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Kansas Department of Health & Environment

to the

Subcommittee on Environment and Climate Change of the

House Committee on Energy & Commerce

EPA's Lead and Copper Rule Proposal:

Failing to Protect Public Health

Tuesday, February 11, 2020

Executive Summary

The members of the Association of State Drinking Water Administrators (ASDWA) have been implementing the current Lead and Copper Rule (LCR) since it was originally published in 1991, as well as the minor revisions in 2000, 2004, and the short-term revisions in 2007. ASDWA's members have recently gained additional regulatory experience in the aftermath of Flint's lead crisis by taking actions such as reviewing distribution system materials evaluations, lead service line (LSL) inventories (where available), corrosion control treatment (CCT) and water quality parameter (WQP) monitoring that goes beyond the regulatory requirements of the 1991 LCR. As such, ASDWA's members have a breadth and depth of knowledge on the details of LCR implementation that should be thoughtfully considered for the final LCRR.

ASDWA's state, territorial, and tribal members (hereinafter "states"), have considerable experience working through the many complexities of the LCR regulatory language and its implementation. ASDWA offers the following comments from the perspective of the state Safe Drinking Water Act (SDWA) administrators from across the nation that regulate public water systems, implement the current LCR, and will implement the final LCRR. It should be noted, however, that this testimony does not necessarily represent the specific comments and concerns of individual states. This testimony mirrors ASDWA's comments on the proposed LCRR – ASDWA's comments are enclosed at the end of this testimony.

ASDWA would like to highlight four main themes in this testimony:

1. **Get the Lead Out:** Getting the lead out of the distribution system by requiring LSL removal is the long-term solution for certainty in reducing exposure to lead in drinking water. The first step towards removal is a complete inventory of all services lines.

ASDWA supports regulatory requirements for water systems to develop an LSL inventory (both public and private sides) in its service area or demonstrate "absence of LSLs". ASDWA recognizes that the knowledge of service line materials will increase over time, and the final LCRR should incorporate this evolution. ASDWA recommends that any system with LSLs develop LSL replacement (LSLR) plans. ASDWA recommends that EPA clarify its LSL definition for galvanized service lines, goosenecks and pigtails, and to include unknown service lines as LSLs. Additionally, ASDWA recommends strengthening the LSLR regulatory requirements to replace a minimum of 10% over a 3 year period for any utility with LSLs and replace a minimum of 20% over 3 years for utilities with a 90th percentile greater than the lead action level (AL) of 15 µg/L.

2. **Continue to Reduce Exposure from Lead in Drinking Water:** To reduce lead exposure during service line replacement, ASDWA recommends Tier 1 sampling sites at locations with LSLs, appropriate corrosion control treatment (CCT), and water quality parameter monitoring to ensure appropriate water quality is maintained, particularly when water sources or treatment processes are changed. ASDWA recommends that additional CCT testing options be included in the final LCRR. ASDWA recommends that sample site assessments (proposed as "Find-and-Fix") be included in the final LCRR to ensure that CCT is consistent throughout the distribution system. ASDWA recommends that utilities have an "upon request," rather than a mandatory lead testing program for schools and child care facilities.

3. **Work to Increase Transparency and Public Education and Clarify Public Notification:** Public education and communication are key to successful LCRR implementation. Public access to LSL inventories will demonstrate water system transparency and is critical to help utilities establish their role as a trusted source of

information. ASDWA recommends that the public have access to the LSL inventories, as public education will be critical to LSL replacement on both the public and private sides. Tier 1 Public Notification (PN) has historically applied to acute maximum contaminant level (MCL) violations where immediate action is necessary to protect public health. The proposed change in the LCRR for action level exceedances (ALEs) alters the foundation and the logic for Tier 1 PN for acute MCL violations. Tier 1 PN needs to remain for incidents where immediate actions need to be taken by the system and the consumers.

4. **Provide Additional Funding for States, EPA and Water Utilities:** The proposed LCRR significantly increases the complexity of the rule and the burden on staff to implement the rule. The proposed LCRR will also substantially increase the states' data management burden. As proposed, it contains several early implementation activities and new program requirements with significant tracking, reviews, and approvals. Currently, there is not a data system that exists at the state or federal level that can manage the data that is required for full implementation of the LCRR. This lack of a data system needs to be remedied as soon as possible and before the rule is effective.

ASDWA updated its 2018 Costs of States' Transactions Study (CoSTS) based on the proposed LCRR to more accurately reflect the number of state staff hours to implement the proposed LCRR. Based on ASDWA's CoSTS model, the national total for states to implement the LCRR in its first five years is approximately 831,000 additional staff hours annually, over and above the ongoing implementation of the current LCR. The additional staff hours are a factor of 12 greater than the annual hours for ongoing LCR implementation.

ASDWA's comments provide several specific recommendations such as having LSL inventories submitted with the same interval as monitoring periods and the lead testing in school and child care facilities to be "upon request." These recommendations reduce the annual burden to states by approximately 12%. Even with ASDWA's recommendations that reduce the annual burden to the states to 722,000 staff hours, this is a significant increase to implement a single rule, in addition to all the other SDWA implementation activities.

The potential fiscal impacts to states drinking water programs can be shown by comparing the estimated staff hours from above to the current levels of Federal funding from the Public Water Supply Supervision (PWSS) program. Using the national average loaded hourly rate for state employees of $58.67 (salary plus benefits and overhead), full implementation of the proposed LCRR would cost the states $50 million annually, and $43 million annually based on ASDWA's recommendations. States have struggled over the past decade with meeting both regulatory and non-regulatory requirements such per- and polyfluoroalkyl substances (PFAS) due to flat PWSS funding for the past ten years at $101.9 million. While the FY20 increase of 4.2% to PWSS funding (to $106.25 million) was a small step to closing the funding gap (and ASDWA thanks Congress for this increase), the proposed LCRR would take 47% the total PWSS funding to fully implement – for a single rule. Without additional PWSS funding, states will have to make tough decisions about how to prioritize support to existing programs to accomplish what's required in the final LCRR. To meet the additional resource needs from the LCRR, ASDWA recommends that Congress increase the appropriations for PWSS funding to a minimum of $150 million annually, noting that the current authorization level is $125 million annually.

Testimony

Good Morning Subcommittee Chairman Tonko, Ranking Member Shimkus, and Members of the Subcommittee. Thank you for this opportunity to address the Committee and discuss how we can best address public health protection issues associated with lead in drinking water.

My name is Cathy Tucker-Vogel and I am the President Elect of the Association of State Drinking Water Administrators (ASDWA), whose 57 members include the 50 state drinking water programs, five territorial programs, the District of Columbia and the Navajo Nation. Our members have primary oversight responsibility, or primacy, for implementing the Federal Safe Drinking Water Act (SDWA). Our members and their staff are on the front lines every day, providing technical assistance, support, and oversight of drinking water systems, which is critical to ensuring safe drinking water and protecting public health. I am also the Chief of the Public Water Supply Section within the Kansas Department of Health and Environment.

Today, I will discuss ASDWA's perspective on EPA's proposed Lead and Copper Rule Revisions (LCRR) and how ASDWA's proposed recommendations aim to strengthen the rule to more effectively address lead in drinking water and protect public health. This testimony mirrors ASDWA's comments on the proposed LCRR, and ASDWA's comments are enclosed with this testimony to provide further details on our recommendations. I would also like to note that my testimony today reflects the recommendations of ASDWA and may not portray the position of the Kansas Department of Health and Environment.

Background

ASDWA's members have been implementing the current Lead and Copper Rule (LCR) since it was originally published in 1991, as well as the minor revisions in 2000, 2004, and the short-

term revisions in 2007. 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 final LCRR. ASDWA's members have recently gained additional regulatory experience post-Flint by taking actions such as reviewing materials evaluations and lead service line (LSL) inventories, corrosion control treatment (CCT) and water quality parameter (WQP) monitoring that go beyond the regulatory requirements of the 1991 LCR.

ASDWA's members are co-regulators with EPA for implementation of all National Primary Drinking Water Regulations (NPDWRs), including the LCR. ASDWA looks forward to continuing this critical partnership in the future as the LCRR is implemented. with the continued goal of reducing lead exposure from drinking water. As a partner, ASDWA commends EPA for publishing the LCRR after over a decade of stakeholder involvement. ASDWA would also like to thank EPA for the 30-day extension to the comment period, as the extra 30 days was critical for the appropriate review and approval of these comments by ASDWA's leadership.

The goal for the LCRR is simple – to reduce lead exposure from drinking water and thereby increase public health protection. Considerable progress has been made since the 1991 LCR in reducing the national aggregate 90th percentile as detailed in Figure 1 of the Brown, et al, paper *(Jour. AWWA 105:5:62)*. For approximately 150 of the water systems serving >50,000 people, the median of their 90th percentiles decreased from 20-25 µg/L to 6 µg/L between 1992-93 and 2000. For higher exposures, the 95th percentile decreased from 80 µg/L to 17 µg/L. Notwithstanding the occasional outliers, the considerable progress made in understanding corrosion control and in reducing lead in drinking water should be recognized and the current LCR strengthened to minimize the potential for additional outliers. While everyone can agree on the above goal, the optimal regulatory processes to achieve that goal vary, depending on perspective.

ASDWA's Recommendations on the Proposed LCRR

The proposed LCRR takes several important steps to reduce lead exposure in drinking water by closing some loopholes in the existing LCR and focusing on lead service line (LSL) inventories and replacement programs. However, the proposed LCRR significantly increases the complexity of the rule. For example, corrosion control treatment (CCT) requirements and oversight are much greater, and ASDWA's members grappled with mapping out how the intricate proposed process will be implemented. EPA must work to reduce the complexity of the final LCRR and develop implementation guidance, flowcharts, and decision trees for any complex components. ASDWA hopes to partner with EPA on the development and dissemination of such guidance and looks forward to continuing the dialogue.

ASDWA's comments to EPA on the proposed LCRR are enclosed as part of this testimony and this testimony focuses on four themes:

1. Get the Lead Out;
2. Continue to Reduce Exposure from Lead in Drinking Water;
3. Work to Increase Transparency and Public Education and Clarify Public Notification; and
4. Provide Additional Funding for States, EPA, and Water Systems.

1. Get the Lead Out

<u>Lead Service Line Inventories</u>

ASDWA strongly supports regulatory requirements in the proposed LCRR for water systems to develop an LSL inventory or demonstrate absence of LSLs. ASDWA recognizes that these inventories will evolve over time but developing an inventory that is as accurate as possible over several years is essential to ultimately replacing all LSLs as well as lead goosenecks, pigtails,

and connectors across the country. ASDWA recommends EPA clarify the definition of an LSL and include galvanized service lines, which often serve as a source of lead in drinking water, in the final LCRR.

