



December 12, 2022

Dr. Jennifer McLain
Office of Groundwater and Drinking Water
U.S. Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC 20009

RE: Lead and Copper Rule Improvements, Docket No. EPA-HQ-OW-2022-0813

Dear Dr. McLain,

The state and territorial primacy agencies are co-regulators with the Environmental Protection Agency (EPA) in the development and implementation of drinking water regulations. As such, ASDWA's members have a unique relationship with EPA when compared to other drinking water stakeholders, including the regulated community, (i.e., the water systems). This relationship provides unique opportunities and challenges in the regulatory development process, especially for the complex rules derived from the Lead and Copper Rule (LCR), the Lead and Copper Rule Revisions (LCRR), and the anticipated Lead and Copper Rule Improvements (LCRI). ASDWA appreciates the opportunity to provide early input to the LCRI, based on the Federalism Consultation on October 13, 2022.

ASDWA's members have been implementing the current LCR since it was originally published in 1991, including the minor revisions in 2000 and 2004 and the short-term revisions in 2007. Members are also currently working to implement the service line inventory components of the LCRR ahead of the LCRI. As such, ASDWA's members have a breadth and depth of knowledge on the details of LCR implementation that EPA needs to incorporate into the proposed LCRI. As EPA's development of the LCRI continues, ASDWA's members, as co-regulators with EPA, need to continue to be included in these efforts to ensure the final LCRI can be implemented in such a way that both protects public health and streamlines the overall rule complexity. The LCRI must be feasible to implement.

ASDWA's detailed comments that follow this letter contain several important recommendations that EPA needs to thoughtfully consider for the LCRI. The major points in the comments include:

- Definitions – need clear definitions of “galvanized requiring replacement” (GRR), lead goosenecks and a “full” lead service line replacement (recommend to the building wall)
- LCRI needs a standard percentage for **proactive** lead service line replacement
- Eliminate the trigger level – states did not reach a consensus on whether to revise the Action Level (AL) to 10 ppb or have the AL remain at 15 ppb
- LCRI needs staggered deadlines for the new start of LCRR/LCRI compliance monitoring

- EPA needs to provide clear guidance to states as to which compliance deadlines and provisions from the LCRR will be required and which will not
- Tap sampling
 - Consider random daytime sampling
 - Use the highest value of 1st and 5th liter samples
 - Need flexibility for states for sample invalidation
 - EPA should establish a maximum stagnation time
- Rename “find and fix” to “educate and assess” or a similar name
- Corrosion control treatment needs to be streamlined
 - Minimize the use of pipe loop studies and allow desktop and coupon studies
- LCRI should update copper educational materials and include copper corrosion considerations
- Small system flexibilities should be integrated into the CCT portion of the LCRI and be limited to PWS with populations less than 3,300
 - POU flexibilities should be limited to systems who control their entire distribution system (i.e., NTNCs, nursing homes, correctional facilities, etc.)
- System-wide distribution of filters or bottled water should not be required for an ALE
- LCRI needs additional information on what actions schools and child care facilities should take with samples above the Action Level
 - School/childcare sampling should be aligned with 3Ts
- LCRI needs updated and clear risk communication materials
- EPA needs to expeditiously prioritize the development of LCRR and LCRI implementation guidance for state primacy agencies
- LCRI needs updated data management capabilities for states to track requirements, particularly with lead service line replacements (LSLRs)

Again, ASDWA appreciates the opportunity to provide early input on the LCRI. As co-regulators with EPA, states request a continued dialogue during the rule writing process. States are willing to provide expertise and guidance on rule components that could be more streamlined and can help to identify new and innovative solutions that could address problems that have arisen during the last 30 years of implementation. States encourage OGWDW to confer with ORD, and regional direct implementation staff, as well as states in ensuring the LCRI is truly an improvement over the existing regulation—that it is implementable, feasible, and improves public health.

ASDWA’s members look forward to continuing our partnership with EPA to implement the LCRR. If you have any questions about this early input, please feel free to reach out to me (aroberson@asdwa.org) or Ashley Voskuhl (avoskuhl@asdwa.org).

Sincerely,



J. Alan Roberson, P.E.

ASDWA Executive Director

ASDWA's LCRI Federalism Comments

Definitions

Numerous states have indicated that they do not support the updated lead service line (LSL) definition in the LCRR. The definition is cumbersome, referencing lead goosenecks and lines that are “galvanized requiring replacement” (GRR). The exclusion of lead goosenecks from the definition causes confusion with respect to the definition of a “galvanized requiring replacement (GRR)” service line (SL) and in the inventory requirements. Now that EPA has established a definition of lead gooseneck in the LCRR, states recommend that EPA further clarify that definition by including a definitive maximum length which can be counted by a public water system (PWS) as a gooseneck, not an LSL, and remove “typically” from the definition. Alternatively, EPA could reintegrate lead gooseneck back into the definition of LSL. Some states have concerns that by separating these definitions, there will be customers served by a lead gooseneck that will not receive the same amount of information as customers with LSLs, since goosenecks are not required to be included in the inventory. If these customers look at publicly accessible inventories, they would not be informed of their potential exposure to lead. Additionally, if the ultimate goal is 100% replacement of lead, then leaving goosenecks in the ground is contrary to that goal.

Additional clarification is needed in the definitions as to whether a galvanized line would be classified as a GRR if it were downstream from a lead gooseneck or if it is only a GRR if it was downstream from an LSL. While EPA's Service Line Inventory Guidance clarified that a galvanized line downstream of a lead gooseneck is not considered a GRR, this should be defined in rule. Further separation of the definitions of lead service line, lead gooseneck/pigtail/connector, and GRR may provide additional clarity. One state recommended EPA further clarify in the definitions that lead goosenecks must be removed but a galvanized service line downstream of a lead gooseneck is not considered a GRR and not required to be removed. Another state recommended that the confusion around GRR, goosenecks, and LSLs could be clarified and streamlined, while also providing more stringent public health protection, if goosenecks were reintegrated into the LSL definition.

