a rolling three-year period. EPA also seeks comment on whether systems should be required to meet a minimum replacement rate in the first three years after the compliance date to give States an opportunity to enforce replacement rate progress sooner than three years after the compliance date. EPA also seeks comment on the complexity of the rate construct.

See section 2(C).

5. EPA is taking comment on whether States, as a condition of primacy, or EPA when it is directly implementing the program, should be required to set initial shortened deadlines by a certain timeframe, such as no later than 60 days after the compliance date.

Yes, EPA and primacy states should be required to set initial shortened deadlines within a reasonable timeframe, such as 60 days after the initial compliance date. See section 2(D).

6. The overall approach and basis to offer deferred service line replacement to systems with a high proportion of LSLs and GRR service lines in their distribution system relative to their total number of households served. EPA is requesting comment on its proposed threshold of 0.039 average annual number of replacements per household served, which is used to calculate the number of years that systems can defer.

See section 2(C), which argues that EPA cannot allow systems with a high number or high concentration of LSLs to avoid removing all lead pipes in 10 years. Assuming arguendo that EPA will allow such extensions, section 2(C) recommends a cap (not allowing backsliding from the LCR's 7% per year requirement) and a requirement that extensions not be automatic by rule but be subject to public notice, comment and a local hearing so local citizens can weigh in.

7. Whether to require the State, as a condition of primacy, to approve the use of the deferred deadline provision where the water system qualifies for it and/or whether to require the State, as a condition of primacy, to assess whether it would be feasible for a system to meet the 10-year deadline or a shorter deadline even if the system meets the regulatory criteria for the deferred deadline.

Yes, assuming arguendo that EPA allows such extensions, states should be required to approve them, after notice, comment and a local hearing, and should heave to determine whether the system could meet the 10 year or a shorter deadline. See section 2(C)(ii).

8. Whether there are additional data on service line replacement rates achieved by systems in proactive programs (i.e., excluding programs that only replace service lines in coordination with main replacement or emergency repair).

We challenge EPA's unexplained assumption that crews can only work 20 weeks a year removing 100 LSLs a day. See Section 2(C)(i) for a detailed discussion of this analysis.

9. The proposed use of a maximum threshold of 10,000 annual service line replacements for systems with atypically high numbers of LSLs and GRR service lines as well as seeking comment on the alternate threshold of 8,000 annual service line replacements. EPA is also seeking feedback on other thresholds and supporting data. EPA is also seeking feedback on if there's data available that would inform if the maximum threshold for annual service line replacement could increase after ten years, such as if replacement rates could double.

The LCRI cannot authorize extensions beyond 10 years for systems that would be required to remove 8,000 or 10,000 LSLs per year. See section 2(C)(i).

10. Whether systems conducting deferred service line replacement should be subject to any additional requirements beyond those for systems that are not replacing service lines in accordance with a deferred deadline.

We oppose any extensions beyond 10 years, but assuming arguendo that EPA does include extensions in the final rule, it should at least ramp up the minimum number of LSL replacements to double or triple the rule's required rate after the first 10 years. See section 2 for more details.

11. The requirement for systems to install a dielectric coupling when conducting a partial replacement of an LSL or GRR to separate the remaining LSL or GRR service line and the replaced service line unless the replaced service line is made of plastic and other recommended risk mitigation activities.

As discussed in section 2, partial replacements should be conducted only in emergencies, if at all, and we support the proposed requirements that 1) the water system offer to replace the rest of the LSL within 45 days and 2) the water system provide filters/POU devices and six months of cartridges to affected residents if the offer to replace the rest of the LSL is refused. We agree that a dielectric coupling should be required if a partial replacement will connect a new metal service line to an LSL or GRR.

12. The proposed requirement to ban partial lead and GRR service line replacement unless it is conducted in accordance with emergency or planned infrastructure work (excluding planned infrastructure work solely for the purposes of replacing lead and GRR service lines as part of a service line replacement program). Additionally, EPA is seeking comment on whether partial service line replacement should be prohibited during "planned infrastructure work" or with certain types of planned infrastructure work.

Partial LSLRs should not be allowed during planned construction work. Only in limited circumstances and subject to several safeguards discussed in our comments should emergency partial LSLRs be allowed. This is addressed in section 2(D)(iii).

13. The ability of the market to correct for potential shortages in workers and materials to conduct service line replacement, as well to provide sufficient quantities of filters to comply with the service line replacement and other relevant provisions in the proposal.