Lead Service Line Replacements

ASDWA strongly supports regulatory requirements for lead service line replacement (LSLR) programs for water systems, based on the materials found in the distribution system inventory for every service line (both public and private sides). Requiring replacement of LSLs on both the public and private side is a critical part of the long-term solution for reducing exposure to lead in drinking water. ASDWA recommends EPA eliminate the proposed goal-based replacement and instead require all systems with LSLs be required to replace 10% of their LSLs every three years and systems with more than one lead action level exceedance (ALE) be required to replace their LSLs at a rate of 20% every three years. This provision would ensure that for all communities, all known LSLs will be replaced in 30 years and for those communities that exceed the AL more than once all known LSLs will be replaced in 15 years.

2. Continue to Reduce Exposure from Lead in Drinking Water

Trigger Level

ASDWA supports the proposed lead trigger level (TL), which will encourage water systems to act before a lead ALE occurs and to strive towards a lower 90th percentile, ultimately leading to increased public health protection.

Corrosion Control Treatment and Studies

ASDWA recommends that EPA simplify the corrosion control treatment (CCT) requirements in the final LCRR. CCT requirements and oversight are much greater in the proposed LCRR, and

ASDWA's members struggled in mapping out how the proposed process will be implemented. ASDWA supports the proposed approach of expecting systems to evaluate or re-evaluate their corrosion control performance if the TL is exceeded but believes that more guidance from EPA is needed to understand when and if a CCT study is required. More flexibility is needed for the contents and methods of the acceptable studies considering the diversity of water systems and state practices. All study options should remain acceptable and the water systems should be allowed the option to adjust their current treatment for re-optimization instead of embarking an effort to study another type of a treatment. The focus in proposed LCRR for pipe loop/rig studies is not implementable. EPA should work with ASDWA to develop clear, understandable, and implementable requirements. Additionally, EPA should develop guidance or other tools to support state approval of CCT study options.

Sample Site Assessment (proposed as "Find-and-Fix")

ASDWA supports a simplified sample site assessment (proposed as "Find-and-Fix") approach that is focused on rapid steps utilities can take to improve water quality, ensure that water quality parameters (WQPs) are being met, identify LSLs, and educate homeowners. "Find-and-Fix" at a household level, is not practical to implement, to track, or be approved by the states. The proposed approach exposes public drinking water systems and states to significant liability and could result in unintended consequences if utilities attempt to "fix" household issues by changing CCT. Additionally, states should not be responsible for maintaining records of water system actions related to "Find-and-Fix." The proposed approach is very costly and time-consuming, with benefits potentially accruing to a limited number of consumers. **"**Find-and-Fix" terminology should be revised to "Sample Site Assessment" in the final LCRR. A simplified, three-step Sample Site Assessment approach to rapidly identify factors contributing to an individual high lead result is recommended and is detailed in ASDWA's comments.

Change in Source and Treatment

Since source and treatment changes were the main reason for the large-scale “lead crises” in Flint, MI and Washington, DC, states are concerned that the proposed revisions do not address or include more details for when a new CCT study, re-optimization, or additional monitoring will be required following a change in source water or treatment. Additional detail is needed in the final LCRR for water systems to understand the circumstances when they are required to submit written documentation to the state for review and approval for source and treatment changes; what the level of state review and evaluation entails; and appropriate actions following a source or treatment change in complex situations, such as water systems with multiple source waters, regional providers, or consecutive systems. While some states have requirements for studies for any changes, other states cannot have any requirements that are stricter than the Federal regulatory requirements.

Lead Testing in Schools and Child Care Facilities

ASDWA supports the concept of lead testing in schools and child care facilities, however, the LCRR is not the appropriate place for such a regulatory requirement. State educational agencies and child care licensing departments are better equipped to implement lead testing programs because these agencies are in contact with the schools and child care facilities on a more regular basis. These agencies should work closely with the state primacy agencies to ensure all testing meets SDWA requirements. However, if EPA does decide to include a lead testing program in schools and child care facilities in the final LCRR, ASDWA recommends that water systems be required to have an “upon request” program (EPA estimated costs for an “upon request” program as an option) for lead and copper testing in schools and licensed childcare facilities with the elements detailed in our full comments.

3. Work to Increase Transparency and Public Education and Clarify Public Notification

Public Education, Notification, and Outreach

ASDWA supports the increased communication and education with homeowners regarding sources of lead and mitigation options in the proposed LCRR. Educating consumers and the general public is a critical component of LSLR across the country. Consumers and the general public need to be drivers in replacing all the LSLs all the way to the building wall. ASDWA recommends EPA clarify consumer versus customer notifications and provide detail on implementation, particularly for affected transient populations.

The AL in the current LCR and the proposed LCRR is a measure of corrosion control in a distribution system. Since the AL and TL are not health-based numbers, ASDWA does not agree with EPA's conclusion that a lead action level exceedance meets the definition of a Tier 1 violation or exceedance ''with potential to have serious adverse effects on human health as a result of short-term exposure,'' as described in section 2106 of the Water Infrastructure Improvements for the Nation Act (WIIN Act). Inclusion of a lead action level exceedance (ALE) as a Tier 1 violation in the final LCRR would fundamentally change the implementation of Tier 1 public notification. If EPA includes an ALE as Tier 1 public notification in the final rule, ASDWA recommends EPA provide guidance on the language for a Tier 1 public notification for a lead action level exceedance. Because the action level is not a health-based number, components of a Tier 1 public notification do not necessarily translate to a lead action level exceedance. Additionally, the 24-hour timeline for certification of notification will be difficult for states to track. ASDWA recommends that the final LCRR allow emails to be acceptable for receiving the copy of the Tier 1 notice.

4. Minimize the Implementation Burden and Increase Funding to States

SDWIS and Data Tracking

The Safe Drinking Water Information System (SDWIS) is key component of the partnership between states and EPA to implement all the NPDWRs. Robust and reliable data management is fundamental for the LCRR due to the number of transactions between the water systems and states for review and approvals of LSL inventories, compliance sampling plans, compliance monitoring data and 90th percentile calculations, LSLR plans and meeting the required LSLR percentages, CCT and changes in source and treatment, sample site assessments, and lead testing in schools and child care facilities.

The importance of considering data management throughout the rule development process is critical to the long-term sustainability and effective implementation of the national drinking water program. ASDWA is concerned that EPA has not adequately considered state data management and implementation challenges associated with the LCRR. ASDWA recommends EPA commit to developing an appropriate LCRR data management system(s) and start the development process prior to finalizing the LCRR. EPA should also commit to continuing support for SDWIS/State until a new strategic approach to SDWIS modernization is established.

Given the timing of the rule and to the many state concerns with data management of the proposed rule components, ASDWA recommends that a LCRR data management partnership be established as soon as possible, as states will need EPA's expertise and resources to properly protect public health from lead in drinking water. To that end, it is essential that the necessary modifications to impacted data systems be made prior to the effective date of the rule, and early enough to allow states time to adjust their business processes to accommodate the new provisions, complete the required state specific modifications and train staff.

Economic Analysis and State Workload Burden

ASDWA, as part of its LCRR comments, has updated its 2018 Cost of States' Transactions Study (CoSTS) based on the proposed LCRR. Regulatory changes in the proposed LCRR will lead to a significant increase in actions by the states – from tracking what is submitted, to reviewing for accuracy, to helping systems revise incorrect submissions, to training and technical assistance, to compliance and enforcement. The updated CoSTS model estimates the national total for states to implement the proposed LCRR in its first five years to be approximately additional 835,000 staff hours annually, over and above the ongoing implementation of the current LCR. The additional staff hours are a factor of 12 greater than the annual hours for ongoing LCR implementation. This is a significant increase in annual staff hours to implement a single rule, in addition to all the other SDWA implementation activities.

ASDWA recommends that EPA consider ASDWA's updated model and the significantly increased burden for states in the final LCRR. Many states will not have the resources or manpower to implement and track the regulatory changes offered in the LCRR because the staffing level is controlled by funding levels and other factors, independent of the level of effort and the work required by EPA. States will have to make tough decisions about how to prioritize support to existing programs and what they can forego to accomplish what's required in the final LCRR. Additionally, it is possible that states will choose to forgo primacy leaving EPA to implement the rule where states do not have adequate resources. ASDWA estimates that the recommendations detailed in the ASDWA comments could reduce the state staff hours by approximately 12%, to 735,00 staff hours annually in the first five years of adoption and implementation of the LCRR.

The potential fiscal impacts to states drinking water programs can be shown by comparing the estimated staff hours from above to the current levels of Federal funding from the Public Water Supply Supervision (PWSS) program. Using the national average loaded hourly rate for state employees of $58.67 (salary plus benefits and overhead), full implementation of the proposed LCRR would cost the states $50 million annually, and $43 million annually based on ASDWA's recommendations. States have struggled with meeting both regulatory and non-regulatory requirements such per- and polyfluoroalkyl substances (PFAS) over the past decade due to flat PWSS funding at $101.9 million. While the FY20 increase of 4.2% to PWSS funding (to $106.25 million) was a small step to closing the funding gap, the proposed LCRR would take 47% of FY20 PWSS funding to fully implement. Based on ASDWA's recommendations for the final LCRR, PWSS funding should be increased to a minimum of $150 million annually, noting that current PWSS authorization is at $125 million. And PWSS funding of $150 million annually would not close the funding gap due to inflation from the past decade of flat PWSS funding. Without this increased funding, states will have to make tough decisions about how to prioritize support to existing programs to accomplish what's required in the final LCRR.

Again, thank you for this opportunity to address the Subcommittee and I would be happy to discuss further how we can best address public health protection issues associated with lead in drinking water.

ASDWA's Comments to EPA on the

Proposed Lead and Copper Rule Revisions (LCRR)

Comments by the Association of State Drinking Water Administrators (ASDWA) For the Proposed Lead and Copper Rule Revisions (LCRR) Docket ID No. EPA-HQ-OW-2017-0300-0001

Introduction

The Association of State Drinking Water Administrators (ASDWA) appreciates the opportunity to provide comments on the proposed Lead and Copper Rule Revisions (LCRR). ASDWA is the professional association that serves the men and women (and their staff) who lead and implement the 57 state and territorial drinking water programs. Formed in 1984 to address a growing need for state administrators to have national representation, ASDWA has become a respected voice for states with Congress, the Environmental Protection Agency (EPA), and other professional organizations.

ASDWA's members are coregulators with EPA for the National Primary Drinking Water Regulations (NPDWRs), therefore the following recommendations are based on many years of implementation experience. ASDWA's members have been implementing the current Lead and Copper Rule (LCR) since it was originally published in 1991, as well as the minor revisions in 2000 and 2004, and the short-term revisions in 2007. ASDWA's members have recently gained additional regulatory experience in the aftermath of Flint's lead crisis by taking actions such as reviewing distribution system materials evaluations, lead service line (LSL) inventories (where available), corrosion control treatment (CCT) and water quality parameter (WQP) monitoring that goes beyond the regulatory requirements of the 1991 LCR. As such, ASDWA's members have a breadth and depth of knowledge on the details of LCR implementation that EPA should thoughtfully consider for inclusion in the final LCRR.