States recommend clearly defining "upstream" and "downstream" and the context for using those terms in the LCRI and other regulations. Operators think of upstream and downstream in terms of the distribution system as it relates to bacteria sampling, so it is critical that the rule is clear regarding these definitions. The rule needs to clarify if upstream and downstream is contained to a single service line for the LCRI as opposed to within the distribution system. This would help to clarify GRR.

States also request that EPA clearly define a “full” replacement, i.e., provide clarity that replacement stops at the building wall. For example, does full replacement stop inside or outside the building wall? Most states recommend that replacement stop outside the building wall so that water systems aren't required to enter the basements of homes, altering foundations. One

state indicated that the replacement should be replaced to the fullest extent possible, regardless of the impact on the basement or foundation wall. EPA should determine the extent to which the PWS should replace the line and in the LCRI ensure there is clarity for states, systems, and homeowners on the difference between a service line and premise plumbing, and what will be replaced by the system.

Clarifying these crucial definitions will greatly support consistency in implementing the LCRI and replacing all of the LSLs across the country. The definitions are utilized throughout the rule, including the tiering criteria for sampling, and the LSL replacement criteria. It is critical that states, systems, and consumers are clear on the applicability of requirements to specific situations.

Lead Service Line Inventories, Replacements, and Replacement Plans

States strongly support EPA's goal of achieving 100% full lead service line replacement (LSLR), especially considering the historic funding provided to the state revolving fund (SRF) specifically for LSLR through the passage of the Bipartisan Infrastructure Law (BIL). States encourage EPA to capitalize on the current bi-partisan support for equitable drinking water infrastructure improvements by requiring all PWSs with known LSLs to initiate proactive LSLR efforts, ahead of any regulatory requirements. At the same time, EPA should ensure that the messaging from the Agency about these replacements does not imply that nationwide LSLR will completely eliminate the risk of lead in drinking water. Premise plumbing, including legacy lead pipes, lead solder, and brass fixtures will continue to remain a potential source of lead in drinking water and the importance of effective corrosion control should continue to be emphasized. Clear messaging requirements should include information for homeowners that if they have concerns about lead hazards within their home, they should contact a local licensed plumber or environmental hazards assessment professional for an assessment.

In the LCRI, EPA should establish a standardized requirement for proactive LSLR, with increased requirements for PWS that exceed the lead action level (AL). States recommend that EPA eliminate the component of the LCRR in which states are required to negotiate with each PWS a goal percent replacement rate in the event of a trigger level (TL) exceedance (noting that ASDWA is also recommending EPA eliminate the TL as detailed below), as this back-and-forth negotiation adds additional burden to the already strained state workforce. Instead, one state suggested that EPA could establish a required replacement percentage that is based off the ratio of LSLs to total number of service lines in a PWS in order to promote faster and more equitable replacement efforts (i.e., require a faster replacement rate at PWSs with a smaller ratio of LSLs to ensure they are not deferring replacement to later years within the overall program. Systems with larger percentages of LSLs will alternatively need more time to replace a larger proportion of their overall lines.) Other states have suggested that EPA could simply determine one replacement percent for all systems with LSLs, and a higher replacement percent for systems who exceed the lead AL. EPA should include within the regulation flexibility for states to approve an alternative, more stringent, replacement rate, as needed. Several states have required proactive replacement rates, including Michigan (requiring a 5% replacement rate over 20 years) and New Jersey (requiring a 10% replacement rate over 10 years.) However, it should be recognized that

for many PWSs full LSLR is a complicated construction endeavor that requires homeowner cooperation and consideration of ancillary items such as road and traffic disturbances. Achieving full LSLR in less than 10 years may not be feasible for many systems that have a large number of LSLs.

EPA should be cognizant that states and water systems will face numerous challenges as they work to achieve the goal of 100% LSLR nationwide. Numerous states and municipalities have prohibitions on spending public funds on private property, which will at least complicate, and/or may limit the opportunity to conduct full-LSLR, or fund private-side replacement. Removing this problematic statutory or regulatory prohibition is not an uncomplicated process, as repeal would typically require state-level or local legislation. EPA's influence with state legislatures is limited, and states expect these types of statutory requirements to affect PWSs ability to conduct private side replacements in some cases. Flexibility should be included within the regulation and acknowledgement of these types of state and local limitations should be a consideration in establishing LSLR requirements.

Additionally, with the ongoing global supply chain issues and workforce shortages, EPA should consider incorporating good-faith-effort flexibility into LSLR provisions. This flexibility could be similar to the allowance in the Revised Total Coliform Rule for a PWS to request a deadline extension after consultation with the state. Systems are experiencing significant costs increases on supplies, as well as longer lead times for construction materials. For example, one water system has seen a cost increase of 55% for smaller pipe and 128% for larger pipe from May 2021 to April 2022. The same system has seen a 181% increase in gasoline prices from February 2020 to October 2022 and is starting to see diesel shortages from its fuel supplier¹. Additionally, EPA should consider the cost implications of the materials under the Build America Buy America Act when funds from the Drinking Water SRF is used to support LSL activities. ASDWA would like to continue to work with EPA on developing potential solutions or rule language to address and overcome these issues. Ultimately, collaboration on the federal, state, and local level will be needed to ensure prompt, equitable, LSLR nationwide.

