

SUBMITTED VIA DOCKET
No. EPA–HQ–OW–2022–0801; FRL–5423.2–01–OW
& EMAIL TO LCRI@EPA.GOV.

February 5, 2024

Michael Goldberg
U.S. Environmental Protection Agency
Standards and Risk Management Division
EPA Office of Water
1200 Pennsylvania Ave. N.W.
NW, Mail Code 4607M
Washington, DC 20460

Re: EPA–HQ–OW–2022–0801; FRL–5423.2–01—Office of Water – National Primary Drinking Water Regulations for Lead and Copper: Improvements (LCRI)

Dear Mr. Goldberg,

Denver Water submits this comment letter in response to the U.S. Environmental Protection Agency’s (EPA) request for comments on the proposed National Primary Drinking Water Regulations for Lead and Copper Rule Improvements (LCRI).

Denver Water is committed to delivering safe water to our customers. In 2012, Denver Water’s Lead and Copper Rule (LCR) sampling results exceeded the action level measuring the amount of lead present in a customer’s tap water under the LCR. After years of public education and study, in 2018, the Colorado Department of Public Health and Environment (CDPHE) designated orthophosphate as Optimal Corrosion Control Treatment (OCCT) for Denver Water’s potable drinking water system. Denver Water and many other regional partners came together with concern regarding the designation due to downstream impacts that would affect natural streams and rivers, source water for drinking water plants, wastewater treatment plants, stormwater water providers, and other ecological impacts. These stakeholders assessed the loading and cost impacts from the introduction of additional phosphorus to municipalities and watershed as compared to a pH adjustment. Denver Water put forth a plan using filters, accelerated lead service line (LSL) replacements and pH adjustment for corrosion control, providing statistical evidence that this approach was at least as effective at lowering lead levels and protecting the health of the community as using orthophosphate for corrosion control treatment to protect public health.

As a result of this stakeholder effort, in 2019, Denver Water became the first in the nation to receive approval from the EPA, as well as the CDPHE, for a variance from Rule 40 C.F.R. § 141.82(e) Subpart I of the LCR. The variance has enabled Denver Water to chart a new path with the Lead Reduction Program, one that permanently addresses lead exposure in drinking water through an accelerated lead service line replacement program that will remove all LSLs

within 15 years beginning in 2020. Since 2020, Denver Water has met all metrics of its variance. A new variance was granted to Denver Water in 2022 under the Lead and Copper Rule Revisions (LCRR).

The Lead Reduction Program includes five key elements: 1) the development of an online, publicly accessible LSL inventory; 2) the replacement of all LSLs in our service area within 15 years at a 7% annual replacement rate; 3) a filter distribution program to customers who may have an LSL; 4) comprehensive communications, outreach and education efforts; and 5) the incorporation of equity principles (referred to as health equity and environmental justice, or HE&EJ, in official reporting) in all aspects of the program.¹

Through the Lead Reduction Program, over the last four years Denver Water reduced lead exposure to levels below what was initially projected at the time of the original variance approval, and what could be achieved under the LCRR. Denver Water has created a comprehensive LSL inventory that is continually being updated, has successfully replaced over 22,000 customer-owned LSLs, maintained a long-term pitcher filter distribution program, and lowered regulatory lead sampling results to below 5 parts per billion through the maintenance of pH and alkalinity. Based on the performance under the variance metrics and the results from the lead equivalency model, the variance and Lead Reduction Program are objectively more effective at lowering lead levels at customers' taps compared to the use of orthophosphate treatment under the LCRR. In addition, the Lead Reduction Program has incorporated HE&EJ principles to help prioritize areas and specific properties within Denver Water's service area to investigate and replace LSLs, as well as to maximize outreach efforts with vulnerable populations as well as disproportionately affected communities and neighborhoods.

Denver Water appreciates the opportunity to comment on the proposed LCRI and supports the efforts to protect public health and the potential exposure of lead in drinking water. Among the listed developments in the LCRI, Denver Water supports accelerating the replacement of LSLs, lowering the Action Level threshold to 10 parts per billion, the incorporation of connectors or lead goosenecks into system inventories, and increasing consumer communication and outreach efforts.