ASDWA's state, territorial, and tribal members (hereinafter "states"), have considerable experience working through the many complexities of the LCR regulatory language and its implementation. ASDWA offers the following comments from the perspective of the state Safe Drinking Water Act (SDWA) administrators from across the nation that regulate public water systems, implement the current LCR, and will be implementing the final LCRR. As such, these comments are intended to broadly address the proposed LCRR published by EPA in November 2019. It should be noted, however, that these comments do not necessarily represent the specific comments and concerns of individual states. ASDWA's comments also do not represent consensus from all states. We encourage EPA to consider individual state comments, in addition to ASDWA's, to gain further perspective.

General Comments

The goal for the LCRR is simple – to reduce lead and copper exposure from drinking water and thereby increase public health protection. Considerable progress has been made since the 1991 LCR in reducing the national aggregate lead 90th percentile as detailed in Figure 1 of the Brown, et al, paper (Jour. AWWA 105:5:62). For approximately 150 of the water systems serving more than 50,000 people, the median of their lead 90th percentiles decreased from 20-25 µg/L to 6 µg/L between 1992-93 and 2000. For the higher exposures, the 95th percentile decreased from 80 µg/L to 17 µg/L. Notwithstanding the occasional outliers, the considerable progress made in

understanding corrosion control and in reducing lead in drinking water since 1991 should be recognized in the final LCRR. However, the 1991 LCR needs to be strengthened to minimize the potential for additional outliers and further protect public health.

The proposed LCRR includes several special primacy requirements. ASDWA recommends that the primacy requirements for the goal-based lead service line replacement rate and "Find-and-Fix" be removed in accordance with ASDWA's recommendations for those provisions detailed further in the subsequent comments. ASDWA recommends EPA provide guidance for numerous parts of the LCRR including LSL inventories and reviewing changes in source water and treatment for impacts to corrosion.

EPA should provide details in the guidance for uniformity and clarity that all states would use to determine acceptability of inventories (additional comments on inventories are below) and review of source or treatment change, therefore rendering a special primacy requirement unnecessary for these two elements. Clarity in the final LCRR will also be needed for what constitutes a violation, and what is not a violation.

Another goal of the final LCRR needs to be simplifying the regulatory burden for states, as the 1991 LCR is one of the most complex regulations to interpret and implement. Any change to the LCR is going to require substantial training and technical assistance, so minimizing unnecessary changes and simplifying the regulatory language should be goals for the final LCRR. Some components of the proposed LCRR streamline the existing regulation, but the majority of the proposed LCRR increases the regulatory complexity and burden for states. In finalizing the LCRR, EPA must strive to simplify the regulation. ASDWA's comments provides several specific recommendations for simplifying the final LCRR.

ASDWA has updated its 2018 Cost of States' Transactions Study (CoSTS) based on the proposed LCRR and provides more details on that update later in these comments. Regulatory changes in the proposed LCRR will lead to additional actions by the states – from tracking what is submitted, to reviewing for accuracy, to helping systems revise incorrect submissions, to training and technical assistance, to compliance and enforcement. Additionally, any new drinking water regulation has a "start-up" phase for the first few years that includes developing and adopting the state-level regulation that is at least as stringent as the federal regulation, revising the data management system and associated operating procedures, providing training and technical assistance to the water systems, and providing training to state staff on the requirements of the regulation.

The updated CoSTS model estimated the national total for states to implement the proposed LCRR in its first five years to be approximately an additional 835,000 staff hours annually, over and above the ongoing implementation of the current LCR. The additional staff hours are a factor of 12 greater than the annual hours for ongoing LCR implementation.

ASDWA estimates that the recommendations detailed in the comments below could reduce the state staff hours by approximately 12% to 735,000 staff hours annually in the first five years of adoption and implementation of the LCRR. Notwithstanding the regulatory framework of the final LCRR, this is a significant increase in annual staff hours to implement a single rule, in

addition to all the other SDWA implementation activities. LCRR implementation will create significant budgetary impacts for states, who are simultaneously dealing with unregulated contaminants such as per- and polyfluoroalkyl substances (PFAS), *Legionella,* and cyanotoxins.

Additional Public Water Supply Supervision (PWSS) appropriations from Congress will be needed for successful LCRR implementation. Using the national average loaded hourly rate for state employees of $58.67 (salary plus benefits and overhead), full implementation of the proposed LCRR would cost the states $50 million annually, and $43 million annually based on ASDWA's recommendations. States have struggled with meeting both regulatory and non-regulatory requirements such per- and polyfluoroalkyl substances (PFAS) over the past decade due to flat PWSS funding at $101.9 million. While the FY20 increase of 4.2% to PWSS funding (to $106.25 million) was a small step to closing the funding gap, the proposed LCRR would take 47% of PWSS funding to fully implement. States will have to make tough decisions about how to prioritize support to existing programs to accomplish what's required in the final LCRR.

Overall Framework

The EPA is requesting comment on the overall framework for the proposed LCR revisions. Has the EPA developed proposed revisions that address the variability in conditions among the regulated water systems that affect the levels of lead that may be present in drinking water? Do the proposed revisions to the LCR target the appropriate treatment technique actions to prevent known or anticipated adverse health effects to the extent feasible in accordance with the Safe Drinking Water Act (SDWA)?

In general, ASDWA supports the proposed framework in the LCRR and we appreciate EPA taking recommendations from ASDWA's LCR Federalism comments submitted in 2018, in addition to extensive consultation and feedback from the states. ASDWA supports the proposed LCRR, as the proposal appropriately covers the diversity of system size and complexity of treatment and distribution issues. There are unique challenges with this rule that cross the property line and bridge the public-private ownership divide. Our comments below favor strengthening the incentives and requirements for full LSL replacement. We strongly support the proposed rule's efforts to close loopholes created by the original LCR, such as not sampling where LSLs are located and taking additional samples to drive down the lead 90th percentile. ASDWA also supports EPA's efforts to strengthen understanding and oversight where it is needed, such as moving to LSL inventories instead of a materials evaluation.

ASDWA is requesting a commitment from EPA to conduct training and assistance in developing expertise on things like service line inventories, how the inventories will be used to update compliance sampling plans, CCT, WQPs, and data management for state personnel, as well as for water system personnel, and the consultants the systems hire. EPA is relying heavily on state decisions and needs to make a substantial commitment to train states and systems on this complex issue. For example, training needs just for CCT could potentially include:

- Basic CCT training
- How to select and review/approve optimized corrosion control treatment (OCCT) and set WQPs:
    - Analogous treatment (case studies)
    - Pipe loop/rig studies – how to conduct a study and review/interpret results

    - Pipe scale analysis – how to conduct an analysis and interpret results, good vs. bad pipe scale
    - Regarding WQPs, setting minimums and ranges, adjusting WQPs for seasonal sources and/or treatment, selecting representative distribution system monitoring locations
- How to maintain OCCT:
    - Understand potential adverse impacts from:
        - Changes in raw water quality (changes in pH, DIC, alkalinity, etc.)
        - Water main work
        - Poor distribution system operations and maintenance
        - Mixing zones (interconnections with different water chemistry)
    - Regarding distribution systems – understand the impacts from microbial activity, low flow/high water age, nitrification, etc.
    - Learn how to mitigate adverse impacts
- How to re-evaluate OCCT:
    - What to look for - EPA should develop a checklist of criteria for evaluation
- How to conduct a simultaneous compliance evaluation:
    - Potential adverse impacts from a new source, new interconnection, new/modified treatment
    - What is required of the water system (desk top evaluation and use of analogous treatment case studies vs. pipe loop/rig studies or pilot studies)
    - What to look for in such an evaluation

ASDWA is also requesting a commitment from EPA to conduct the necessary research to continue to inform our understanding of the health effects from lead, how to design and implement OCCT, the use of WQPs for OCCT implementation and other issues where our technical knowledge needs improvements. EPA's work isn't completed after the final LCRR is published – implementation of the LCRR over the next decade is going to take a collaborative effort between EPA, states, water systems, technical assistance providers, university researchers, manufacturers, and others.

ASDWA makes several recommendations in the comments below for EPA to provide further guidance in a timely manner. EPA needs to partner with ASDWA in the development of these guidances and below are the guidances requested in the comments below:

- Overall LCRR implementation guidance;
- Guidance on how to develop and review service line inventories;
- Guidance on the criteria necessary to "demonstrate absence of LSLs", and what actions to take if LSLs are found by the system at a later date.
- Guidance on how to develop and review updated compliance sampling plans based on the inventories;
- Guidance on how to develop prioritization narratives for LSL replacement plans;
- Guidance on when to start lead service line replacement and on how to implement potential changes in 10%/20% lead service line replacement rates;
- Guidance or a model template for a pitcher filter program;
- Guidance for on state review of optimized water quality parameters (OWQP) and CCT;

- Guidance on how to address systems changing sizes and the resultant regulatory requirements based on growth;
- Guidance on what types of changes in source and/or treatment would trigger re-evaluation of CCT;
- Guidance on when changes in source and/or treatment would trigger additional monitoring requirements;
- Guidance on the definition of "consumer" versus "customer";
- Guidance on homeowner educational materials;
- Guidance on small system alternative compliance, including details on how the Lead-Bearing Plumbing Replacement Compliance Option would work;
- Revisions or additions to the 3Ts guidance; and
- Guidance on representative fixtures for lead testing in schools and child care centers.

Balancing regulatory flexibility and ease of implementation is always challenging in EPA's regulatory development process. Traditional numerical Maximum Contaminant Levels (MCLs) are easy to implement, as compliance is simply a case of comparing one number to another number. Regulatory flexibility allows states to address local needs and circumstances, but it takes more time for states to implement. Additionally, too much flexibility can create confusion, inconsistency and unintended "loopholes" and may mean that critical issues for protecting public health might not get recognized and resolved. ASDWA recommends there be limited flexibility in the final LCRR for a limited number of strategic regulatory components. Too much flexibility in the final LCRR would be problematic for states.

ASDWA recommends that EPA take a holistic regulatory approach for the final LCRR that takes into consideration simultaneous compliance with all drinking water regulations, as well as with regulations for wastewater discharges. For example, in the past, some water systems changed their residual disinfectant from chlorine to chloramine without appropriately considering changes in water chemistry that subsequently resulted in an LCR Action Level Exceedance (ALE), e.g., the Washington, DC, problems in the early 2000s. For some wastewater dischargers, the addition of a phosphate-based corrosion control inhibitor could result in additional costs, including potential violation of their National Pollution Discharge Elimination System (NPDES) permit and/or the required installation of additional nutrient removal treatment to meet increasingly stringent nutrient discharge requirements. ASDWA recommends that EPA make a more realistic assessment of Clean Water Act (CWA) implications if the agency considers mandating the addition of phosphate-based corrosion inhibitors in the final LCRR.

To conclude ASDWA's comments on the overall framework, EPA's Economic Analysis for the proposed LCRR is essentially break-even when comparing costs and benefits. However, many of the costs (for both states and water systems) are likely underestimated. So, as stated previously, opportunities to simplify the final LCRR should be pursued. Furthermore, simplifying and reducing complexities as detailed in our comments below can maintain benefits while decreasing costs.