Identification of where LSLs are located is vitally important to the effort of complete LSLR, and some states are concerned that the LCRR's LSL Inventory requirements do not include requirements or metrics for achieving measurable improvement in the inventories over time. In the LCRI, states encourage EPA to consider including inventory improvement requirements for PWS with unknowns and identify minimum actions PWSs should be taking to identify those unknowns over time. At the same time, states request some flexibility for systems who do not have any indication that they have LSLs, but who do not currently have the records to prove it. In the numerous cases where a PWS can demonstrate there are no *known* LSLs in their system, and can assume with some confidence that they do not expect to encounter LSLs, yet has unknowns due to insufficient records, EPA should consider providing the states with flexibility in working

¹ Newsweek, November 14, 2022, Diesel Supply Update on U.S. Supply Will "Barely" Make it Through Winter, <https://www.newsweek.com/diesel-supplies-will-barely-make-through-winter-prices-skyrocket-1759229> (accessed November 15, 2022).

with systems to identify the unknowns (i.e., there should not be a requirement to dig up the lines for identification) and to allow simplified LSLR Plans from these types of systems. Additionally, in these scenarios, states should have flexibility to work with PWSs on public education, so the public does not lose confidence in their drinking water when there is no indication of lead in the system from unknowns based on installation dates or other supporting documentation.

In following up on LSLR, EPA needs to clarify some of the LCRR requirements in the LCRI. As soon as possible, EPA needs to clarify if the requirement to submit an LSLR Plan by October 16, 2024, will move forward alongside the initial inventory requirements; otherwise, EPA needs to provide guidance to states as to what components of the LCRR will be required and which will not.

Additionally, requirements for individual LSLR should be clarified as soon as possible as states work to issue the BIL funding for LSLR projects. EPA should clarify what type of follow-up sample needs to be collected following the replacement, a 1st or 5th L sample, how many samples must be collected, at what frequency, and for how long.

EPA also needs to further clarify pitcher filter requirements. States recommend EPA reevaluate the necessity of the filter requirements after a **full** LSL replacement and flushing of the new line, considering the lead line has been fully removed. Partial replacements may still be utilized in limited circumstances, in which case filters could help reduce risk. In this case, EPA should clarify in the LCRI that the filters must have independent third-party certification for lead removal and EPA should work with the third-party certifiers to ensure certification procedures are updated to reflect any potential modifications made to the AL in the LCRI. EPA should also clarify for systems how to identify if a filter will last the required 6 months, or if a certain number of replacement filter cartridges will need to be provided. One state recommended that EPA include a provision in the rule indicating who is responsible for ensuring that the filter is replaced and properly maintained. Additionally, EPA needs to clarify expectations for states to track compliance with the filter provision and if anything needs to be reported to EPA regarding compliance with the requirement. Data management requirements and the tracking of all the compliance and notification requirements is an issue that needs additional focus from EPA in the LCRI.

Trigger Level and Action Level

The addition of the trigger level (TL) provision within the LCRR added significant complexity to the rule, adding provisions for PWS planning and preparation for a possible Action Level Exceedance (ALE), rather than actions that directly protect public health. ASDWA members recommend that EPA eliminate the TL provision in proposing and finalizing the LCRI. In developing the TL, EPA adapted ASDWA's "bin" approach from our March 2018 comments for the Federalism Consultation for the Long-Term Revisions to the LCR. This adaptation that resulted in the TL provision in the LCRI has added significant complexity to an already complicated rule.

The Maximum Contaminant Level Goal (MCLG) for lead was established at 0 parts per billion (ppb) in the 1991 LCR to emphasize that there is no safe level of lead in drinking water. In developing the LCR treatment technique (TT) for compliance, the AL was established based on

economic and technical feasibility and is used in the regulation to evaluate and inform corrosion control. Therefore, EPA should ensure feasibility and the economic costs for additional corrosion control treatment (CCT) are considered when evaluating any revisions to the AL. Numerous ASDWA members have suggested EPA could lower the lead AL to 10 ppb and eliminate the lead trigger level provisions; these states indicated that they did not recommend an AL lower than 10 ppb. Other members have expressed that they do not support EPA simply lowering the AL without thorough consideration of technical and economic feasibility. One state indicated that EPA should also consider lowering the current practical quantification level (PQL) for lead, currently set at 5 ppb. EPA should carefully consider all potential regulatory options and outcomes, with the associated costs and benefits, when making its decision on the AL.

Should EPA make the determination to lower the lead AL, EPA needs to be cognizant of the secondary impacts on regulatory compliance and public perception, especially factoring in the revised tiering and monitoring scheme already put in place by the LCRR. All these provisions in the LCRR will trigger more lead ALEs across the board, and that has both positive and negative results. Both the positives and negatives should be appropriately considered in the regulatory development process. As more systems exceed the lead AL due to these more stringent monitoring requirements, there will likely be continued erosion of public confidence in tap water. EPA should anticipate this potential reaction from the public and proactively work with states and water systems on messaging to ensure that the public trust in drinking water is not further eroded. Specifically, although there is no safe level of lead, EPA needs to help the public understand that the 90th percentile lead results reported under the rule are not representative of the entire community's exposure to lead in drinking water, and that the lower the lead levels, the lower the risk.

Additionally, more ALEs will result in more systems implementing corrosion control treatment (CCT) requirements. The CCT requirements promulgated in the LCRR are very concerning for many states, especially for states already dealing with phosphorous loading issues in their rivers and reservoirs. States request further engagements with EPA on streamlining and revising the LCRR's CCT requirements, with a focus on simultaneous compliance, flexibility, and the latest corrosion research.