Comments on Costs of LSL Replacement Programs:

1. ***EPA should consider assuming a higher average cost for LSL replacements than is currently assumed.*** The cost for Denver Water to fully replace an LSL can range from \$5,000-\$12,000 per replacement, which includes required exterior restoration. Cost efficiencies are gained when combining LSL replacement with a water main replacement project or by grouping hundreds of properties in a single work package. Costs can increase when it is a larger diameter pipe, construction activities are occurring in a major roadway, and also with the restoration of landscape and hardscape surfaces. Based upon Denver Water's experience, the average cost for contractors to replace LSLs in geographically concentrated work areas is \$9,600, not including the administrative, management and outreach costs. Additionally, Denver Water has found that covering exterior restoration costs (e.g., asphalt

¹ Denver Water Lead Reduction Program Plan, Amendment to Original Plan – 2023, available at: <https://www.denverwater.org/sites/default/files/lead-reduction-program-plan-amendment.pdf>

repair, concrete, landscape) is a necessary cost to comply with permits required to do the work, including stormwater and street occupancy permits.

2. ***Financial funding guidance is needed to assist water providers to understand what funding options are available to replace LSLs.*** Denver Water is replacing customer-owned LSLs and providing pitcher filters to customers until six months after their LSLs are replaced at no direct charge to the customer notwithstanding the fact that customers own their service lines from the main to their properties. Protecting the public from the potential impacts of customer-owned LSLs that were installed during the first half of the 20th century will cost hundreds of millions of dollars over the life of the program. With its variance, which approved an alternative treatment technique that Denver Water is required to perform, Denver Water was able to use ratepayer resources and bond financing to spread the costs across all ratepayers, similar to other water treatment costs. Additionally, Denver Water followed accounting standards to capitalize the cost of LSL replacements and pitcher filter distribution. The ability to capitalize the cost of LSL replacements and pitcher filters has allowed Denver Water to spread the costs for the program with rate increases over time rather than incurring them all at once. This has kept rates affordable for Denver Water customers while undertaking this important public health effort.

3. ***Federal funding is essential to the successful implementation of the LCRI.*** In 2022, Denver Water received \$76,123,628 from the Colorado Drinking Water State Revolving Fund, thanks in part to the federal bipartisan Infrastructure Investment and Jobs Act signed into law by President Joe Biden in November 2021. The state approved allocation of funds to Denver Water in October, and the Denver Board of Water Commissioners formally accepted the funds Dec. 7, 2022. The funding Denver Water received is a low-interest loan that the utility will repay, with \$40 million of the loan's principle forgiven immediately, as allowed by the legislation. The money is being spent 2023 through 2025 and will support the replacement of 6,800 more LSLs than we originally planned. Thanks to the new funding, 2,000 lines were replaced in 2023 — on top of the nearly 5,000 lines completed last year. Denver Water complies with all the federal requirements and absorbs the 10%-15% non-reimbursable costs (e.g., meters and meter pit fittings) through the program's normal funding mechanisms.

4. ***Water Providers need additional tools to finance replacement of LSLs.*** Even with existing federal funding, water providers will need additional financing tools to close the substantial gap between the costs to undertake this work and available funding sources. Water providers face particular challenges in finding ways to finance the replacement of privately-owned LSLs. In Denver Water's case, we had to obtain a private letter ruling from the Internal Revenue Service (I.R.S.) to confirm our ability use tax-exempt debt to pay for replacement of LSLs owned by our customers due to the "private use" limitations generally applicable to tax-exempt bonds. The *Financing Lead Out of Water Act* (H.R. 6985) would amend the private use test to exempt LSL replacement, allowing other water providers to utilize this important funding tool without having to seek costly individual determinations from the I.R.S. Financing private lines over the life of the asset significantly reduces the impact to customers' bills. EPA's support

of this, or revenue ruling to accomplish the same objective, could be instrumental in reducing a significant barrier to replacing LSLs while maintaining affordable rates.

Comments and Recommendations on the Proposed LCRI Requirements:

The last four years of implementing the Lead Reduction Program have brought many successes and challenges. The replacement of LSLs is a permanent solution to addressing a major contributor to lead in drinking water, but it is also a heavy cost burden on water utilities, and the replacement at individual properties can be a very difficult task. Denver Water has evaluated these experiences and submits the following comments and suggested modifications to clarify and improve the LCRI:

5. ***Denver Water supports the proposed lead action level of 0.010 mg/L. Denver Water prioritizes public health and the removal of lead in drinking water and believes 0.010mg/L is an appropriate action level for the LCR.*** The action level is a level at which water providers must take additional steps to try to reduce lead levels in their system and raise customer awareness. The action level was never intended to be a maximum contaminant level. Denver Water is concerned that if the action level is set too low, many water providers will exceed the action level on a frequent or constant basis. This may have the unfortunate effect of reducing the effectiveness of certain actions triggered by an action level exceedance, such as customer education. If water providers are communicating with customers on a relatively constant basis that they are above the action level, this has the potential to cause customers to become desensitized to this important public notice. Water providers may also have to expend valuable resources that could be used for LSL replacement programs on OCCT and re-optimization studies. For these reasons, Denver Water supports an action level of 0.010 mg/L.