The EPA requests comment on the complexity of the regulatory requirements that result from targeting different actions for different types of water systems and challenges States and water systems will encounter.

The revisions unequivocally increase the complexity of the rule. In particular, CCT requirements and oversight are much greater, and we found much difficulty in mapping out how the proposed process will be implemented. It is critical EPA develop implementation guidance, flowcharts, and decision trees for CCT. ASDWA is happy to partner with EPA on the development and dissemination of such guidance and looks forward to continuing the discussion.

The complexity of data management for this rule is another concern. The proposed rule greatly increases the burden of data management on states with a multitude of additional data points, early implementation activities, and new program requirements with significant data tracking, such as lead testing in schools and child care facilities and tracking service line inventories.

The proposed rule includes a high number of state transactions, which need to be simplified and reduced. The recommendations included here are meant to help decrease the complexity of the rule and reduce the burden on states. States are chronically underfunded, which constrains their ability to protect public health. Federal support to states from the Public Water System Supervision (PWSS) Program remained flat from FY09-FY19. It should be noted that FY20 appropriations increased PWSS funding by 4.2% but that small increase doesn't close the funding gap as during the past decade, inflation alone has increased states' costs by 20%. Additionally, there are increasing new resource demands from non-regulatory activities, such as post-Flint Lead and Copper Rule oversight, algal toxins, per- and polyfluoroalkyl substances (PFAS), *Legionella*, and working on the State Drinking Water Information System (SDWIS) development. With the increased workload and the additional hours for state staff from the LCRR, states could be facing tough choices for their drinking water program – what NOT to do given these new regulatory mandates, and in some cases, may choose not to seek primacy due to the excessive burden and lack of resources to meet the primacy requirements.

Lead Service Line Inventories

ASDWA strongly supports regulatory requirements in the proposed LCRR for water systems to develop an LSL inventory or demonstrate absence of LSLs. ASDWA recognizes that these inventories will evolve over time, given that the initial inventories will likely be based on a water system's paper and electronic records, which will vary substantially given the timeframes of construction in a water system's service area. But developing an inventory that is as accurate as possible over several years is critical to ultimately replacing all lead service lines across the country.

Inventory Review and Timelines

The EPA requests comment on the feasibility of creating initial lead service line inventories by the compliance date, which is three years after publication of the final rule, and if a different frequency (other than annual) would be more appropriate for inventory updates.

Recommendation: ASDWA recommends that the final LCRR include revised timelines for the submission and review and approval of the LSL inventories, review and approval of the updated compliance sampling plans (if revisions are necessary) based on the inventories, and the start of the new sampling at the new compliance sampling locations. ASDWA recommends a four-year

initial implementation timeframe for inventories and updated compliance sampling plans as follows:

- Three years for submissions of initial inventories;
- Another year for review and approval of inventories (meeting regulatory components and not accuracy of the inventories) and submission of updated compliance sampling plans; and
- Compliance monitoring based on the updated compliance sampling plan begins as determined by the state. In the meantime, the system's compliance sampling should continue on the existing schedule.

The proposed LCRR doesn't address the need nor the timing for updating compliance sampling plans based on the inventories and this is a critical step that needs to be explicitly addressed in the final LCRR. Almost all LCR compliance sampling plans were developed in the early '90s based on distribution system ***materials evaluations***, which are quite different than a complete inventory. Water systems will likely find (or have already found since the early '90s) more lead service lines and more lead goosenecks, pigtails, and connectors. Therefore, explicitly addressing the updates of compliance sampling plans in the final LCRR is important to ensure that compliance samples are being taken at the most appropriate locations.

After review and approval of updated compliance sampling plans, starting four years after the final LCRR, states would need to make individual determinations if a system's monitoring period could remain the same (every six months, annual, every three years, or every nine years [in limited cases]) or need to start over with monitoring every six months based on changes in compliance sampling locations. States would need to make the appropriate review to determine if a specific system's compliance sampling plan remains the same and the sampling period doesn't change. Based on the percentages in the economic analysis for the proposed LCRR (Exhibits 4-13 and 4-14), EPA estimated that approximately 40,000 community water systems (CWSs) have no LSLs, so compliance sampling plans for these systems would require a simpler review as potential changes to compliance sampling plans will likely be less significant.

Additionally, EPA estimated that the number of CWSs with LSLs is approximately 11,000, and all of these will likely require more significant updates to their compliance sampling plans. A reasonable timeframe of one year minimum is needed for states to conduct an appropriate review of the inventories and the updated compliance sampling plans. In some states, many water systems will include more LSLs in their new inventories than they did in their distribution system materials evaluation from the 1991 LCR. This will result in their needing revised compliance sampling plans. Even if a system only relocates a couple of compliance sampling locations to new Tier 1 sites, that revision requires an updated compliance sampling plan that must be reviewed and approved by the state. States' reviews of inventories and compliance sampling plans from systems with LSLs will require a more substantive review than from systems without LSLs. These reviews and approvals will also require SDWIS updates to reflect any changes to compliance sampling plans and/or compliance schedules.

Finally, the final LCRR needs to have flexibility for the start date of LCRR sampling using the updated compliance sampling plans. States will need some flexibility in start-up of updated

compliance sampling, i.e., if systems that are on every three years monitoring switch to monitoring every six months, for the approximately 11,000 CWSs with LSLs.

ASDWA supports EPA's proposal for a compliance date of three years after publication of the final rule for the development and submission of the initial LSL inventories with two caveats. First, this timeframe creates many early implementation issues such as the development of appropriate inventory guidance and the development of a functional data management system for inventories, updated compliance sampling location plans, compliance sample data, public notification and public education, and other reporting and recordkeeping requirements under the LCRR. Second, states will need an appropriate timeframe (ASDWA recommends one year) to review these inventories before water systems submit updated compliance sampling locations plans based on these inventories. Three years is an appropriate initial compliance date for all system sizes as "unknowns" can potentially be used where information on service materials is lacking, or for very large systems with tens of thousands of service lines. The number of "unknowns" will decrease over time as more information is obtained on the service line materials throughout the distribution system.

ASDWA recommends that inventory updates be required either annually, every three years (triennial monitoring), or every nine years (reduced monitoring), based on the systems' monitoring period. In other words, the final LCRR should match the frequency of LSL inventory updates with a water system's monitoring schedule, except for systems that are monitoring every six months who would submit annually. Water systems that are on annual monitoring or every six months should be required to submit inventory updates annually, systems that are on triennial monitoring (every three years) should be required to submit updates every three years, and systems on reduced monitoring (every nine years) should be required to submit updates every nine years. Updates should be submitted in the year prior to sample collection to allow for the appropriate review.

In the final LCRR, states should have the flexibility to require complete inventory updates or just the revisions. Outreach to state and local health agencies should also match the re-submission and monitoring frequencies. It's important to emphasize that review of initial inventories and updates will be for meeting the regulatory components and not the accuracy of the inventories.

ASDWA recommends that inventory updates cease when there are no "unknowns" and no longer any LSLs, including lead pigtails and goosenecks, in a distribution system. Water systems that have no LSLs or have replaced all their LSL should certify to the state that there are no LSLs in the inventory or there are no remaining LSLs within one year, or before their next monitoring period (whichever is sooner), of all LSLs being replaced. However, systems should still be required to notify the state when a lead service line is found during main replacement or maintenance that was thought to not be made of lead as part of the inventory.

GUIDANCE ON INVENTORIES

The EPA requests comment on whether additional requirements or guidance are needed relating to the content or format of inventories.

Recommendation: ASDWA recommends that EPA partner with ASDWA and other stakeholders to develop guidance in a timely manner after promulgation of the final LCRR that will assist states and water systems in the development of LSL inventories. Guidance should also include materials that water systems can share with their customers to help them self-identify LSLs.

Initial inventories should focus on paper and/or electronic records, with field verification as needed. The proposed regulatory language in the *Federal Register* notice (page 61755) provides an appropriate list of water systems records and plumbing codes, permits, and records in the building department(s) in the system's service area for the initial inventory. But the knowledge of the tools and resources that can be used to develop the initial inventory and refine the inventory over time is continually evolving, and ASDWA, EPA, and other stakeholders should partner on guidance that contains the most current information such as case studies and lessons learned as a component of LCRR implementation.

ASDWA has been working with its members for the past two years to collect historical information and lessons learned from states that have moved forward with developing inventories. This information was recently published (August 2019) in an ASDWA White Paper – Developing Lead Service Line Inventories. States have found the knowledge that both the water systems and the states evolves over time, and that inventories have to be regularly updated as this knowledge evolves. The recognition that the evolution of knowledge on service line materials ultimately results in improved implementation of the regulatory requirements.

Initial Inventories and Feasibility

The EPA also requests comment on the actions that systems with limited records can take to improve their understanding of the number and location of lead service lines in their water system.

Recommendation: ASDWA recommends that initial inventories focus on paper records (and electronic records where available), with field verification as needed. ASDWA also recommends the final LCRR provide flexibility to states in implementing LSL inventory requirements for some systems.

A combination of historical LCR sampling results, some knowledge of the timing of a systems' construction, combined with some limited field verification may be necessary for systems with limited records. The proposed regulatory language in the *Federal Register* notice (page 61755) provides an appropriate list of water systems records and plumbing codes, permits, and records in the building department(s) in the system's service area for the initial inventory. To improve inventories over time, water systems should use industry best practices for field verification and leverage property owners' ability to self-identify to the water system if their home has an LSL through outreach and education. Water systems can also engage in service line profile sampling to help determine the location of LSLs. ASDWA does not intend for the final LCRR or the accompanying guidance to encourage systems to dig up every service line to determine the material – other investigative techniques should be used initially.

The proposed LCRR allows systems to "demonstrate absence of LSLs" (by records or physical examination) to meet the LSL inventory requirements. ASDWA supports self-certification by the water systems to "demonstrate absence of LSL". ASDWA recommends that EPA develop guidance on the criteria necessary to "demonstrate absence of LSLs", and what actions to take if LSLs are found by the system at a later date.

Additionally, ASDWA recommends that the final LCRR include regulatory language granting states some flexibility for LSL inventory implementation for some systems to not be required to develop an LSL inventory. This language should be comparable to the language in the Revised Total Coliform Rule (RTCR) for monthly versus quarterly sampling. This is important particularly for small systems, which ASDWA requests be defined as systems serving less than 3,300 people in the final LCRR, and for Non-Transient, Non-Community Water Systems (NTNCWSs). These subsets of systems would need to have, at a minimum, historical monitoring data with 90th percentiles below 5 µg/L. If a system that is granted this flexibility ever exceeds the trigger level, the system would be required to develop an LSL inventory. Flexibility for LSL inventories has the potential to substantially reduce the final LCRR burden on the states and small water systems.

Definition of a Lead Service Line

The EPA requests comment on including galvanized service lines in lead service line (LSL) inventories.