Compliance Monitoring and Regulatory Startup

With the compliance deadlines in the LCRR, systems will submit their LSL inventories, LSLR plans, and begin sampling at updated sampling sites at the start of the effective date of the rule—this presents a challenge for state agencies to simultaneously review and approve all the submittals. A timely review of all the submittals is simple not feasible. Some back-and-forth with some of the systems should be expected, which adds to the burden on the states. States recommend that EPA incorporate staggered deadlines for rule provisions throughout the rule, as well as consider grandparenting in systems on triennial monitoring at the states discretion. Systems should be using their LSL inventories to develop and revise their existing sampling plans and states will need time, ahead of the compliance monitoring period, to review and approve these plans. Getting the updated compliance sampling plans correct is a critical component of this regulation.

Additionally, if all systems are reset to 6-month monitoring, there may not be enough laboratory capacity (note that several states use their own laboratory for lead and copper analyses) or state bandwidth to handle the surge in monitoring, alongside implementation of the revised LCRI requirements. States recommend that EPA consider incorporating additional time for states and systems to implement the new regulations, rather than restarting all PWS at the same time to 6-month monitoring. Additionally, the LCRI should include a provision allowing a PWS with no LSLs, GRRs, and unknowns, as demonstrated by their inventory to continue routine monitoring with their existing monitoring schedule. This provision will encourage numerous water systems to finish their inventory in order to continue on reduced sampling without restarting on standard 6-month monitoring.

Tap Sampling Protocol

Since the 1991 LCR was promulgated, states, water systems, and resident samplers have had issues with the first draw sampling protocol. The sampling protocol is problematic, both for evaluating health-based impacts, as well as for evaluating corrosion. The protocol is neither representative of daily or cumulative consumer exposure, does not represent the highest potential lead levels at a site with an LSL, nor does it effectively provide sufficient information to inform CCT decisions. States support EPA's efforts to identify a more effective sampling protocol; however, in determining a sampling protocol under LCRI, ASDWA requests EPA fully consider challenges with the existing protocols and the full scope of the effects of the sampling methods on regulatory requirements.

The LCRR does not appropriately recognize many of the challenges with the tap sampling protocol. Since the inception of the rule, systems of all sizes have had significant challenges identifying homeowners willing to participate in lead and copper sampling; even financial incentives are not enough to get people to participate, for those systems that can afford to offer such incentives. One state indicated that systems have been reporting an increase in the number of customers who no longer want to participate due to COVID concerns. While the protocol itself may seem straightforward to those in the water industry, states and systems regularly encounter residents who fail to comply with the protocol. While the addition of the 5th liter (L) sample at homes with LSLs will likely represent the water in that service line, the sampling protocol for sample site locations with LSLs adds additional complexity to the process and is expected to exacerbate the existing issues, as well as further disincentivize resident samplers. The follow-up requirements under find and fix are also expected to disincentivize homeowners to participate in sampling, simply due to the additional inconvenience. As LSLs are actively replaced, systems will have to continue to actively work to recruit new samplers, adding an additional layer of work for systems and states having to constantly update and maintain sample site plans. Unfortunately, many systems have no alternative to resident-sampling due to the required stagnation time, which makes it difficult to arrange sample collection by a professional at a time when the tap has not been used.

The goal of the sampling protocol is not to find the highest possible lead level in every compliance sampling location, rather, the goal is to get representative lead values across the distribution

system for consideration on whether CCT and other compliance actions are needed (or not). Research from EPA's Office of Research and Development (ORD) found that different sampling protocols may capture different concentrations from lead sources². EPA could use the LCRI as an opportunity to propose random daytime sampling (RDS), and at a minimum, take public comment on an alternative tap sampling protocol³. RDS would eliminate concerns around the sampling/stagnation protocol, would decrease or eliminate issues with consumer participation, and provide a more scientifically sound method to support CCT. ASDWA recommends that the Office of Ground Water and Drinking Water (OGWDW) coordinate with ORD on the feasibility of alternative sampling protocols, and at minimum ask for comments on RDS in the proposed LCRI, as EPA did with 5th L sampling in the LCRR proposal. ASDWA understands that EPA may be concerned that moving in such a direction may be construed as making LCRI less stringent than LCRR, which is not allowable. Obtaining better and more representative data does not inherently mean that requirements are less stringent. Rather, an overall approach based on better data could be developed that would not be less stringent, for example using median or average results instead of 90th percentile as a consideration. Such an approach would improve feasibility and could be designed in a way to improve public health protection while also making the rule more implementable by states and systems.

Should EPA maintain the sampling requirements outlined in the LCRR, states recommend that at Tier 1-3 sample sites (i.e., LSL sites and GRR sites), EPA require both the 1st and the 5th L samples be collected and analyzed, with the highest result included in the 90th percentile calculation, similar to the approach utilized in Michigan's LCR. In 2019 and 2020, 31 systems in MI triggered ALEs when evaluating both samples—11 systems would have triggered an ALE if only the 1st liter was used and 22 if only the 5th L sample was used. Some states have expressed concern with the selection of the 5th L to represent water from the LSL. Sequential sampling data has shown that there is high variability among the different sampling locations as to which liter had the highest level of lead, even at the same PWS, making it difficult to predict which liter in a particular sampling profile will represent the highest lead value.

In developing the LCRI, EPA should consider that most ALEs occur at small PWS. During the reduced monitoring period in 2022, 25 of the 26 systems who had an ALE in Texas were small systems, and this pattern is consistent across the states⁴. These small, often disadvantaged, systems that are only required to collect 5 samples are often triggered into an ALE from a single sample. In some cases, PWSs will alert the state that upon providing the homeowner with elevated lead results via consumer notification, the resident discloses that they did not follow the proper sampling protocol (e.g., the sample was collected from an outside hose bib or from

² Environment International, 2021, Triantafylidou, et al. Variability and sampling of lead (Pb) in Drinking Water: Assessing potential exposure depends on the sampling protocol. <https://www.sciencedirect.com/science/article/pii/S0160412020322145> (accessed November 30, 2022).