6. ***Denver Water is concerned that the proposed maximum replacement requirement of 10,000 LSLs per year is not feasible for many water providers and recommends EPA instead adopt a maximum limit of 8,000 LSL replacements per year.*** Denver Water supports the proposed minimum LSL replacement rate and replacement deadlines, although replacement of all LSLs within 10 years will be difficult for water providers that have large numbers of LSLs. Denver Water's program is a 15-year program, which requires the replacement of nearly 64,000 total LSLs at a rate of 7% per year. This is an accelerated program that has required additional staffing, contractors, and extensive resources to accomplish. Between 2020 and 2024, Denver Water has spent \$2.4M on additional staffing to administer the program and \$308M on the LSL replacements themselves. It has also required careful coordination with the City and County of Denver's transportation department as well as other utilities to avoid conflicts related to road construction, utility work, and street paving. A program on the magnitude of 10,000 LSLs per year may approach the level where traffic and transportation, and general construction is affected. Medium to large systems with large quantities of LSLs will have a difficult time replacing all LSLs within a 10-year period and reducing the time frame for such systems to less than 10 years would likely not be feasible. For water providers that are managing massive capital infrastructure projects and challenges, a large 10-year LSL replacement program will be especially difficult to sustain. For these reasons, Denver Water believes an annual 8,000 LSL replacement requirement is more realistic,

although 2024 will be the first year it has attempted to reach this number through its replacement program.

7. **For water providers with a significant number of LSLs, EPA should consider excluding the first two years of the LSL replacements from the three-year rolling average to give water providers a buffer to gain experience with LSL replacements.** In Denver Water’s experience, it would have likely failed to replace 10,000 LSLs in the first year of its variance. During the first year of its variance, Denver Water achieved 4,800 LSL replacements which was a monumental effort and a significant learning experience. While EPA proposes to adopt a three-year rolling average, if a water provider that has a significant number of LSLs only achieved 4,800 LSL replacements in its first year, it would be extremely difficult to recover in subsequent years.

8. **EPA should provide states with the authority to waive the requirement 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.** Corrosion control treatment studies can be resource-intensive, costly, and time-consuming. Denver Water believes that if water providers are able to meet certain metrics, such as an accelerated LSL replacement effort or pitcher filter distribution program, resources expended toward these efforts can be better utilized to advance public health. Prior to the Lead Reduction Program approval, Denver Water, state and local regulators and other stakeholders evaluated the downstream impacts and cost that would affect natural streams, rivers and wastewater treatment plants associated with using orthophosphate as corrosion control treatment.² The estimated costs of orthophosphate implementation to the Front Range were higher than the estimated costs of implementing the Lead Reduction Program, which offered a more permanent solution to addressing lead in drinking water by replacing LSLs at an accelerated rate. By having the option to implement the Lead Reduction Program in lieu of orthophosphate treatment, Denver Water was able to invest resources in the permanent removal of lead as opposed to a treatment method that would have required the downstream investment in new clean water nutrient treatment removal technologies and contributed additional phosphorous loading to already nutrient-stressed waters throughout the region.

TABLE 3: LIFE CYCLE COSTS IN TERMS OF NET PRESENT VALUE

| Assumption | Orthophosphate (at 2 mg/L as PO ₄) | Variance |
|---|---|------------------|
| Excluding Existing Service Line Replacement Efforts | \$322M to \$506M | \$265M to \$362M |
| Including Existing Service Line Replacement Efforts | \$376M to \$582M | \$319M to \$439M |

² Documents from this stakeholder process can be accessed using the following link: https://drive.google.com/drive/folders/1QOsD1TFFMQRWsFQz9fpX3_BJI_XgGdvy

9. ***EPA should adopt clear regulatory pathways that would allow a system to defer OCCT using orthophosphate by implementing an alternative treatment technique program.*** Such an option is desirable for water providers in parts of the country with nutrient-stressed waterways, climate-impacted streams, and strict nutrient-based water quality regulations. However, the system should not be required to implement orthophosphate as OCCT at the end of its program, as this would eliminate the incentive to adopt such a program. Additionally, EPA has requested comment whether, as a condition of deferring OCCT, a system should commit to replacement of at least 20 percent removal per year and must have no LSLs, galvanized service lines requiring replacement (GRR) , or lead status unknown service lines remaining at the end of the five-year period. Denver Water believes that such a level of replacement is not a realistic option for most water providers. A 10% removal rate is a much more realistic option, coupled with a pitcher filter distribution program.