Recommendation: ASDWA recommends that EPA develop a clear definition of LSLs in the final LCRR, as the discussion of the potential inclusion of galvanized service lines (GSLs) in the proposed LCRR is confusing. For GSLs, EPA should include all GSLs as an LSL or none of them as an LSL, not the partial inclusion as proposed in the LCRR. It will be very challenging, if not impossible, for water systems to determine if a GSLs was ever connected to lead. For example, a GSL could have previously been connected to a lead connector, which has since been removed, and now the GSL is significant source of lead, but since there's no record of it having been connected to lead it would not count as an LSL under the definition. Substantial effort could be wasted trying to resolve this uncertainty, so adopting an all or nothing approach for defining a GSL as an LSL will prevent this waste of resources. If EPA revises the definition to include a GSL as an LSL, then the removal of a GSL should be counted towards the LSL replacement (LSLR) percentages for water systems. ASDWA recommends EPA include GSLs as LSLs in all cases.

Lead goosenecks, pigtails, and connectors should be included as items in the inventories but separate from the service lines. More detailed information on the materials used for the goosenecks, pigtails, and connectors will likely be found as water systems conduct repairs and/or replace water mains over time.

ASDWA recommends that EPA clearly define in the final LCRR that the service lines that would be included in the inventories are solely for potable water. Other small diameter water lines used for irrigation, fire protection, etc., should either not be included in the inventories (and in compliance sampling plans), or, if included, should be labeled as non-potable and not counted as part of the LSLR requirements.

IDENTIFYING/REPLACING UNKNOWN SERVICE LINES

The EPA requests comment on the treatment of unknown service lines in the inventory.

Recommendation: ASDWA recommends that unknown service lines be listed as unknowns in the inventories and counted in the calculation for LSLR rates.

Decreasing the number of unknowns in an inventory will take time and will be a key component of a water system developing the knowledge of the materials for each service line (both public and private sides) in its distribution system. Handling the unknowns appropriately is important for the compliance determination for the required LSLR rates. It's important that unknown service lines count toward the calculations for replacement percentages in order to incentivize water systems to reduce the number of unknown service lines in their inventory.

As part of its LSLR program, if a water system investigates an unknown service line and determine that it is not made of lead (both public and private sides), then it counts as being replaced. Similarly, if the system investigates an unknown service line and determines that is made of lead and replaces it, then it also counts as being replaced. In either case, making the determination of the material of a service line is a critical component of a water system's LSLR program.

The regulatory requirements for inventories provide an opportunity to identify the material of all service lines, even if it is known to not be an LSL. The final rule and subsequent guidance should encourage water systems to work to identify the material of all service lines on both the public and private sides.

EDUCATIONAL MATERIALS

The EPA requests comment on whether the Agency should require water systems to distribute education materials to homes with unknown service lines to inform them of the potential for their line to be made of lead and the actions they can take to reduce their exposure to drinking water lead.

Recommendation: ASDWA recommends that EPA require water systems to distribute educational materials to homes with unknown service lines and inform them of the potential for their line to be made of lead and actions they can take to limit their exposure to lead in drinking water. ASDWA recommends EPA provide guidance on the content of the educational materials for homeowners. Consumer Confidence Reports (CCRs) could potentially be a distribution channel for the educational materials.

Distributing this information in a timely manner will likely spur homeowners to further investigate whether the service line is made of lead or made of another material. As the public becomes better educated about the potential risks from lead exposure from LSLs, the public will likely become a driving force in LSLRs all the way to the building wall. ASDWA recommends this information be distributed annually by water systems, starting after the initial inventory. Where possible, this information should available on water systems' websites. For systems that

don't have a website, these materials should still be publicly available at a reasonable location, such as the water system's office or city hall.

EPA can reasonably expect homeowners who receive this material to have many questions and should therefore ensure that any educational materials anticipates and answers those questions. Some of the questions to anticipate and answer include:

- How can a homeowner determine their service line material?
- How can a homeowner get their service lines replaced if they are made of lead?
- What services are offered by the water system for lead testing and/or verification of service line material?
- Is my family at immediate risk for lead poisoning?

Water systems should be encouraged to develop a holistic lead communications strategy as a component of the distribution of educational materials. ASDWA recommends that EPA create templates or minimum required content/language to avoid system-by-system or state-by-state creation of these materials.

Public Access to Inventories

The EPA requests comment on requiring systems with LSLs to make publicly available the exact address of the LSL in the inventory instead of a location identifier (street, intersection, landmark) as proposed. As discussed in section VI of this notice, the EPA estimates that the costs and benefits of this alternative would be similar to the proposal.

Recommendation: Water systems should be required to make their LSL inventories publicly available – for systems that have websites, post the inventories on the websites and for systems that don't have websites, makes the inventories publicly available at a reasonable location. The LSL inventories should include exact addresses in the inventories, unless expressly prohibited by state legislation that limit the release of personally identifiable information (PII) such as street addresses.

ASDWA supports transparency for the inventories as this is a critical component for water systems to build a trusting relationship with their customers. The public needs to know where LSLs are located, where service lines of other materials are located, and where service lines of unknown materials are located. ASDWA's members generally support the concept of inclusion of addresses in the inventories at the system level, with an exception for states with legislation that prohibits the posting of PII such as street addresses. It should be noted that this issue would depend on state-specific laws and/or regulations, as PII is generally defined as "any data that could potentially identify a specific individual". In cases where a water system is prohibited from releasing home addresses, an inventory should still be made publicly available and lead service lines should be identified with a less-specific locational marker, as outlined in the proposed rule.

Lead Service Line Replacements

Program Requirements

The EPA requests comments on proposed revisions to the lead service line replacement (LSLR) program requirements.

ASDWA strongly supports regulatory requirements for LSLR programs for water systems, based on the service line materials found in the distribution system inventory for every service line (both public and private sides). Requiring replacement of lead service lines on both the public and private side is a critical part of the long-term solution for reducing exposure to lead in drinking water. Research indicates that LSLs are the most significant source of lead in tap water and requiring replacement at either 10% or 20% rates every three years (see comments below) is a sound approach to enhance the public health benefits of the LCRR.

Small System Replacement Plans

The EPA requests comment on whether small water systems should be exempt from the requirement to prepare a LSLR plan concurrent with their LSL inventory, given that they may opt not to select LSLR as a compliance option if the action level is exceeded.

Recommendation: ASDWA recommends that the LSLR regulatory requirements in the final LCRR be consistent across all system sizes.

Unless a small system is granted flexibility for developing an LSL inventory as previously recommend, small systems should not be exempt from the requirement to develop a LSLR plan with their inventory. A small system would need to understand the scope of a potential LSLR program as part of the evaluation of potential compliance options that would take local conditions into account. Additionally, an objective of the final LCRR should be minimizing different regulatory requirements across different system sizes as this regulatory approach requires more state tracking of the differing regulatory requirements, as well as creating implementation issues when systems change size categories. Therefore, the requirement to develop a LSLR plan should remain consistent regardless of system size. Compliance deadlines could be staggered in the final LCRR (like other previous National Primary Drinking Water Regulations), but the regulatory requirements should remain consistent.

LSL Replacement Rates

The EPA requests comment on goal-based and mandatory lead service line replacement (LSLR) rates under the proposed LCR revisions. The EPA requests comment on the goal-based lead service line requirement for systems that exceed the trigger level. Does the goal based LSLR requirement provide adequate incentives for water systems to achieve meaningful reductions in their lead service line inventory? Does the goal-based program enable systems to effectively incorporate LSLR into their infrastructure replacement programs? The EPA requests comment on what criteria must be met for the EPA to establish a federal goal rate for water system under § 142.19.

Recommendation: ASDWA recommends the final LCRR included regulatory requirements for mandatory and consistent LSLR rates, i.e., the required percentages are consistent across system sizes. ASDWA recommends that if a water system's 90th percentile exceeds the Action Level (AL), the system be required to replace 20% of its LSLs every three years, including identification and/or removal of unknown LSLs in this calculation. Note that ASDWA's recommendation is based on Action Level Exceedances (ALEs) versus the exceedances of the trigger level (TL). ASDWA recommends that any system with LSLs with a 90th percentile below the AL be required to replace 10% of its LSLs every three years.

Mandatory and consistent LSLR regulatory requirements provide the necessary incentive, i.e., clear and unambiguous regulatory requirements, for water systems to achieve significant reductions in LSLs across the U.S. While voluntary LSLR programs have made some reduction in the number of LSLs nationally, regulatory requirements are necessary to ensure that all LSLs and lead goosenecks, pigtails, connectors are removed across the country. Mandatory and consistent LSLR programs can also fit into a system's distribution system replacement program.

Additionally, ASDWA does not support goal-based LSLR percentages that are based on system size, and/or would require negotiations and back-and-forth discussions between states and water systems. These negotiations and discussions would place an unnecessary burden on states. As previously stated, ASDWA recommends that any system with LSLs with a 90th percentile below the AL be required to replace 10% of its LSLs every three years.

As part of ASDWA's recommendations for mandatory 20% and 10% LSLR rates, it is not necessary to develop criteria for EPA to establish a federal goal rate for a water system under §142.19 as part of the final LCRR.

The goal is to meet the above LSLR rates by replacing the entire LSL. For many water systems, the customers must authorize and pay for replacement of the customer-owned portion of the LSL. The ability and willingness of customers and homeowners to pay for private side replacement varies widely, and this has led to many partial LSL replacements and a smaller number of full LSL replacements since the 1991 LCR. ASDWA recommends that partial LSL replacements count towards the replacement goal in two scenarios:

1. Replacing private LSLs from previously conducted partial LSL replacements; and
2. Replacing the public side of an LSL due to unresponsive or recalcitrant homeowners.

In the case of an unresponsive homeowner, a water system must reach out to the homeowner at least twice in two different ways (for example, some combination of mailing, doorhanger, or phone call).

ASDWA supports the proposed LCRR language clarifying that water systems must offer to replace a customer-owned LSL (including goosenecks, pigtails, or connectors) but water systems are not required to bear the cost of replacement of the customer-owned LSLs. Water systems should not be required to replace a customer-owned LSL if the customer objects to its replacement.

Minimum Replacement Rate

The EPA also requests comment upon the feasibility of replacing a minimum of three percent of the lead service lines a year for the systems that exceed the action level. The EPA requests comment on whether the number of lines required to be replaced should be three percent of the number of lead service lines plus the number of unknown service lines at the time the systems exceeds the action level.

Recommendation: As previously discussed, ASDWA recommends that if a water system's 90th percentile exceeds the AL, the system be required to replace 20% of its LSLs every three

years, including unknown LSLs in this calculation. ASDWA recommends that any system with LSLs with a 90th percentile below the AL (and remains below the AL) be required to replace 10% of its LSLs every three years.