³ States recognize that the action level and number of required samples per monitoring period may also need to be adjusted if RDS were to be pursued.

⁴ In Louisiana, since 2010, there have been a total of 131 systems with a lead and/or copper ALE. Out of the 131 systems: 60 systems served 500 or less people, 31 systems served between 501 and 1,000, 30 systems served between 1,001 and 5,000, 8 systems served between 5,001 and 10,000, with only 2 systems serving over 10,000 people.

an infrequently used tap, not typically used for drinking). Determining what to do with this type of information is a significant challenge faced by the states and places a heavy burden on the state workforce. While there are some cases in which states can invalidate samples, the rule currently prevents states from invalidating based on this particular scenario. Minnesota indicated that this issue has come up once per year for the last three years for systems with ALEs. Additionally, Minnesota has been following up on individual sample results above the AL, and of the 43 samples above the AL in which PWSs were able to obtain follow up information from the resident-sampler, 36, or 84%, of the samples had been collected using an improper sampling protocol (i.e., sample was not collected from the most frequently used tap or was collected from an invalid sample site) or with a stagnation time above 12 hours. Similarly, Louisiana initiated a customer questionnaire to follow up on individual samples above the AL. Of the 55 responses received since 2020, 20 samples were collected from infrequently used taps, 9 samples were collected from locations with low water usage (e.g., a vacant or vacation home), and 1 sample was collected from a tap with a filter that had not been maintained. This data clearly indicates the problems that occur with the current sampling method. Important and expensive decisions are made based on these samples results, including the installation of CCT. In developing the LCRI, EPA should strive to help PWSs, and states make these important decisions based on sound data, and not problematic data due to poor sample collection.

States recommend that if EPA continues to allow residents to collect compliance samples, that EPA work with states to add flexibility to the sample invalidation provisions, especially considering all samples over the lead AL will require a follow up investigation through the find and fix provisions. Invalidation could even be contingent on the findings from the find and fix provision. At a minimum, in the proposed LCRI, EPA should consider adding a stagnation maximum of 12 hours to the sampling protocol and require sampling only from kitchen taps (where available) to address some of the ongoing issues with the tap sampling protocol. One state indicated that EPA should incorporate stronger chain of custody requirements into the LCRI, including certification of stagnation time and proper use of the sample procedure by the sampler. Because of the human health implications of sampling and triggering an ALE, and the importance of ensuring treatment is not installed where it is not needed, it is vital that all samples used in a system's 90th percentile calculation be collected with strict adherence to the proper sampling protocol. States recommend that EPA revise the language in the rule to be clear that any samples not collected under the protocol cannot be included in the 90th percentile calculation.

ASDWA recognizes the long history and variety of opinions associated with how to best address the issues surrounding poor sampling techniques by homeowners including wrong sample locations and excessive stagnation periods. The same can be said for sample invalidation as well. Nevertheless, EPA should not ignore the fact that high lead results often come from bad sampling locations or techniques. EPA should consider alternatives to gain better data. One alternative could be instead of invalidating samples, investing in efforts to validate the lead concern via additional sampling or with the find and fix provision. These could be among the actions that occur after an ALE that would help avoid unnecessary CCT, without fully invalidating results. Small systems often do not have the capacity to handle the complex CCT requirements that are required following an ALE. Currently, states are constrained by rule to require a PWS with a single

elevated sample to install CCT, regardless of if the sample was collected incorrectly and without additional investigation—this is an issue that needs to be resolved in the LCRI. As work progresses further on LCRI development, EPA should continue working with states to develop an appropriately stringent method addressing these obvious issues. ASDWA believes that options along these lines could be incorporated into LCRI without making it less stringent than the LCRR.

Find and Fix

States recommend that EPA revise the term “find and fix,” as it implies the PWS will be responsible for fixing the cause of elevated lead levels found at a single sample location. States recommend renaming the provision to “educate and assess” or a similar name. The current name of “find and fix” implies some responsibility by the PWS to fix an internal plumbing issue, with lead leaching from premise plumbing or fixtures. While the PWS may follow-up and investigate the sample, the source of the elevated lead levels may be attributed to premise plumbing or fixtures. In this case, the PWS should be required to provide additional education for the homeowner but should not be required to take on the responsibility of replacing the customer’s plumbing or fixtures, as the current name of the provision implies. The additional education information should be focused more on internal plumbing than the current consumer notice materials, but still include information on common sources of lead and ways homeowners can lower their lead exposure.

States recommend that EPA revise the overall approach for find and fix. The LCRR indicates systems should potentially reevaluate corrosion control based on an individual sample—states do not think this should be the case. Treatment changes should never be based on a single sample, especially for complicated CCT and the potential for unintended consequences. Water systems should be required to consult with the state before making major adjustments to CCT and systems should not be making adjustments off of one elevated lead sample. Instead, systems should conduct more evaluation of WQPs and evaluate CCT throughout the entire distribution system. States recommend that any sampling completed under this requirement be investigative and the rule should specify that states can make decisions based off these results, similar to the flexibilities offered when a system makes a source or treatment change. Such decisions could include requiring additional WQP monitoring, increased lead and copper tap monitoring, or to determine if CCT changes or adjustments are necessary.

In conclusion, states recommend that EPA consider a more holistic approach to find and fix. This could be similar to the Operational Evaluation Level (OEL) Report in the Stage 2 Disinfection Byproduct Rule, where results are evaluated on a system level for all samples above the AL instead of at each site when reporting conclusions and actions to the state. Better public health protection could be attained by making the report publicly available for review, similar to the OEL. This approach would also reduce the burden for states and systems of tracking and reporting PWS follow-up at each site separately.