We have great faith that if there is a clear universal deadline of 10 years for all LSLRs, that the market will respond. If EPA allows hundreds or thousands of systems that have potentially millions of LSLs to get extensions beyond 10 years, that will send a market signal that ramping us is not in the interest of materials and workforce suppliers and will create a pernicious negative feedback loop. This is addressed in section 2(C)(i).

14. The extent to which property owner consent, if required by State or local law or water tariff agreement, might complicate full service line replacement and whether there are additional measures EPA can take to facilitate access through the LCRI.

This is a serious problem with the LCRI which is addressed in 2(D)(iv), along with proposed solutions.

Tap Sampling for Lead and Copper

1. Comment on the sites included in Tier 3 and whether all of the proposed sites should be included in Tier 3, if additional sites should be included, or if some should be included in a different, lower priority tier, such as Tier 4. Specifically, comment on whether sites served by galvanized service lines or containing galvanized premise plumbing that are identified as ever being downstream of an LSL or lead connector should be included in the same tier as other sites with a current lead connector (e.g., copper service line downstream of a lead connector).

This is addressed in section 7(A).

2. Comment and available data, such as modeling or sampling data, that inform lead corrosion rates over time.

EPA asserts sampling provisions are meant to help determine the effectiveness of a water system's corrosion control techniques. Section 10 of our comments includes suggestions on how to improve sampling protocol so that data accurately captures worst-case lead scenarios and identifies situations where the water is too corrosive. The CCT section 10(C) points to areas where the proposed LCRI's provisions regarding the conduct of CCT studies should be strengthened, and explains why EPA should create incentives to address the identified shortages of CCT experts.

3. Comment on the applicability of alternate sampling protocols to assess CCT performance, increase customer participation, and other relevant factors.

We encourage EPA to require a standard sampling protocol for all sites, including requiring paired first- and fifth-liter samples at Tiers 1 through 3. *See* section 7(B) for more details. To increase customer participation, particularly with regard to renters who may not receive CCR or other written materials sent only to those with water system accounts, we encourage EPA to require annual public outreach activities of all systems. We further encourage EPA to strengthen the enhanced public outreach requirements for systems with a LAL exceedance or that fail to meet the required SLR rate. *See* Public Education and Outreach section 8(E).

4. Comment on the proposed updated definition of wide-mouth bottles that is "bottles that are one liter in volume with a mouth, whose outer diameter measures at least 55 mm wide," and specifically on the availability of qualifying bottles.

We agree with the proposed updated definition. This is addressed in section 7(B)(ii).

5. Comment [on] any relevant data on the number and tiering of samples used to calculate the 90th percentile lead and/or copper levels for systems with LSLs for purposes of assessing CCT efficacy. Specifically, whether samples from non-LSL sites that have higher lead concentrations than samples from LSL sites should be included and whether these higher values should replace lower values from LSL sites in the 90th percentile calculation.

If a water system collects more tap samples than the minimum number required for its size, the system must calculate its 90th percentile by using the minimum required number of samples for its size that have the highest measured lead or copper levels. This is addressed in further detail in section 7(B)(v). Also, as discussed in section 7(D), the copper sampling pool should target sites with the highest copper risks—homes with new copper premise plumbing—rather than piggybacking on the lead sampling pool sites.

6. Comment on whether State authority to specify sampling locations when a system is conducting reduced monitoring should apply regardless of the number of taps meeting sample site criteria.

This is not addressed.

Service Line Inventory and Service Line Replacement Plan

1. In the LCRI, EPA is proposing a threshold of systems serving greater than 50,000 persons to host the inventory and plan online, which is the required threshold under the LCRR. EPA is seeking comment on the size threshold at which systems must host their publicly accessible inventory, inventory summary data, replacement summary data, and service line replacement plan online, and whether it should be lowered relative to the LCRR requirements.

See section 5(C)(ii).

2. In the LCRI, EPA is proposing a requirement for systems to validate the accuracy of non-lead service lines in their inventory that were categorized using methods other than records review or visual inspection of at least two points along the line. EPA is requesting comment on the number of validations required, the proposed 95 percent confidence level approach used to develop the number of validations required, the criteria for which methods used to categorize non-lead service lines should be included in the validation pool (including whether non-lead lines categorized based on records should be subject to validation), and the seven-year timeline for systems on a 10-year replacement deadline to complete the validation requirements.