When a system exceeds the AL for the first time and returns to compliance during the 4 subsequent 6-month monitoring periods, the system can return to the mandatory 10% replacement rate for LSLs every three years. Once a system exceeds the AL a second time, the regulatory requirement to replace 20% of LSLs every three years should remain in place until all LSLs are replaced, even if the system's 90th percentile drops below the Action Level at a later date. Maintaining the mandatory replacement minimizes the potential disruption of LSL replacement programs when a system's 90th percentile moves above and below the AL. All systems should begin LSLR within a year of the state's approval of the LSLR plan.

ASDWA supports the proposed regulatory framework that allows for not meeting the LSLR goal to be not be a violation. A water system that does not meet the LSLR goal would be required to conduct annual public outreach as detailed in the proposed LCRR. ASDWA supports the proposed regulatory requirement that the LSLR rates provide some flexibility in meeting the LSLR goal, assuming that some homeowners might not respond to the notice as proposed in Section §141.64(b) for LSL inventory and replacement requirements.

ASDWA recognizes that regulatory requirements for replacement rates will pose challenges for some water systems. ASDWA recommends that EPA provide funding for full LSL replacements, including potentially using DWSRF funds (where possible) to pay for private side replacements. It should be noted that grants would be helpful (and in some cases, may be necessary) to homeowners for private side replacements. It should also be noted that the infrastructure funding needs are much greater than DWSRF appropriations and that states will be challenged in balancing the need for LSLR with the other infrastructure funding needs.

Private Side LSL Replacements

The EPA requests comment on the feasibility for a water system to replace its portion of an LSL within 45 days of being notified that a customer has replaced the customer portion of an LSL. Should this time frame be longer? Should this time frame be shorter? The EPA also requests comment on whether such replacement by a water system should be mandatory or voluntary.

Recommendation: ASDWA recommends that a longer timeframe be included in the final LCRR to allow for potential construction and weather issues to be considered. A more appropriate timeframe would be 120 to 180 days; however, water systems should be required to provide pitcher filters or an alternate source of water, such as bottled water, to reduce exposure during this longer timeframe. Additionally, the water system should be able to extend the timeline for replacement in order to coordinate with street repairs or other maintenance if approved by the state.

There are many potential challenges with requiring a public portion of an LSL be replaced within the proposed 45 days of a private side replacement. If a water system is notified in late

November of a customer-side replacement, then the water system would be required to replace the public side in the middle of winter, and this simply isn't feasible in many parts of the country. Additionally, this short window makes for inefficient LSLR, as it may lead to water systems replacing service lines in various parts of the service area rather than systematically replacing service lines as a part of a comprehensive LSLR program, a water main replacement program or through other capital improvements.

ASDWA recommends that such a replacement by a water system be mandatory in order to minimize the potential timeframe for partial LSL replacements. However, the timeframe for this regulatory requirement should begin when the water system is notified that the customer has replaced the private side of an LSL. Ideally, the water system and the customer should coordinate for simultaneous replacement, and water systems should stress the importance of simultaneous replacement as part of its customer education materials for homes with LSLs or with unknown service lines. Additionally, some limited flexibility for this timeline based on extenuating circumstances should be included in the final LCRR.

Prioritizing LSL Replacements

The EPA requests comment on how water systems that are conducting LSLR can identify and prioritize replacements at the locations that have the highest lead levels and/or the most susceptible populations. The EPA requests comment on whether to require water systems to describe in their LSLR plan, how LSLR will be prioritized or to require a prioritization plan at the time LSLR is compelled.

Recommendation: ASDWA recommends that water systems conducting LSLR use a combination of information from LSL inventories (neighborhoods or areas with a high percentage of LSLs) and tap sampling data to prioritize replacements.

ASDWA recommends that water systems be required to provide a simple narrative to states on how LSLRs will be prioritized as part of their LSLR plan. This narrative could be a few pages of text describing the prioritization process, and ASDWA recommends that EPA develop a template for this narrative as part of the implementation guidance for the final LCRR. EPA should consider developing ranking/scoring criteria to streamline the prioritization process, so this effort doesn't fall back to the states.

Water systems should not be required to conduct extensive prioritization analyses for their LSLR programs. Extensive justification for timing and construction schedules for the LSLR programs would place an unnecessary regulatory burden on the states (who would have to review these justifications) and for water systems (who would have to develop these justifications). A simple narrative is enough for a system's LSLR program.

When to Conclude Required LSLR

The EPA is requesting comment on the appropriateness of requiring two years of tap sample monitoring before water systems may stop LSLR. Under this proposal, corrosion control treatment (CCT) or re-optimization of CCT may not immediately reduce lead levels at the tap. The EPA proposes that two years of monitoring would be enough time to evaluate and ensure these measures consistently reduce lead to meet the action level.

Recommendation: ASDWA does not recommend stopping LSLR based on tap sample monitoring, given ASDWA's recommendations for mandatory 20% and 10% LSLR rates.

The national goal for LSLR programs is for full LSLR, all the way to the building wall and thereby reduce the exposure to lead in drinking water. As previously discussed, ASDWA recommends that if a water system's 90th percentile exceeds the AL, the system be required to replace 20% of its LSLs every three years, including unknown LSLs in this calculation. Once a system exceeds the AL, the regulatory requirement of 20% LSLR rate every three years should remain in place until all LSLs are replaced, even if the system's 90th percentile drops below the AL. ASDWA recommends that any system with LSLs with a 90th percentile below the AL (and remains below the AL) be required to replace 10% of its LSLs every three years.

Pitcher Filters

The EPA request comment on the appropriateness of pitcher filters for risk mitigation after LSLR or LSL disturbances given that the customer would be responsible for operation and maintenance.

Recommendation: ASDWA supports the distribution of pitcher filters (with a 90-day supply of replacement filters) for risk mitigation after LSLR or LSL disturbances. After such distribution, a water system's regulatory requirements are complete.

ASDWA agrees with EPA's proposed regulatory requirements for the water system to provide flushing instructions and a pitcher filter, certified by NSF International or other third-party validators, to the consumer to remove lead along with three months of replacement cartridges for risk mitigation after LSLR or LSL disturbances. Additionally, ASDWA agrees with EPA's proposed regulatory requirement for a follow-up tap sample within three to six months after LSLR.

ASDWA recommends that the final LCRR include alternative compliance options to pitcher filters, such as bottled water or water filling stations (with appropriate compliance sampling protocols). These alternative options will help provide the necessary flexibility to states and water systems. ASDWA recommends that EPA develop guidance for a model pitcher filter program or a template as part of the guidance for the LCRR.

Alternative Treatment Technique

Recommendation: ASDWA recommends that EPA add an alternative treatment technique for large water systems to the final LCRR based on the Denver Water approach.

In 2019, Denver Water applied for and was granted a treatment technique variance from the SDWA for the LCR. Based on the Denver Water variance approach, ASDWA recommends that EPA add an alternative treatment technique for large systems that protects public health and reduces environmental impacts. This alternative treatment technique would be a comprehensive and multifaceted approach to addressing corrosion and limiting a major source of lead in drinking water including: a CCT that substantially reduces lead but avoids environmental impacts (e.g., pH control instead of the addition of orthophosphate), accurate LSL inventory,

removal of any/all LSL within 15 years, at-home filters provided to LSL homes, and an extensive public education/outreach campaign. We believe that this holistic approach to addressing lead should be allowed as a compliance tool for large systems if approved by the state and possibly by the EPA regional administrator on a case-by-case basis. We believe this large system alternative treatment technique is more protective of public health than at least one option allowed under the proposed small system flexibilities. Under the proposed rule, a small system could be allowed to only replace LSLs over 15 years without other interventions to reduce lead exposure such as alternative corrosion control, at-home filters, and public outreach.

Tap sampling

The EPA is requesting comment on an alternative revision to the LCR's existing tap sample collection method provisions.

ASDWA supports EPA's proposal to maintain the first draw, one-liter samples for LCRR compliance tap sampling. Sequential sampling would be too complex for compliance sampling but could be useful as an option for systems during their sample site assessments (an alternative approach recommended by ASDWA as opposed to the proposed Find-and-Fix). ASDWA supports EPA's proposed requirement to use wide-mouth bottles for compliance sampling and eliminate pre-stagnation flushing and the cleaning or removing of faucet aerators in tap sampling protocols. ASDWA supports the proposed regulatory framework for Tier 1 sample sites be those served by LSLs to assure prioritization of sites that are the most likely to yield elevated lead levels in drinking water. ASDWA supports states' maintaining the flexibility to determine systems' monitoring schedules – every six months, annual, every three years, or every nine years.

However, the sampling guidance for schools and child care facilities is different with respect to the stagnation period. Tap sampling in the proposed LCRR for homes has no maximum stagnation time, while the 3Ts guidance recommends that the stagnation period be less than 18 hours. ASDWA recommends that the final LCRR match the 3Ts recommendation, so that the stagnation period be less than 18 hours for all compliance samples, not just for lead sampling in schools and child care facilities.

As previously discussed, ASDWA recommends a four-year initial implementation timeframe:

- Three years for submissions of initial inventories; and
- Another year for review and approval of inventories and submission of updated compliance sampling plans.

The number of activities for states to conduct after the rule becomes effective and before the first tap sampling period is not manageable for any state. Since the first tap sampling event is based on the LSL inventory, with a new tiering structure, all states will be required to review all of the systems' revised compliance sample plans to verify they are following the new tiering structure, along with having to review the tap sample instructions, WQP sample locations, and confirm that the LSL inventory was conducted correctly. As previously recommended, an additional year for states to review and approve updated compliance sampling plans needs to be included in the final LCRR.

Recommendation: ASDWA recommends including a confirmatory sampling process or a science-based invalidation procedure in the final LCRR, particularly for small and very small systems that collect only five samples.

The proposed LCRR does not address the situation where a small system that collects five samples could be triggered to take action based on an outlier sample. ASDWA supports a confirmatory sampling process or a science-based invalidation procedure in the final LCRR.

The current LCR allows for invalidation of routine lead samples in only four cases:

1. The laboratory establishes that improper sample analysis caused erroneous results;
2. The department determines that the sample was taken from a site that did not meet the site selection criteria of this rule;
3. The sample container was damaged in transit; or
4. There is substantial reason to believe that the sample was subject to tampering.

This does not address the situation where there is an error in collection by the customer, which is often due to collecting the sample from a tap where there has been excessive stagnation. Almost always the results are not reproducible when tested and in reviewing past data for the system, the results are not indicative of there being a corrosion issue. One improperly collected sample could result in significant costs for the water system, loss of confidence in the water by the customers, and additional workload for the state.

Action Level and Trigger Level

The EPA requests comment on the proposed trigger level of 10 µg/L and the actions water systems must take if they exceed this trigger level. Does this level represent an appropriate 90th percentile level at which to require systems to initiate progressive actions to reduce drinking water lead levels? The EPA requests comment on other 90th percentile level thresholds that would be reasonable for water systems to initiate progressive actions to reduce drinking water lead levels.