Corrosion Control Treatment Requirements

States recommend that EPA consider revising the CCT portion of the LCRI and are willing to work with EPA OGWDW and ORD on streamlining these portions of the rule. The CCT requirements in the LCRR are overly prescriptive, do not consider the impacts of phosphorous wastewater loading or simultaneous compliance, and drastically oversimplify corrosion chemistry. Additionally, the overall process for proposing, piloting, installing, and optimizing CCT needs to be carefully re-evaluated to reduce the time to install CCT, while ensuring there is sufficient time for completing water chemistry evaluations and CCT studies, bidding, construction, implementation, and review by the primacy agency. These changes can be made without making the rule requirements less stringent; rather, public health protection can be improved.

The regulatory language in this component of the LCRR is often redundant and needs significant revision. Updating and streamlining this language should be a top priority for the proposed LCRI. There are numerous citation errors in Section 141.81, which makes it difficult to interpret the rule. Combining Sections 141.81 and 141.82 and reducing the number of cross references between the sections is one approach, another could be to simply streamline the language. Any improvement would help with feasibility. In the LCRR, it is unclear when large systems with LSLs need to do a pipe loop study, with the preamble to the rule providing most of the clarification for states. Another example is the reference regarding when large systems without optimal CCT exceed the lead PQL or copper AL—the LCRR points them to Section 141.81(e)(3), which does not pertain to this situation and would allow the PWS 30 months to complete a CCT study. The numerous errors in Sections 141.81 and 141.82 make it difficult for states to interpret the rules without correcting citation errors and making assumptions—these problems must be resolved in the LCRI.

When a small or medium PWS experiences an ALE, they must first evaluate their basic water chemistry (pH, alkalinity, etc.) by collecting WQPs, before evaluating CCT. Many states argue that this information is highly valuable, not only for the LCR, but also for evaluating simultaneous compliance with other National Primary Drinking Water Regulations (NPDWR), ensuring a healthy distribution system, and for detecting unintended consequences of source or treatment changes. Some states recommend that EPA incorporate into the LCRI a requirement for regular (quarterly), baseline pH and alkalinity monitoring for all PWS that apply any type of treatment, regardless of their 90th percentile lead and copper values; on the other hand, some states recommend regular WQP monitoring, but only for those systems with CCT installed or only those required by **rule** to install CCT. Numerous states recommend eliminating the reduced WQP monitoring option for PWSs with optimal CCT, as this infrequent monitoring schedule does not provide sufficient information on the effectiveness of optimal CCT. Several states recommended that all systems with optimal CCT should be monitoring WQP on a quarterly basis in the distribution system to detect seasonal variations and to assist with the treatment operation and maintenance for effective corrosion control.

The LCRR requirement to complete a pipe-loop study following an ALE will not work and is problematic for several reasons. The collective knowledge and the capacity in the consulting

engineering community to start up hundreds of pipe loop studies does not exist and cannot be developed in a short period of time. Pipe loop studies take a long period of time to plan, implement, and evaluate results. Often the treatment recommendation that would come out of these pipe loop studies could be reached sooner through other theoretical or bench-scale methods. There are numerous challenges with harvesting pipes, maintaining scale, reaching stabilization, and even more challenges with large groundwater systems that draw from multiple sources. Additionally, pipe loop studies can be very costly for a system to design and implement, as well as time and labor intensive for states to review and approve. States recommend EPA eliminate the requirement from the rule and leave flexibility for a state to require a pipe loop study where it makes sense. One state has specific experience with a system where pipe loop and immersion studies generated similar result outcomes. States want to ensure the priority is on installing the most effective treatment to protect the public from elevated lead levels and the requirement to complete a pipe loop study will in most cases unnecessarily delay the installation of treatment with little added benefit.

States also need additional clarity on the re-evaluation of CCT when CCT has already been installed but the system experiences an ALE. In some instances, this re-evaluation may be based on a single sample, which brings up the challenges discussed previously. Many states do not have staff with nuanced enough corrosion control knowledge to confidently determine if a PWS's existing CCT requires changes or adjustments if the PWS experiences an ALE. To ensure consistency across the states, EPA should issue guidance on the re-evaluation of existing CCT.

In conclusion, states would like to work with EPA to completely re-evaluate and streamline the CCT portions of the rule to ensure flexibility in implementing the requirements to ensure treatment is implemented in a protective, holistic, and responsible manner. When the Stage 2 Disinfection Byproduct Rule (DBPR) was promulgated, states and systems experienced numerous devastating secondary impacts on lead release from systems attempting to mitigate their DBPs by switching to chloramines; states want to ensure that the requirement to “minimize” lead and copper at the tap does not similarly come at a detriment to other regulated and emerging contaminants. Additionally, states want to ensure the CCT requirements are technologically feasible for systems—for example, the LCRR does not address the challenge faced by consecutive systems required to address corrosion without having access to a physical treatment plant. In practical terms, the entire physical system needs to be considered as a whole, rather than segmented according to ownership boundaries. All these issues should be addressed for the LCRI to improve upon the existing LCRR with more effective CCT requirements.

Copper

States concerns with the regulatory framework for copper were not appropriately addressed in the LCRR and states were disappointed that EPA did not take actions to address the nuances associated with copper corrosion in the LCRR. ASDWA recommends that EPA ensure the LCRI appropriately address copper concerns. Systems may have ongoing copper exceedances, or current loopholes may allow systems with a copper ALE to avoid installation of CCT. States recommend that EPA include more targeted guidance for addressing copper and acknowledge

that the methods for reducing lead in drinking water do not necessarily translate to reducing copper. States also strongly recommend that EPA require lead and copper sampling be conducted at the same frequency to reduce the rule's complexity and eliminate the provision within the LCRR that allowed a system to reduce their copper schedule but not their lead schedule. Allowing separate schedules for lead and copper increases the burden for state and water system staff to track the different schedules.