See section 5(C)(ii).

3. Comment on establishing a deadline for systems to identify all unknown service lines prior to their service line replacement deadlines.

See section 5(C)(i).

4. Comment on a requirement for systems to update their service line replacement plans if there are any changes, such as changes to laws and policies applicable to full service line replacement.

See section 5.

Lead Action and Trigger Levels

1. EPA is seeking comment on the proposed lead action level of 0.010 mg/L, as well as comment and supporting data on alternative action levels, such as 0.005 mg/L, with regards to generally effective corrosion control treatment and identifying systems most at risk of elevated levels of lead in drinking water.

The final LCRI should include a lead action level of no higher than 5 ppb because that will better prevent adverse health effects and is feasible. This is discussed in more detail in Section 4(A).

2. EPA is also seeking comment on the use of the action level to determine when additional public education is required, and the use of the same action level for public education as for the CCT provisions.

We agree that enhanced public education requirements should be triggered by tap sampling results that exceed a specified threshold. In our CCT section 10(E), we have proposed alternative triggers for CCT requirements that are feasible and would be more health protective. We agree that using the same trigger levels for CCT and for enhanced public education is logical and would help to simplify the rule. In our public education section 8(E), we have more specific suggestions about the manner and frequency of the public education following that trigger.

3. EPA is seeking public comment, data, and information on the anticipated benefits and tradeoffs, including for public health and administrative burden on systems and States, if more small and medium systems are required to conduct a detailed OCCT demonstration and take other actions if they exceed the proposed action level of 0.010 mg/L or other lower values, while water systems are simultaneously required to mandatory conduct full service line replacement.

As discussed in section 4, EPA is legally required to include in the final rule a LAL lower than 10 ppb, and legally required to mandate CCT upon an LAL exceedance. We also believe that at both a 10 ppb or a lower LAL, the anticipated benefits of requiring detailed OCCT demonstration and other actions upon a LAL exceedance for small and medium system outweigh the administrative burdens while those systems simultaneously conduct lead service line replacement. However, as discussed in section 6 regarding small system flexibility, in certain cases we support providing systems serving up to 10,000 people with the flexibility, subject to primacy state approval, to use POU devices (meeting all SDWA section 1412 requirements for water systems overseeing them) plus full LSLR. Sections 4 and 10(C)-(E) explain that requiring CCT upon an exceedance would generate substantial public health benefits and we propose several ways to mitigate the burdens for water systems and states. Similarly, in section 8(E)(i) and (iv) we discuss our recommendation that public outreach activities be conducted by all systems independently of the LAL and argue that enhanced public outreach will be beneficial at both 10 ppb or a lower LAL.

Corrosion Control Treatment

1. The proposed determination that the CTT treatment technique is feasible and prevents known or anticipated adverse health effects to the extent feasible.

We agree that CCT is a feasible treatment technique and, when designed and implemented properly, can prevent known or anticipated adverse health effects. For the reasons stated throughout section 10 of these comments, the proposed LCRI CCT provisions, as currently drafted, do not prevent known or anticipated adverse health effects to the extent feasible. Throughout section 10, we have suggested modifications to the CCT provisions that are necessary to ensure that they collectively prescribe a treatment technique that will prevent known or anticipated adverse health effects to the extent feasible.

2. Comment on whether it would be more appropriate to require water systems to re-optimize again following an action level exceedance regardless of meeting their optimal water quality parameters and to provide the State with the authority to waive this requirement.

Yes. As discussed in detail in section 10(E)(ii), the final LCRI should provide that all systems with CCT have an ongoing duty to re-optimize CCT after action level exceedances, unless the State determines after full and carefully documented consideration that re-optimization is not needed.

3. The proposed option for a water system to delay OCCT until after the system has replaced all of its LSLs and GRR service lines, while the system achieves at least 20 percent removal per year and must have no LSLs, GRR service lines, or lead status unknown service lines remaining at the end of the five-year period.

As discussed in detail in section 10(A), this five-year CCT delay provision fails to protect public health to the extent feasible, will not achieve EPA's stated goals, and must be eliminated or substantially modified.

4. The treatment recommendation and CCT study process can take multiple years to complete. For systems with existing corrosion control, the system may be able to alter the existing treatment (e.g., increase pH and/or orthophosphate dose) without a new CCT study on a much faster timeframe rather than waiting for study results that may recommend that same change. EPA is requesting comment on whether there are situations and/or conditions where existing treatment modifications may achieve similar lead reductions rather than delaying new treatment for two-and-a-half years while a study is underway.