Although ASDWA is disappointed that EPA declined to determine a health-based value in the proposed LCRR for lead in drinking water, ASDWA supports keeping the Action Level (AL) at 15 µg/L. ASDWA recommended a "bin" regulatory framework to EPA in its LCR Federalism Consultation comments that paralleled other rules, such as the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and prioritized regulatory actions for systems that have higher 90th percentiles, thereby increasing public health protection in a timely manner. Although EPA did not fully use this recommendation, ASDWA supports the introduction of the 10 µg/L Trigger Level (TL) into the regulatory requirements as the TL will require action at the system level to decrease their 90th percentile and reduce exposure to lead in drinking water throughout their community. There will likely be an increased burden on states and water systems as a result of the increased complexity of the rule due to the RL. The risk communication to the public will be more difficult due to having two numbers in this rule, as neither number is health-based. ASDWA requests EPA provide specific language in guidance on communicating these numbers and what these numbers mean to customers and the general public.

Corrosion Control Treatment

- *The EPA is requesting comment on the proposed CCT re-optimization requirements.*
- *EPA requests comment upon the potential actions water systems could take to adjust their corrosion control treatment and how they should work with the State to determine if adjustments to the treatment would better optimize corrosion control.*

ASDWA recommends that EPA simplify the CCT requirements in the final LCRR. As previously discussed, CCT requirements and oversight are much greater in the proposed LCRR, and it was challenging to map out how the proposed process will be implemented. It is critical EPA develop implementation guidance, flowcharts, and decision trees for CCT. ASDWA is happy to partner with EPA on the development and dissemination of such guidance and looks forward to continuing the discussion.

ASDWA supports the proposed approach of expecting systems to evaluate or re-evaluate their corrosion control performance if the TL is exceeded, however, more guidance is needed to understand when and if a study is required, and more flexibility is needed for the contents and methods of the acceptable studies considering the diversity of water systems and state practices. All study options should remain acceptable and the water systems should be allowed to adjust their current treatment for re-evaluation or re-optimization instead of embarking an effort to study another type of a treatment. ASDWA recommends that the CCT component of the final LCRR be significantly simplified and there are areas that need clarification as detailed below.

EPA should consider in the final LCRR implementing and maintaining CCT, not just choosing the initial CCT option. Many states see issues not with systems making an incorrect original CCT choice, but with maintaining CCT throughout the system once it's implemented.

Increase Flexibility on Corrosion Control Treatment Studies

Recommendation: ASDWA recommends that the final LCRR provide flexibility for states to approve more rapid, less expensive CCT studies that can be tailored to system-specific issues, sources of lead, existing CCT practices, and constraints. The focus in proposed LCRR for pipe loop/rig studies is not implementable, as pipe loop/rig studies are complicated to design, construct and operate ASDWA recommends that guidance be developed to support state approval of the study options. Rather than restricting the contents of the studies and acceptable methods for re-optimization, study requirements could be determined based on "bins," that consider, for example, the following issues:

- Action Level Exceedance (ALE) vs. Trigger Level Exceedance (TLE);
- Lead and/or Copper corrosion;
- Absence, presence, and type of CCT;
- Absence or presence of LSLs, and/or the percentage of LSLs in the distribution system;
- Number of sources of supply, chemistry compatibility, blending within the distribution system, and service to consecutive systems; and
- Regional impacts of treatment changes

ASDWA agrees that large and medium systems with an ALE or a TLE should be required to evaluate the effectiveness of their *existing* CCT. There will likely be situations where WQPs are not meeting targets throughout the distribution system. In these instances, a re-evaluation of how

to meet WQPs is the most appropriate first step, and potential remedies will be identified during the Sample Site Assessment (see Find and Fix comment section). If established WQPs *are* being met and the Sample Site Assessment finds no other localized remedies (including LSL or fixture replacement), then it is likely that current CCT is inadequate and "re-optimization" is warranted. Systems should first consider modifying their existing treatment practices (such as further raising pH/alkalinity or orthophosphate dosage) prior to considering alternative treatment strategies. Evaluation of existing treatment modification can be done using desk-top, coupon, analogous system, or partial system or full-scale trials.

However, the proposed LCRR suggests that complex CCT pipe loop/rig studies are required for re-optimization in response to an ALE/TLE. The requirements for complex, expensive, and time-consuming pipe loop/rig studies or partial system studies isn't necessary when a variety of approaches can be used to re-evaluate or re-optimize CCT. The rule does not allow states to approve more rapid, less expensive studies that can be tailored to system-specific issues, sources of lead, existing CCT practices, and constraints. Recent experience with pipe loop/rig studies, including with Denver Water, suggest that these studies can take years to complete because of the difficulty in constructing them and stabilizing lead results after testing begins. Implementing CCT and therefore reducing lead levels, is delayed during the study. Unless absolutely necessary, such long delays in implementing CCT should be avoided in the final LCRR.

Furthermore, the proposed LCRR CCT study language is very prescriptive and seems to be geared toward relatively simple system configurations with only one or two sources of supply, and assumes LSLs can be harvested, preserved, and mounted into a pipe rig are present. Some systems will have ALEs/TLEs with no LSLs. It also assumes that conditions at a treatment plant (where pipe loops/rigs with chemical feed and disposal systems would likely need to be placed) are representative of chemistry conditions within the distribution system. The proposed parts §141.82(c)(1), (2), and (3) restrict the content of the studies, the allowable approaches to conducting the studies, and underrepresent the types of constraints systems face.

Determining Acceptable CCT Study Methods

Recommendation: ASDWA recommends a "toolbox" approach be allowed for determining acceptable study methods in the final LCRR.

Desktop, coupons, analogous system, and pipe loop/rig studies all have value and can provide diverse types of information in different timeframes. Water quality conditions at a treatment plant (where pipe loops/rigs with chemical feed and disposal systems would likely need to be constructed) can be significantly different than in the distribution system, and therefore, may not yield representative results. For example, for chloraminated systems, nitrification events can lower pH, oxidation reduction potential, dissolved oxygen, and cause significant microbial activity. Nitrification should not be occurring at a water treatment plant (WTP), and lead release under these conditions would not be captured.

For free chlorine systems, chlorine residuals are often much higher at a WTP or pump station, which can favor formation of Pb (IV) species. Only Pb (II) control strategies are included in the rule. Thus, pipe loops/rigs at WTPs may not be representative of distribution system conditions and may not accurately inform the selection of the appropriate Pb (II) CCT strategies.

Additionally, pipe loops/rigs at WTPs would not capture blending and alternating water quality conditions that occur within the distribution system with multiple sources of supplies. For all these reasons, water systems and states need the flexibility to select the study approach that will yield the most representative, rapid, and cost-effective results.

Continued Optimization of CCT and Re-optimization

Recommendation: ASDWA recommends that EPA ensure that the final LCRR is as protective as the current rule by requiring all large water systems to continue to provide optimal corrosion control treatment (OCCT).

The proposed rule may not be as protective as the current rule for large systems. The current rule requires ***all*** large systems to provide OCCT. However, the proposed section §141.81(a)(1)(iii) indicates that large systems with CCT that do not exceed the lead TL or the copper AL, but also do not meet the (b)(3) definition of optimization, "may be required by the state" to complete CCT steps in paragraph (d). Similar language is provided in §141.81(a)(1)(iv), indicating that large systems without CCT "may be required by the state" to complete CCT steps in paragraph (e). EPA seems to be creating a new subset of large systems that may not currently be optimized, yet the states may not have authority to require additional action. ASDWA recommends all large systems be required to implement OCCT or be deemed optimized using (b)(3). EPA should clarify under what circumstances large, non (b)(3) systems without lead TLE or copper ALE should be required by the state to complete re-optimization. All states should then require each of these systems to complete CCT steps in paragraphs (d) or (e), as applicable.

For small and medium systems, EPA should clarify in §141.82(b)(3) that re-optimization applies only to systems with designated OCCT, not all systems with CCT. Unless designated as OCCT, clarify that the state may require small and medium systems with CCT to perform CCT studies under §141.82. The proposed rule should state that systems with CCT, even when treatment has not been designated cannot turn off the treatment process without state approval. EPA guidance is also needed on the optimization steps and timeline for medium systems that become large systems due to population increases.

The proposed and current rules require the states to "designate" CCT and optimal WQP. Many states review and approve treatments and parameters recommended by the water system and designate through approval of those recommendations. The term designate suggests that the states shall select treatment and determine optimal water quality parameters (OWQPs) as a service to the utilities, and this is not a practical approach for LCRR implementation.

For small and medium systems, re-optimization under proposed §141.82(a)(5) can be applicable only to CCT that has been designated as optimal. Small and medium systems may have CCT installed but are deemed optimized because they haven't exceeded an AL. For these systems, re-optimization would not apply. Also, note that the language in proposed §141.82(b)(3) is missing (c)(2) systems and only refers to (c)(3) systems.

Determining when a CCT Study is Required

Recommendation: ASDWA recommends that the CCT requirements be simplified and redundancies removed from the final LCRR and clarify when a CCT study is required.

ASDWA recommends that the final LCRR be clear when a corrosion control study is required. Some states feel obligated to always require a study due to post-Flint concerns (if they have the authority to do so), while other states cannot require anything additional that is not explicitly required by the final LCRR. Furthermore, the proposed part §141.82(a)(1-7) ais confusing, jumping back and forth between system sizes, TLE/ALE, and presence or absence of CCT. In the final LCRR, EPA should clarify if the study requirements are the same for medium and large systems and whether the large system is installing or re-optimizing CCT, ASDWA recommends that the final LCRR language and readability be simplified by listing all requirements by system size in one paragraph for each system size and provide a table or flowchart that explains the differences between small, medium, and large systems that includes triggers, actions, study requirements, treatment installation requirements, and timelines. If there is a fundamental difference in study or treatment installation requirements for large versus medium-sized systems, EPA should provide justification in the final LCRR as to why a seemingly lesser degree of analysis and protection is acceptable for medium-sized systems. The typical state process is that systems submit a proposed recommendation or design and the state reviews and approves it. To reflect this approach, the "state designates" language in the proposed LCRR should be revised in the final LCRR to "the state will review and approve" for both the OCCT treatment and OWQP.

Orthophosphate Residual

Recommendation: If specific orthophosphate dosages remain included in the rule, the EPA should specify if the orthophosphate residual concentration is meant to be ortho- or total phosphate and if the units are mg/L as orthophosphate or phosphorus.

The LCRR includes the requirement to complete CCT studies at a minimum of 1mg/L and 3mg/L orthophosphate residuals at the customers taps without specifying if these residuals are measured as phosphate or phosphorus.

Calcium Hardness Adjustment and WQPs

Recommendation: ASDWA recommends that calcium hardness adjustment should be removed as a CCT strategy, but calcium, conductivity, and temperature should be retained as WQPs. EPA should provide additional guidance for lime softening and corrosion control as systems that use lime softening receive additional benefit of CCT although CCT is not the main justification for utilizing this treatment.