States also recommend that EPA update educational materials around copper, as states have seen that there is limited understanding around health risks from chronic exposure or what level of copper in drinking water would be considered an acute risk—there are over-the-counter multivitamins with copper levels over the equivalent exposure as drinking water above the AL, demonstrating that the public is receiving inconsistent or no messaging at all around copper. Some states recommend that copper values be included in the consumer notice requirements, along with information on the sources of copper in plumbing and how to reduce copper exposure. Public education requirements could also be expanded to be required following a copper ALE, rather than for lead exceedances only.

Small System Flexibility

ASDWA's members appreciate EPA's efforts to streamline the requirements for small systems following an ALE; however, states still have ongoing concerns regarding some of the small system flexibility options in the LCRR. Because the small system flexibilities rule seems to offer a loophole to get out of the CCT requirements, one state indicated that the flexibilities be incorporated into the CCT portion of the rule language—this would also streamline the overall rule language. States outlined several additional concerns with the LCRR's small system flexibilities outlined below.

States recommend that EPA further evaluate how often small systems exceed the AL, and for what reason, before creating flexibilities. An education campaign and water quality management program, such as regular distribution system flushing protocols and management of other system issues (e.g., nitrification), may be a better option than installing CCT for many of these systems. Specifically, NTNC systems are often considered last, if at all, in rule protocols—yet in the LCR, NTNCs make up a significant portion of those PWSs that exceed the AL. Appropriate considerations for these systems should be called out specifically in rule. CCT may not be effective due to low water usage in these facilities; options to install automatic flushers or to initiate regular flushing protocols could be an option to evaluate before installing CCT at a system already struggling with capacity issues.

Some states suggest EPA limit those allowed to pursue the small system flexibilities to systems with populations less than 3,300, to align with the LCR's definition of small system. Some states suggest eliminating the LSLR flexibility and make the requirement to replace LSLs compulsory, regardless of a PWS's 90th percentile, as discussed previously. On the other hand, one state indicated that if a PWS already has optimal CCT in place, there is no need to require the system

to conduct LSLR, as this would create even more nationwide need for the limited funds available for LSLR.

States have efficacy concerns regarding the use of point-of-use filters as a compliance option and recommend that, should EPA continue to allow this option under LCRI, EPA limit the use of filters to PWSs that have complete control over the entire distribution system and plumbing, such as NTNC systems and some very small community systems (e.g., nursing homes or correctional facilities.) Providing filters in a small town or municipal setting indefinitely is concerning for many states, due to logistics, the maintenance required, and potential biofilm risks. Some states have suggested EPA limit the size threshold for the filter option to PWS with less than 50 connections or less than 100 connections, other states have indicated the filter option be limited to systems with less than 500 or 1,000 people. One state suggested that systems should have to enter into an agreement with the state to use these flexibilities to ensure compliance. States also recommended that EPA include a provision in the LCRI giving states the flexibility to **not** allow the use point of use filters as a compliance option for the LCRR.

Additionally, ASDWA recommends that EPA review the independent third-party certification level for filters to ensure that the procedure in place is achieving the lowest possible lead levels to reduce lead exposure risk from using the filter. The lead removal filter challenge test procedures from NSF certifies a filter to meet lead removal if it removes lead down to 10 ppb or lower from a maximum lead level of 150 ppb. A third-party certification of lead removal filter that removes lead down to 10 ppb is not acceptable as the filter needs to achieve the lowest possible lead levels.

Beyond the small system flexibility, requiring filter distribution or the distribution of bottled water should not be required for an ALE at a water system. The distribution logistics and tracking of the distribution for every customer in a water system, will be problematic for a system of any size. A system-wide distribution of either filters or bottled water is simply not feasible.

States recommend that EPA note the numerous capacity challenges for small systems, which would be compounded by operating and maintaining CCT following an ALE. States recommend that EPA add consolidation/regionalization as a flexibility option. One state provided an example of a PWS with an ALE that interconnected with another PWS with CCT in place to address the ALE. WQPs and a CCT evaluation was required ahead of the interconnection to ensure there would not be a negative impact on corrosion and lead and copper sampling in the area that was consolidated was required for at least two monitoring periods to ensure the effectiveness of the CCT. This option, as well as the option to completely replace a systems internal plumbing, should be available to those systems that exceed the copper AL⁵, as well as the lead AL, as states have seen success with both of these options in addressing both lead and copper ALEs.

⁵ Because corrosion problems persist more in new copper plumbing than in legacy copper plumbing, states recommend that the rule include the requirement to install non-copper plumbing under this provision.

School and Childcare Sampling

The school and childcare provision of the LCRR presents numerous challenges for states and water systems. Systems do not necessarily have easy access to lists of these types of facilities in their service area, and state drinking water programs have no way to verify if systems complied with the associated requirements for the same reason. Additionally, it is not clear if systems that are themselves schools or daycares must comply with these requirements. Some state and local governments already have lead sampling programs for daycares and/or schools; EPA should provide additional information on getting a waiver for systems in cases where this sampling is already being completed by another program. If sampling is already being conducted, it's likely that most of these testing programs utilize the sampling protocol in EPA's 3Ts guidance document.

In the LCRR, EPA introduced a special sampling method for the school and daycare sampling provisions, separate from the 1st draw sampling method, and this sampling protocol is also different from EPA's own 3Ts sampling protocol typically used for these types of facilities. States recommend aligning the school sampling requirements with the 3Ts protocol, either by updating 3Ts or by adding the 3Ts protocol to the LCRI, to ensure the same protocol is being used and to ensure interpretation of lead results can be easily understood across the different programs.