We agree that there likely are situations and/or conditions where existing treatment modifications should be implemented in parallel with or instead of conducting a new CCT study. CCT is a complex science and optimizing CCT throughout a water system may require iterative processes to adjust treatment doses and methods to achieve intended water quality parameters. A well-designed and executed CCT study may provide sufficient information for a water system and State to designate re-optimized CCT without re-doing an entire CCT study. We note, however, that there will be other situations for which a new CCT will be necessary to re-optimize CCT. We support giving States flexibility to determine whether a new CCT study is needed or

whether existing information is sufficient to designate re-optimized CCT because this determination will need to be a fact- and circumstance-specific evaluation customized to each individual water system. See Section 10.

Compliance Alternatives for a Lead Action Level Exceedance for Small Community Water Systems and Non-Transient, Non-Community Water Systems

1. EPA is proposing that small system flexibilities be limited to CWSs serving 3,300 persons and fewer and all NTNCWSs for the remaining compliance alternatives of point-of-use devices and plumbing replacement. EPA is seeking comment on whether the Agency should allow systems serving up to 10,000 persons (or another threshold) to be eligible to use the small system compliance flexibility provision. EPA is also seeking information, data, and analysis on whether point-of-use devices and plumbing replacement are as effective as OCCT at systems serving up to 10,000 persons (or another threshold).

We recognize the limits EPA cites on CCT expertise for small systems and support these systems having the flexibility to choose POU devices or replacement of lead-bearing plumbing instead of CCT. To make POU devices as effective as possible, however, EPA must ensure they are installed, maintained, and properly used by water systems to protect public health, consistent with the requirements for small system use of POU devices established in SDWA §1412(b)(4)(E)(ii), 42 U.S.C. §399g-1(b)(4)(E)(ii). Until full LSLR is achieved, POU devices provide crucial protections for customers still drinking water from LSLs and GRRs. But these protections are only realized with proper implementation, maintenance, and use of the filters. As such, we encourage EPA to provide educational materials in multiple languages and to bolster its requirements for PWSs that choose to use POU devices rather than CCT. These systems should be required to meet strong standards throughout the lifecycle of the POUs, and should also be required to provide public education and outreach to ensure that POU recipients know how to properly use them. See section 6 for more details.

2. EPA is requesting comment on the ability and practicality of point-of-use devices to address multiple contaminants.

See section 6.

Public Education

1. The proposed determination that the public education treatment technique is feasible and prevents known or anticipated adverse health effects to the extent feasible.

Additional changes are needed to make public education and notification materials more accurate and outreach more effective and to prevent known or anticipated adverse effects on the health of persons to the extent feasible. These changes are addressed throughout our section 8 of our comments describing public education requirements.

2. Comment and supporting data on the capacity of water systems to conduct some or all of the required public education activities in 30 days, or another period of time that is less than 30 or

60 days, after the end of the tap sampling period in which a systemwide lead action level exceedance occurs.

We believe that it will be feasible for systems to conduct the public education activities within 30 days. See section 8(E)(i) for more details.

3. Data, analyses, and comments on the proposed determination that water systems are capable of providing consumer notices of individual tap sampling results within three calendar days of obtaining those results, regardless of whether the results exceed the lead or copper action level, or if a longer time frame is needed (e.g., three business days, seven calendar days, 14 calendar days).

We encourage EPA to adopt a 24-hour notification requirement for all individual tap sampling results. This is discussed in section 8(B)(i).

4. Whether the proposed requirement for water systems to offer lead sampling to consumers with LSLs, GRR service lines, or unknown service lines in the notice of service line material is effective at reducing adverse health effects. EPA is also requesting comment on the requirement for water systems to deliver consumer-initiated test results within three days of obtaining those results.

We support the proposal to require systems that exceed the LAL to offer *free* tap monitoring to all customers who request it, and to offer tap monitoring for all customers with LSLs, GRR, or unknown service lines who request it regardless of whether there has been an LAL exceedance. It should be clarified that this monitoring should be done at the utility's expense. This is discussed in section 8(B)(ii).

5. Whether the types and timing of outreach activities proposed for systems failing to meet the mandatory service line replacement rate are appropriate and whether other activities should be considered.

