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## Safe Drinking Water Act (SDWA): Proposed Lead and Copper Rule Improvements (LCRI)

Concerns about lead's adverse health effects, particularly on children, continue to drive efforts to reduce lead exposure through drinking water. Some water pipes, called service lines, that connect water mains to residences and buildings may be made from lead. These lead services lines (LSLs) are one potential source of lead exposure. A 2008 study funded by the American Water Works Association (AWWA) Research Foundation and the U.S. Environmental Protection Agency (EPA) estimated that, under laboratory conditions, LSLs were the major contributor to lead levels in tap water, contributing an average of 50%-75% of the lead measured. Controlling corrosion of pipes, including LSLs, continues to be the primary method to keep lead from entering tap water, for reasons discussed below.

In December 2023, EPA proposed a rulemaking that the agency calls the Lead and Copper Rule Improvements (LCRI; 88 *Federal Register* [FR] 84878). EPA's proposal follows promulgation of the Lead and Copper Rule Revisions (LCRR) in 2021, a long-term effort to revise the 1991 Lead and Copper Rule (LCR) (86 *FR* 4198). CRS Report R46794, *Addressing Lead in Drinking Water: The Lead and Copper Rule Revisions (LCRR)*, contains further details on these rules. EPA's LCRI would revise several LCRR requirements and would expand certain requirements, including replacement of all LSLs. This In Focus discusses the existing drinking water regulations for lead, selected elements of the proposed LCRI, and potential implementation challenges. (Water system requirements for lead, rather than for copper, are outlined below.)

### Safe Drinking Water Act (SDWA)

EPA promulgates its lead and copper rules under the Safe Drinking Water Act (SDWA), which authorizes EPA to regulate contaminants in public water supplies (42 U.S.C. §300g-1). SDWA regulations apply to public water systems, which can be owned and/or operated by public or private entities (e.g., investor-owned utilities and homeowner associations). SDWA requires EPA to review and revise, as appropriate, its regulations every six years, and it requires that any revisions maintain or provide for increased public health protection (42 U.S.C. §300g-1(b)(9)). CRS Report R46652, *Regulating Contaminants Under the Safe Drinking Water Act (SDWA)*, further discusses SDWA regulations.

SDWA authorizes states and tribes to assume primary responsibility (primacy) for oversight and enforcement of water system compliance with EPA's regulations (42 U.S.C. §300g-2). Except for Wyoming and the District of Columbia, all states, U.S. territories, and the Navajo Nation have primacy. EPA directly oversees water systems in nonprimacy areas and retains oversight of primacy states.

Congress has used several approaches under SDWA to limit exposure to lead through drinking water. These include limiting the lead content of plumbing materials and fixtures; establishing public notification and education requirements; and authorizing grant programs for lead reduction projects, testing for lead in water at schools and child care programs, and removing lead-lined drinking water coolers from schools. Also, the Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) provides \$3.0 billion for each of FY2022-FY2026 for the Drinking Water State Revolving Fund (DWSRF) for LSL replacement projects and related activities. CRS Report R47717, *Lead Service Lines (LSLs) Replacement: Funding Developments* contains more details.

### Lead and Copper Rulemakings

In 1991, EPA issued the Lead and Copper Rule (LCR). The LCR replaced a previous rule that set a drinking water standard for lead of 50 parts per billion (ppb) measured at the water treatment plant. Lead primarily enters water after it leaves the treatment plant as it travels through the distribution system to the water tap. If the water has corrosive properties, lead can leach from lead-containing pipes, plumbing materials, and fixtures (e.g., faucets) present in the distribution system and plumbing.

To address this potential outcome, EPA developed the LCR, which requires water systems to sample water at the tap rather than at the treatment plant. The LCR does not include an enforceable standard; rather, the LCR establishes a treatment technique that is triggered when the lead "action level" is exceeded. The LCR's lead action level is 15 ppb, based on the 90<sup>th</sup>-percentile level of lead in tap water samples. An exceedance of the action level is not a violation of the rule but triggers "treatment technique" actions that a water system is required to take.

If more than 10% of a water system's samples exceed 15 ppb—called a "system-wide exceedance"—the system is required to take actions that depend on the system's size and corrosion control treatment (CCT) status. The required enforceable treatment technique actions include (1) CCT optimization, (2) water quality parameter monitoring, (3) source water monitoring, (4) LSL replacement, and (5) public notification and education.

In 2004, EPA initiated a comprehensive review of the 1991 LCR, issuing short-term and intermediate clarifications to the rule in 2007 (72 *FR* 57782). EPA worked with states, water utilities, and others to develop comprehensive "long-term" LCR revisions, which the agency issued in 2021. In the 2021 LCRR, EPA retained the LCR's treatment technique and revised several of the rule's requirements (86 *FR* 4198). Also in 2021, EPA stated its intent to

propose a new rule, the LCRI, to further revise the LCRR (86 FR 71574).