10. ***Denver Water supports the definition of reasonable effort under § 141.84(d)(3)(i) as four attempts to obtain property owner consent.*** Water providers should be required to make at least four attempts to obtain customer consent for LSL replacement. Denver Water was one of the first utilities in the country to adopt a standard operating procedure to follow up with customers multiple times to obtain their consent to an LSL replacement. Through the first four years of Denver Water’s Lead Reduction Program, Denver Water has a consent rate average of 95% with 3-4 attempts at contact. In Denver Water’s experience, more than four attempts could become burdensome for utilities to track and implement and counterproductive with customers.

11. ***EPA should broaden § 141.84(d)(3)(i)-(ii) by revising references to “property owner consent” to “property owner or tenant consent, as applicable.” EPA may want to consider making similar changes to §§ 141.85(a)(vi)(E) and (F) as well.*** Under the common law in most states, property owner consent is not required or effective to conduct an LSL replacement in a single-family residential property because a landlord has surrendered control of the property to the tenant, who has exclusive use over the property, subject to the terms of their lease. An exception to this would be situations where systems require access to a common area over which the landlord retains exclusive control. This does not mean that a tenant is necessarily responsible for the LSL replacement, as in many states, landlords, not tenants can be held responsible for upgrades to property required by government action unless the tenant’s particular use of the leased space triggers the government order.

12. ***Denver Water supports the proposed requirement to ban partial lead and GRR service line replacement unless it is conducted in accordance with emergency or planned infrastructure work under § 141.84(g)(1) (excluding planned infrastructure work solely for the purposes of replacing lead and GRR service lines as part of a service line replacement program).*** If a system can obtain customer cooperation, a partial LSL replacement should never be performed. However, there are times when partial LSL replacements are unavoidable, such as when a customer’s property cannot be accessed. During both emergency work and planned work, where a customer’s consent cannot be

obtained or property cannot be accessed, for the sake of protecting and completing work on a distribution system, a partial LSL replacement cannot be avoided. Fortunately, in Denver Water's experience, the instances where customers do not provide consent, or their property cannot be accessed are few in number.

13. ***Inventory Validation Requirements.*** Denver Water recommends that EPA clarify whether systems currently complying with inventory validation requirements adopted by EPA or primacy states under the LCRR will need to be revalidated under §§ 141.84(b)(5)(i)-(ii) of the LCRI, or whether validation decisions made under the LCRR will control over the new LCRI requirements, i.e., clarify that systems do not have to repeat validation requirements under the LCRI where primacy agencies have approved of inventory decisions under the LCRR. The LCRI has the potential to create confusion for systems relying on current EPA and state guidance to validate randomly sampled pools of customer properties prior to the compliance date for the LCRI. The requirement to have a random sample and exclusion of previously developed data from the validation pool is also problematic for water providers that are already developing inventories through inspections, water quality tests and potholing. Alternatively, EPA should make the inventory requirements effective in 2024 to avoid confusion over whether validation work done now, will have to be repeated when the LCRI goes into effect.

14. ***EPA should include alternative requirements for systems to validate their inventories using predictive modeling to determine the probability of LSLs within a service area.*** Predictive modeling seeks to determine the probability of a location of LSLs within geographic areas in a service area, not through a minimum number of random samples, but instead through an abundance of samples, and other forms of evidence, such as record reviews, water quality testing, potholing, and interior investigations. Some systems, such as Denver Water, are already using predictive models developed through abundant data that has already been collected. If systems that use predictive modeling are required to meet the same data and validation requirements as proposed under Rule §§ 141.84(b)(5)(i)-(ii), such systems will be forced to invest resources unnecessarily to develop new data and collect random samples where they may already have a reliable model capable of predicting the location of LSLs in their service area. For systems that use predictive modeling, EPA should instead require their model have a confidence level of at least 95%.