We support EPA's proposal to require additional outreach activities for systems that fail to meet the mandatory service line replacement rate to conduct annual public education but encourage EPA to strengthen the requirements for outreach activities. This is discussed in section 8(E)(i) and 8(E)(ii).

6. Whether EPA should require systems to annually notify consumers if they are served by a lead connector, in addition to notifications for sites with lead, GRR, or lead status unknown service lines.

We encourage EPA to increase the frequency of service line materials notifications from annual to once every six months for water systems that have lead, GRR, or unknown service lines beginning five years after the compliance date. *See* section 8(C)(i).

7. Whether EPA should require water systems to provide filters to consumers when there is a disturbance resulting from replacement of a water main.

Yes. This is addressed in section 8(C)(ii).

8. Whether EPA should require additional public education requirements to further encourage swift service line replacement faster than the 10-year replacement deadline. For example, should water systems that have LSLs, GRR service lines, or unknown service lines five years after the compliance date for the LCRI be required to increase the frequency of the notification of service line materials from annual to once every six months?

Yes. This is addressed in section 8(C)(i).

9. EPA is seeking information and data on when a system provides translated materials to consumers with limited English proficiency, what resources are used to translate materials (e.g., State resources, community organizations), and what barriers water systems may face in providing accurate translated materials.

EPA should provide translated templates and materials to assist water systems in reaching out to low English proficiency and low literacy individuals. EPA and states should strongly encourage water systems to work through community-based organizations, places or worship and other trusted community partners to reach such individuals. Section 8(a)(ii) of these comments discusses translated materials, in which we highlight the legal requirements and environmental justice implications of ensuring that public materials are made available in a manner that will effectively reach people with limited English proficiency or limited literacy.

10. Whether the Agency should require States, as a condition of primacy, to provide translation support to water systems that are unable to do so for public education materials to consumers with limited English proficiency.

Yes. See section 8(A)(ii), as well as the discussion of primacy within section 2(D)(iii).

11. EPA is also requesting comment on additional ways to streamline public education and associated certification requirements (e.g., combine deadlines for systems to conduct public education or submit information to the State).

This is not addressed in our comments.

Additional Requirements for Systems With Multiple Lead Action Level Exceedances

1. Whether water systems should be required to take additional actions when the system exceeds the lead action level multiple times and if so, what actions are appropriate and feasible, and when these additional actions should be required under the LCRI.

As discussed in Section 4(C)(i), additional actions should be required for not only multiple LAL exceedances, but after one exceedance. As discussed in Section 4(C)(ii), those

actions should include the delivery of filters and related materials. In our public education section, we have suggestions about the manner and frequency of the public education following a LAL exceedance. *See* Section 8(E). In our CCT section, particularly Section 10(E), we have suggestions about the contours of CCT that should be required after one or more LAL exceedances.

2. Whether EPA should use three action level exceedances in a five-year period for identifying systems with multiple action level exceedances where additional action is warranted and, whether additional actions should be required sooner, or later, than the five-year period, or whether EPA should use a modified metric (number of consecutive action level exceedances in a set time period) or a different metric entirely (i.e., based on one or more factors other than the number of action level exceedances in a set time period).

As discussed in Section 4(C)(i), EPA should require additional actions, such as the delivery of filters to all consumers at no charge, to occur after a water system has one LAL exceedance.

3. The proposed public education activities after a system exceeds the lead action level multiple times. EPA is specifically seeking any information, data, or analysis on whether the proposed public education activities support preventing adverse health effects in this situation. EPA is also requesting comment on whether systems should be required to conduct more than one (e.g., two or three) of the public education activities proposed.

As described in more detail in Section 8(E)(i), some of the proposed public education activities may be ineffective without additional criteria (e.g. for town hall meetings, publicity and notice requirements). Because face to face, individualized contact tends to be more effective than other outreach activities, we would encourage EPA to require water systems to contact customers by two of the following options: phone, text, email, door hanger, or through an outreach activity in partnership with a local community organization. Our comments cite Flint and Newark, for example, where despite widespread publicity, many residents did not properly install or use filters. Multiple modes of outreach are critical to successfully reaching many populations.

4. Whether EPA should require water systems to make filters certified to reduce lead and replacement cartridges, along with instructions for use, available to all consumers within 60 days of a system having multiple action level exceedances and whether there are any supporting or contrary data on whether the proposed filter requirement would be protective of public health.