## Lead and Copper Rule Improvements

In December 2023, EPA proposed the LCRI. The proposed rule would revise several aspects of the 2021 LCRR. These revisions include changes to tap sampling procedures and locations; requirements for CCT based on other LCRI changes; public notification and education regarding service line replacement and other topics; school and child care sampling requirements; and water quality parameter monitoring requirements. Further, the LCRI would expand requirements for primacy states, requiring them to report data on service line replacement activities. Selected LCRI changes are discussed below.

### Reduced Action Level

The 2021 LCRR retains the 1991 LCR's lead action level of 15 ppb and adds a "trigger level" at 10 ppb. The trigger level requires water systems to take actions that are intended to enable them to respond more quickly if their system subsequently exceeds the action level. The LCRI proposes to eliminate the trigger level and reduce the lead action level to 10 ppb. A system-wide exceedance of the LCRI's reduced lead action level would then require a system to take treatment technique actions. In addition, water systems with three or more system-wide action level exceedances in a five-year period would be required to take further actions, such as providing water filters to customers.

### Service Line Inventories

The LCRI proposes new requirements for water systems' service line inventories. The 1991 LCR required water systems to perform an initial survey of the materials that composed their distribution systems, which informed tap water sampling locations. The rule did not require water systems to update their initial surveys. The 2021 LCRR requires water systems to inventory their service lines by October 2024 and update them annually or triennially. Systems serving more than 50,000 people must also post their inventories online. Under the LCRR, systems are required to identify if service lines are made of lead, galvanized or other nonlead material, or unknown material. The LCRI would not change the 2021 LCRR's initial inventory but would require changes in updated inventories.

Among the changes, the LCRI would require water systems to update inventories annually. Further, water systems would be required to include connectors in their inventory, as well as provide the street addresses of service lines and connectors in a publicly accessible manner. Water systems would be required to identify all service line materials in their inventory within 10 years of the LCRI's effective date. Water systems would be required to validate the material of nonlead lines within seven years of that date.

### Replacement Plans

The 2021 LCRR requires water systems with LSLs or service lines of unknown material to develop LSL replacement plans. The LCRI proposes to revise the requirements of such plans. Under the LCRI, as part of a replacement plan, a water system would be required to identify any state or local laws or water tariff provisions that limit a water system's ability to replace the entire

service line. Further, the LCRI would require water systems' plans to include a strategy for communicating with customers and prioritizing replacement. Water systems would be required to develop and publish their plans in a publicly accessible manner within three years of the LCRI's finalization.

### LSL Replacement Within 10 Years

Unlike previous rules, the LCRI would require LSL replacement regardless of whether a system had an action level exceedance. EPA's LCRI would require systems to replace, within 10 years, LSLs and "galvanized requiring replacement" (GRR) service lines (i.e., galvanized service lines that are or ever were downstream of an LSL). Water systems would be required to replace all LSLs and GRR lines under "control" of the water system. The LCRI estimates that 96%-99% of all water systems would feasibly be able to comply with this requirement, and the LCRI proposes to allow states to establish shorter time frames, if feasible. As is required by SDWA, EPA finds that the proposed rule, including this requirement, is affordable for larger water systems, citing examples of state initiatives in Michigan, Rhode Island, New Jersey, and Illinois for 100% LSL replacement.

EPA proposes criteria to evaluate which systems would be eligible to defer replacing all LSLs past the 10-year time frame. One criterion is based on the number of LSLs or GRR lines relative to the households served by the system. This ratio is intended to assess whether a water system has sufficient financial resources from customers' water bills to cover replacement costs. If the ratio were to exceed the LCRI's estimated per-household replacement rate, then a system would be eligible for a deferral. The other criterion is whether the system would have to undertake more than 10,000 replacements per year to meet the time frame. If so, then a system would be eligible for a deferral.

### Eligibility for Small System Flexibilities

The 2021 LCRR provides certain compliance flexibilities to small water systems that serve 10,000 or fewer people. The LCRI would revise the threshold to be eligible for these flexibilities, making them available to systems serving 3,300 or fewer individuals. About 81% of water systems serve 3,300 or fewer people. These smaller systems serve about 7.6% of the total population served by water systems.

### Implementation Considerations

If finalized, the LCRI would expand requirements for water systems to replace LSLs, among other requirements. As communities are still locating LSLs, the scope of these requirements' effects remains to be seen. Through IJA, Congress specifically dedicated \$15 billion to these projects, yet the scale of investment needed is unclear. In 2023, EPA estimated that there are roughly 9.2 million LSLs nationwide, and that the cost to replace them would range from \$50 billion to \$80 billion (2021 dollars). As water systems complete their inventories, increased attention maybe paid to the proposed LCRI and potential compliance costs.

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