Another concern is that under the LCRR, the water system must provide analytical results to the school or childcare facility along with information about remediation options. Expecting a PWS to provide remediation recommendations off a single 250 mL sample result per fixture is troubling as the source of lead in the sample would not necessarily be known by the system. Additionally, the LCRR requires that annual public education be provided by the PWS to these facilities. Having each individual PWS responsible for providing remediation recommendations and public education creates the potential for inconsistent messaging. States recommend that EPA develop a remediation guide that includes standardized public education and require that this guide be provided by systems to these facilities, along with their results.

As currently written, the LCRR requirements do not provide any recourse for school or daycare facilities that do not participate in the sampling program, and for those that do participate, there are no remediation requirements for those that find elevated lead levels. This will lay the entire burden on the PWS to identify each facility, convince the facility to conduct testing, and take the samples. When there are elevated levels found, the PWS will likely be blamed for finding the elevated levels and asked to bear the cost for remediation, as they are the only entity being held accountable by the state and federal government. EPA needs to prioritize the whole-of-government approach to addressing lead in drinking water and obtain cabinet level commitments to incorporate lead sampling requirements into the licensure requirements for schools and daycare facilities.

Communication Materials

Communication efforts around lead in drinking water can be very challenging for states and systems, and this is an area where EPA should provide substantial support. EPA should issue communication material templates in multiple languages for use by primacy agencies and systems; additionally, EPA should ensure all communication is simplified to be easily understood by the public. In the LCRI, EPA should work to address communication challenges currently experienced under the LCR to reach residents at rental properties.

EPA also needs to be cognizant of its messaging to the public around LSLR. It is important that the public understands that even if LSLs are removed nationwide, it will not completely eliminate the risk of lead in drinking water, and that there will likely still be detections during sampling. The identification and removal of any drinking water components that leaches lead is a noble societal goal but goes beyond LSLR and into the potential leaching of lead from plumbing. Additionally, EPA also needs to be proactive in communicating that there will likely be more lead ALEs with the changes to the sampling and tiering requirements.

Water users also need explicit guidance on risk from lead when levels may be detectable but below the AL. While EPA does not intend for the AL to be used as a household action value, it is what many people continue to use to say water is “safe.” EPA has a responsibility to provide homeowners with clear guidance on the safety of their tap water. Many homeowners cannot afford or do not have the expertise to identify when it’s appropriate to flush versus using a filter versus using bottled water versus drinking their tap water. Even doing a profile of the home plumbing is only a snapshot in time. Clear, consistent, communication regarding sample results and actions individual homeowners should take are a critical aspect of this regulation that should be updated and streamlined as a part of LCRI. Again, although there is no safe level of lead, EPA needs to help the public understand the often low risk level that is associated with low lead levels.

In order for communication materials to be effective and streamlined, states encourage EPA to establish clearer expectations and resources for use by states and systems. Clearer expectations will help to drive the content for these communications and EPA-approved resources and templates will help states to approve these materials more efficiently when utilized by water systems. The American Water Works Association has developed a dynamic Lead Communications Toolkit⁶ with a variety of templates and examples for water systems to utilize for communicating with the public about lead in drinking water. EPA should review this toolkit and use it as a model for any additional communication materials that might be developed as a part of the LCRI.

⁶ American Water Works Association. Lead Communications Toolkit. <https://www.awwa.org/Resources-Tools/Resource-Topics/Contaminants-of-Concern/Lead/Lead-Communications>, (accessed December 9, 2022).

Additional Comments and Recommendations

EPA is responsible for providing guidance to states and water systems on implementing the SDWA. States have been disappointed by the lack of guidance relevant to implementation of the LCRR – the only EPA guidance has been for LSL inventories. ASDWA recommends that EPA prioritize training and guidance ahead of the LCRI implementation date, comparable to what was developed for the arsenic regulation and for the Stage 1 and Stage 2 DBPRs. Training and guidance should address areas of the existing rules in which EPA and states have seen inconsistencies in implementation as well as new areas of the rule. Additionally, states request EPA develop implementation guidance relevant to Section 142 primacy requirements for state implementation of the NPDWRs, as EPA has failed to provide this guidance for the LCRR. ASDWA's members are willing to provide feedback as to what training will be needed for both the LCRR and LCRI but ask that EPA invest time and resources into ensuring this training is developed and addresses the needs of the states and systems.

All states anticipate numerous challenges with implementation of the LCRR as written, and request that EPA work with states to alleviate some of these burdens, particularly data management burdens, in promulgating the LCRI. The LCRR added additional reporting requirements, many of which cannot be captured in SDWIS, including inventories, reporting for the 1st and 5th L, find and fix, school sampling and numerous other requirements. Keeping track of individual small system flexibility approaches will also be extremely challenging and resource intensive. Adding additional requirements without the necessary support for data management will result in even more of a strain on the state workforce. To date, EPA has provided minimal data management tools and resources for these efforts. EPA needs to acknowledge their role and work to accelerate SDWIS modernization efforts, and work to streamline state-system touch points in the LCRI. Efforts to modernize the data management system on which so many states rely should be paced in accordance with and prioritized alongside of the LCRI efforts.

States recommend that EPA re-double coordination efforts with other federal partners wherever possible to prioritize public health protection from lead. States recommend that lead service lines be disclosed as a part of a home or property sale, similar to the lead paint disclosure. Schools and daycares should be required to sample for lead as a part of their licensure requirements. Service line material should be investigated and reported to the local water utility for inventory purposes as a part of blood lead level investigations. Some municipalities have even had success designating LSLs a public health nuisance, requiring their removal. These are just some of the areas in which a whole of government approach could be used to protect everyday Americans from lead in drinking water.