As described in Section 4(C)(ii), within 30 days following a LAL exceedance, water systems should be required to deliver filters independently certified to meet NSF/ANSI standards to reduce lead and replacement cartridges, along with instructions for use, to all consumers at no charge, and continue to deliver replacement cartridges until two sampling periods have passed with no LAL exceedance. Because those filters would reduce lead levels to 5 ppb in a water system where more than 10 percent of sites sampled exceeded 10 ppb, the filter requirement would be more health protective than not providing filters.

5. The proposed requirements for systems to develop a filter plan and submit to the State after the system has multiple action level exceedances for the first time, and whether EPA should require systems to take additional actions to facilitate filter distribution.

We agree that water systems should develop a filter plan and submit it to the State. Our suggestions for additional required actions are set forth in Section 4(C).

6. Alternative requirements for systems with multiple action level exceedances to provide filters to their consumers, such as requiring water systems to provide filters and replacement cartridges to consumers served by an LSL, GRR service line, or unknown service line or to all consumers, or to require systems to consult with the State upon meeting the criteria for multiple action level exceedances, after which the State determines the appropriate action to reduce lead exposure.

We support requiring water systems to deliver filters at no charge to all consumers in the system following an LAL exceedance. While such filters must, at a minimum, be delivered to consumers with LSLs, GRR service lines, or unknown service lines, they should be delivered to all consumers.

We do not support EPA providing States discretion to determine the appropriate action following whichever number of LAL exceedances trigger the provision of certified filters. Provision of filters can provide immediate protection and reduce levels to 5 ppb. EPA acknowledges that other actions take time to implement. States should not be allowed to authorize the use of other actions in the place of filters that will unnecessarily leave consumers exposed to high levels of lead for a longer period of time. See section 4 for more details.

7. An additional provision providing discretion to States to allow systems with multiple action level exceedances to discontinue the proposed required actions sooner if the system takes actions (e.g., installs optimized or re-optimized CCT, completes mandatory service line replacement) and is at or below the lead action level for two consecutive monitoring periods.

As stated in Section 4(C)(ii), we propose allowing water systems to discontinue the proposed actions if the system takes additional actions and is at or below the lead action level for two consecutive monitoring periods.

8. Whether, in addition to the proposed requirements, EPA should provide States discretion to determine appropriate action following a multiple action level exceedance that is tailored to meet specific system needs.

We support EPA permitting States to determine *additional* appropriate actions that a water system must take following an LAL exceedance, or multiple LAL exceedances tailored to a specific water system as long as those actions must be in addition to, and not in place of, the actions required by the final LCRI. See section 4 for more detail.

Lead Sampling in Schools and Child Care Facilities

1. Whether CWSs should be required to collect more samples and/or to sample more frequently in schools and child care facilities.

EPA's proposed sampling program for schools and child care centers is wholly inadequate and should be replaced by a requirement that water systems either: (a) install POU filtration stations then conduct testing; or (b) conduct robust ongoing testing with installation of filters for outlets testing above 1 ppb. This is addressed throughout section 9, but specifically in the introduction to the section. EPA should require twice per year sampling of every outlet in a school or childcare center used for drinking, cooking or other human consumption, or if a system chooses the filtration station installation option, it should test it once annually to ensure it is working correctly.

2. The proposed provision to allow States to issue waivers to community water systems from the requirement for lead sampling in schools and child care facilities during the five-year period after the LCRI compliance date if the facility was sampled for lead after January 1, 2021 but prior to the LCRI compliance date and the sampling otherwise meets the waiver requirements of § 141.92(h).

We support a cutoff date of January 1, 2021 for a waiver for facilities with filter first programs. See section 9.

3. Whether or not to allow States to waive the requirements of § 141.92 for CWSs in schools and child care facilities that use and maintain filters certified to reduce lead, and if so, whether the waiver should only be allowed where schools and child care facilities are required by State or local law to install POU devices and maintain them.

The waiver should be limited to schools and child care facilities that are required by state law, local law, or school district requirements to install and maintain POU devices. This is addressed in greater detail in section 9.

4. The minimum requirements for States to provide a waiver (e.g., should the waiver be limited to locations where the filter use is required by State or local law; should the waiver be limited to locations where State or local law requires periodic sampling or testing to ensure proper filter use).

Waivers should be limited to places where certified POU filters are installed, maintained properly, and tested at least once a year. This is addressed in greater detail in section 9.

5. Whether EPA should require CWSs to make school and child care facility sampling results publicly available, and if so, how frequently and in what manner.