15. ***EPA should reconsider the deadlines for systems to provide sampling results to customers.*** Rules §§ 141.85(d)(2) and (4) would require systems to deliver sampling results to consumers within three days of learning of the sampling results. Where systems are managing large numbers of consumer tap sample requests, a three-day timeline is not feasible. If systems utilize a contract lab, there is typically a 1-2-day timeline to receive results and another few days to review, authorize and confirm results. Once that review is completed, a letter will need to be mailed, which can take up to 10 days if the mailing service is managed out of state. An additional consequence of requiring three days to provide notice is that water providers will need to focus on meeting short deadlines to distribute lead water quality results, which may detract from attention to other pressing water quality concerns that cause more

acute health impacts. Denver Water recommends that EPA instead adopt a 14-day time frame from when systems learn of sampling results to deliver the results to customers.

16. **Denver Water supports conducting all public education activities related to an exceedance within 30 days.** A prescriptive time period to complete all activities may result in rushed completion of activities that does not create the greatest opportunity for educating the public. Flexibility should be provided to water providers, through consultation and approval with the state, to develop an appropriate timeline to complete public education activities.

17. **Denver Water recommends that EPA keep the requirement for systems to provide notice to customers whether their LSL is made of lead, GRR, or unknown material to no more than once a year.** For large systems, issuing such notices more frequently than once a year can become costly and have a desensitizing effect on customers.

18. **Translation of educational materials.** For the Lead Reduction Program, Denver Water used local and state information to identify languages spoken within its service area. For example, Denver Water was able to incorporate (along with state data), the City and County of Denver neighborhood demographics along with language preferences from Denver Public Schools to identify language preferences in addition to limited English proficiency. To the extent possible, states should support the development of these needs for smaller utilities requiring assistance. Denver Water also recommends that EPA require state primacy agencies to provide translation services to support systems that are unable to do so for consumers with limited English proficiency. For Denver Water's Lead Reduction Program, translation and interpretation costs are ongoing and borne by the utility to ensure access to program information and meeting resources. These costs are upwards of \$10,000 annually, and the ongoing nature of these costs could be burdensome for smaller systems. Denver Water wholeheartedly supports states providing resources to meet water providers interpretation and translation needs.

19. **Definition of service line.** Denver Water encourages EPA to consider the American Water Works Association's suggested revision to the definition of a service line, as shown below:

Service line, for the purpose of subpart I of this part only, means a portion of pipe which directly connects the community water system's water main to the building inlet first fitting inside the building (i.e., connecting the service line to the building water system). Relevant service lines are those that supply water for drinking and cooking in the building. The term service line does not include private water mains. Where a building is not present, the service line connects the water main to the outlet. Where a private main exists between the community water system main and a building, associated service lines are not subject to subpart I. (§ 141.2 of LCRI)

Systems should not be responsible for (1) diagramming on-site distribution system piping networks or (2) taking responsibility for "distribution systems" maintained by others and only

connected to the water system by virtue of the sale of water through a mass meter. Many, if not most, of these situations either are state-recognized public water systems or are public water systems as defined by the Safe Drinking Water Act. Their status as unregulated (or less regulated) public water systems (PWSs) should not lead to a burden on regulated PWSs.

20. ***State Waivers for Previously Performed School and Child Care Sampling.***

To avoid a duplication of efforts and unnecessary cost impacts, EPA should immediately implement the proposed rule to allow states to issue waivers to 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 Jan. 1, 2021, but prior to the LCRI compliance date and the sampling otherwise meets the waiver requirements of § 141.92(h). Colorado has adopted a school testing program that meets the requirements of the LCRR and LCRI, and is already performing testing of schools and child care facilities under the program. However, because the LCRR does not currently provide a waiver for such a testing program, testing in Colorado will need to be repeated. EPA should accelerate the compliance date for this rule to avoid a duplication of resources, as without an accelerated compliance date, Colorado school districts and possibly water systems will need to repeat testing.

Once again, Denver Water appreciates the opportunity to comment on the proposed LCRI and supports the efforts to protect public health and the potential exposure of lead in drinking water. Replacing LSLs within a 10-year timeframe is an ambitious and proactive approach, and we strongly encourage EPA to provide additional funding mechanisms to assist utilities with this work.

Thank you for the opportunity to submit public comments on the questions posed. If you have any questions regarding this comment letter, please do not hesitate to contact me.

Sincerely,



Alan Salazar
Denver Water CEO