EPA should require that all sampling results be made publicly available and disseminated by the water system in a manner calculated to reach parents, guardians, and employees so that

interested parties can identify the facility and related test results. This is discussed further in section 9(C)(iv).

Reporting and Recordkeeping

1. EPA is requesting comment on the expansion of the inventory reporting to include lead connectors and non-lead service lines.

Yes, the inventory should be expanded to include all lead connectors of any length and should require verification of non-lead service lines. See section 2(D)(i).

2. EPA has heard concern over the ability of States to review all required site sample plans and provide approvals in time for the first tap monitoring period, and is requesting comment on whether EPA should consider a phased approach or alternate approach to reduce the burden on States following the rule compliance date.

See section 2(D)(i).

3. EPA is requesting comment on whether States should be required to maintain records related to distribution system and site assessments conducted by water systems.

This is not addressed in our comments.

4. EPA is requesting comment on whether States should be required to maintain documentation of determinations of more stringent implementation, including but not limited to conditions or approvals related to reduced compliance monitoring and additional information required to conduct a review or designate OCCT.

EPA and GAO audits have found that often violations known to states are not passed on to EPA. The final LCRI must make changes that address 1) accurate data submission and transparency, and, 2) rampant noncompliance with the LCR. One such change includes reducing complexity in the convoluted reporting structure by requiring direct electronic reporting of raw monitoring data (rather than just violation data) and other information discussed in our comments to EPA, thereby improving EPA's ability to better understand national patterns of compliance and to diagnose problems faced by states. See section 14 for more detailed discussion of transparency and compliance requirements.

Compliance Dates

1. Whether it is practicable for water systems to implement notification and risk mitigation provisions after full and partial service line replacement (§ 141.84(h)), notification of a service line disturbance (§ 141.85(g)), and associated reporting requirements (§141.90(e)(6) and (f)(6)) upon the effective date of the LCRI.

. As discussed in section 3, it would be practicable for some or all of the LCRI's requirements to take effect less than three years after the LCRI's promulgation, and we

specifically recommend that many or all provisions take effect no later than one year after promulgation. We believe that it is practicable for the notification and reporting provisions discussed in EPA's first question to take effect immediately or nearly immediately after the LCRI's promulgation, because these are largely administrative and procedural changes that do not require major capital improvements or much time to plan and implement.

2. Whether earlier alternative compliance dates for LCRI are practicable such that water systems transition directly from LCR to LCRI in less than three years (i.e., one or two years) based on the assumption that water systems would comply with the LCR until the LCRI compliance date.

This is addressed in section 3 of these comments. We support allowing the specified provisions of the LCRR (plus the LCRR's Tier 1 public notification provisions, as discussed elsewhere in the proposed LCRI) to take effect as planned in October 2024 and we believe that all of the LCRI can and should take effect one year after it is promulgated.

3. Whether there are other LCRR provisions besides the initial inventory and notifications of service line material for which the October 16, 2024 compliance date should be retained.

This is addressed in section 3 of these comments. We support allowing the specified provisions of the LCRR (plus the LCRR's Tier 1 public notification provisions, as discussed elsewhere in the LCRI) to take effect as planned in October 2024 and we believe that all of the LCRI can and should take effect one year after it is promulgated.

Other Proposed Revisions to 40 CFR Part 141

1. Consumer Confidence Report

a. EPA is requesting comment on the proposed requirement for systems to provide an informational statement in the CCR about the school sampling requirements with the information that consumers can contact the school or child care facility about any potential sampling results.

See section 8(F).

2. Definitions

a. EPA is seeking comment on all aspects of the proposed definitions, and specifically the following:

b. EPA is proposing to define a two-foot maximum length of connectors. EPA proposes that "connectors" that exceed two feet in length be treated as a service line. EPA is requesting comment on the defined length of a connector.

See section 2(D)(i).

Section 17: Conclusion

We applaud EPA's efforts to strengthen and simplify the regulation of lead and copper in drinking water to achieve the Safe Drinking Water Act's mandate to protect public health. Our comments highlight the significant positive steps EPA proposed in the LCRI and identify many additional ways EPA should strengthen and streamline the LCRI before it is finalized. We would be happy to discuss any of our comments further or provide any additional supporting information that would assist EPA. We look forward to working with EPA on the shared goal of ensuring that every person—no matter their race, income, or zip code—enjoys the right to safe, affordable, lead-free drinking water.

Respectfully submitted,

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