ASDWA agrees that calcium hardness adjustment should be removed as a CCT strategy. However, calcium, conductivity, and temperature should remain as WQPs during initial WQP monitoring following an ALE or TLE and when re-optimizing CCT. Calcium plays a role in treatment selection regarding the likelihood of calcium precipitation with pH/alkalinity adjustment, as a factor in orthophosphate effectiveness, and may be a factor in determining which OCCT method is chosen. Conductivity and temperature can help a system understand the effects of blending different sources and seasonal issues that could be impacting CCT effectiveness.

Optimal WQP Monitoring

Recommendation: ASDWA recommends that the final LCRR require all systems to continue regular monitoring of the OWQPs.

For systems with CCT in place, WQP monitoring after a TLE or ALE should match the WQP monitoring during the follow-up monitoring phase rather than initial WQP monitoring. Small and medium water systems should also be required to monitor WQPs to ensure consistent CCT performance. WQP monitoring could be at a reduced frequency or fewer locations as compared to large systems, but some monitoring is needed, with lesser consequences for non-compliance. States should have some flexibility for the compliance consequences related to nine days of excursions for small and medium systems. For example, a WQP excursion could prompt a Sample Site Assessment (see Find and Fix recommendation) instead of a treatment technique violation and public notification. However, some states want to issue a violation for WQP excursions so that water systems must take the appropriate actions to return to compliance.

Regardless of size, all consecutive systems that receive water from a wholesaler with CCT should sample WQP at the consecutive connection or entry point into their distribution system at the same frequency as the wholesaler. This would help gauge whether or not there is a problem with the treatment change that the wholesaler made.

WQP Methods

Recommendation: ASDWA recommends that EPA address acceptable methods and proper instrument calibration for WQP analysis in the final LCRR.

ASDWA agrees with the proposed revisions that require all systems to monitor WQPs following treatment installation. All systems with CCT installed should be required to continue regular monitoring of WQPs; however, EPA should address issues with WQP analysis, specifically regarding the use of acceptable methods and proper instrument calibration. For phosphate, pH and alkalinity, many systems use field-based equipment to monitor and control their OCCT. However, some states may want to require lab confirmation for certain WQPs. States have found that many small systems do not properly monitor for pH, leading to data integrity issues. To ensure data quality, clear regulatory language needs to be included in the final LCRR on acceptable methods of pH monitoring for process control. Acceptable methods and calibration expectations should be provided, similar to chlorine and turbidity in the Surface Water Treatment Rule.

State Review of OWQP and CCT

Recommendation: ASDWA recommends that OWQP and CCT review should not be limited to sanitary surveys.

ASDWA agrees that regular review of OWQPs and CCT is warranted, but more flexibility should be provided to the states for implementation. Requiring a review of CCT and OWQPs as part of sanitary surveys would be troubling for the states that use different staff for sanitary surveys versus staff trained to evaluate CCT performance. ASDWA recommends that EPA develop guidance for conducting these reviews, as providing additional information in guidance on the breadth and depth of these reviews is critical to LCRR implementation. In the final LCRR,

EPA should consider only mandating this review for systems with 90th percentiles above 5 µg/L and they should not be mandated as a part of the sanitary surveys. This approach would be method to reduce implementation costs while maintaining the benefits.

Sample Site Assessments (proposed as "Find-and-Fix")

EPA requests comments on opportunities to:

- *Reduce complexity of the regulatory requirements*
- *Simplify and reduce burden, including paperwork burden, while still assuring adverse health effects are prevented to the extent feasible*
- *Improve ability of State or Federal government to enforce this rule*
- *Improve ability of State or Federal government to assist water systems with compliance.*

The EPA requests comment on the utility of States maintaining records of water system actions related to find-and-fix.

ASDWA recommends a simplified "Find-and-Fix" approach that is focused on rapid steps utilities can take to improve water quality, ensure that WQPs are being met, identify LSLs (including goosenecks, pigtails, or connectors), and educate homeowners. "Find-and-Fix" at a household level as proposed in the rule, however, is not practical to implement, track, or approve by the state. The proposed approach exposes utilities and states to significant liability, and furthermore could result in unintended consequences if utilities attempt to "fix" household issues by changing CCT. Additionally, states should not be responsible for maintaining records of water system actions related to "Find-and-Fix." The proposed approach is very costly and time-consuming, with benefits potentially accruing to a limited number of consumers.

Recommendation: ASDWA recommends that the **"**Find-and-Fix" terminology should be revised to "Sample Site Assessment" in the final LCRR. A simplified, three-step Sample Site Assessment approach to rapidly identify factors contributing to an individual high lead result is recommended. The approach summarized below ensures that action is taken by the water system, willing homeowners receive additional assistance and education, and states have a viable means of tracking activities.

- **Step 1** of the proposed rule should be retained, with the exception of §141.82(j)(1)(v). Results from Step 1 will identify corrective actions the water system can take to improve water quality in the vicinity of the home and to ensure that designated WQPs are being met within the distribution system. Systems with designated OCCT and WQPs should not permanently add investigative WQP sites to their minimum number of sites. This discourages a thorough investigation and logistically is nearly impossible to track. It provides little to no value once the system and/or homeowner have resolved the issue.
- **Step 2** should require the water system to offer additional sampling and educational materials to homeowners, conduct additional sampling if requested by the homeowner, and assist with identifying the presence of an LSL or lead-containing faucets, whether or not issues related to WQPs were identified in Step 1. Water systems should also offer neighboring home(s) be sampled for lead in the follow-up sampling as part of the investigative procedure. If an LSL or lead gooseneck, pigtail, or connector is confirmed, it should be entered into the LSL replacement plan per §141.84(b). Utilities and states should not be involved in carrying out, tracking, or approving internal plumbing modifications (except when an LSL is found). State regulators and water system

operators are not certified plumbers and cannot be expected to have the expertise needed to pinpoint source(s) of lead and identify appropriate "fixes" such as specific plumbing modifications. Additionally, requirements for customer notification of the additional sampling should mirror the consumer notice for tap samples and the requirements should be noted in §141.82(j), and not under the definition in §141.2 in the final LCRR.

- **Step 3** should be modeled after the Level 1 Assessment approach under the Revised Total Coliform Rule (RTCR) and require documentation of activities taken under Steps 1 and 2, including the results of WQP sampling, identification and implementation status of corrective actions to maintain WQPs in the vicinity of the home, offers/acceptance/refusal and results of additional homeowner sampling, and distribution of educational materials. Step 3 results should be provided to the state within three months from the end of the monitoring period in which the single household action level was exceeded.

Steps 3 through 8 in the proposed LCRR should be removed. §141.82(j)(3) Step 3 implies that systems can be triggered into a "fix" such as initial or re-optimized CCT, based on one or two homes exceeding the AL. Small and medium systems may not have designated WQPs, and therefore no basis with which to compare any data collected under Step 1. The need for initial, modified, or re-optimized CCT, which could result in new or different WQPs, should be determined when there is a TLE, ALE, or due to introduction of a new source/treatment change. Furthermore, it would be very hard for states to track on-going adjustments to tap monitoring and WQP monitoring sites under the proposed rule. It is not clear how fixes at systems with TLE/ALE that are already in the process of determining the need for initial, modified, or re-optimized CCT should be accounted for under the proposed Find and Fix. A single home with a TLE or ALE, or even a few homes with TLEs and ALEs, should not force a system to adjust system-wide CCT based on these limited sampling results.

Change in Source or Treatment

Guidance for Water Systems on Source and Treatment Changes

Recommendation: ASDWA recommends that more detailed guidance is developed to help states and water systems decide the following:

- Types of source and treatment changes that require state review and approval, require a CCT study, re-optimization, and/or additional monitoring. Some examples would include:
    - Specifying that stopping existing treatment would require state approval and trigger a CCT study.
    - Noting that adding a well from an existing wellfield with the same general water quality may not require additional actions.
- The level of review needed by states for evaluating design criteria for different source and treatment change scenarios.
- Expectations following a source or treatment change for water systems with multiple sources of supply, regional providers, consecutive systems, or other complex situations.

The above guidance is critical and should be developed in partnership with the states. EPA and the states must collaborate on what source and treatment changes are "typical operations" versus

more significant source and treatment changes require a new CCT study, re-optimization or additional monitoring.

Since source and treatment changes were the main reason for the large-scale lead problems in Flint, MI and Washington, DC, states are concerned that the proposed revisions do not appropriately address these important issues or include more details on how to avoid such incidents in the future. The guidance should be clear on when a new CCT study, re-optimization, or additional monitoring will be required in preparation for a source or treatment change. Additional detail is needed in the guidance for the final LCRR for water systems to understand the circumstances when they are required to submit written documentation to the state for review and approval for source and treatment changes; what the level of state review and evaluation entails; and what the appropriate actions are. While some states have requirements for studies for any changes, other states cannot have any requirements that are stricter than the Federal regulatory requirements.

While the proposed LCRR, and existing LCR, provides some examples of a modification of an existing treatment process that would require state review and approval, many circumstances beyond those when there is an "addition of a new source or any long-term change in water treatment," need clarification in the final LCRR such as:

- Where any other event impacts water quality such as a contamination incident or modification to the water system not related to the Lead and Copper Rule, and
- Where a small system might think they can discontinue or stop CCT without notifying the state or undertaking any follow up actions. Examples of treatment changes that a small system might consider insignificant or "not CCT-related" but still impact water quality and corrosivity include (but not limited to): discontinuing or changes to iron and manganese sequestration, changes in mixed phosphate and orthophosphate chemicals, changes in treatment pH goal or operating range; and change in free chlorine residual goal or operating range at the entry point to the distribution system.

The proposed LCRR does not clarify the level of state review needed for treatment changes and design criteria, and therefore there is a disconnect between the water system submitting information to the state for evaluation and review, and the state sending back information to the water system on what the state will require the water system to do. States and water systems need to understand the level of review and evaluation needed by the state as the water systems considers source or treatment changes and compiles information and documents for submittal, so that the state can make determinations for additional water system actions.

Additional guidance is needed for source or treatment changes when systems have multiple sources of supply or are regional providers, or consecutive systems, or other complex situations. Some questions (note that this is not a comprehensive list) that need answers in the final LCRR or guidance (as appropriate) include:

- When does bringing on a new source or well require re-evaluation?
- When are pipe loop/rig studies versus desktop studies needed?
- Do CCT studies need to include hydraulic modeling for consecutive systems?
- How does a downstream water system demonstrate how a change from the wholesaler or upstream water system will impact them?

- Will wholesalers and consecutive water systems both have to switch back to six-month monitoring after changes are made?

As stated above, all consecutive systems receiving water from a wholesaler with CCT should sample WQP at the consecutive connection or entry point into the distribution system at the same frequency as the wholesaler. These samples would help the consecutive system determine whether or not there is a problem with the treatment change that the wholesaler made.

Minimum Tap Sampling Frequency Following a Source or Treatment Change

EPA requests comment on whether the regulation should specify a minimum tap sampling frequency of once every six months or once per year following the source water change or significant treatment change.

Recommendation: ASDWA recommends that the final LCRR:

- Specify a minimum of two rounds of six-month sampling following a source water or significant treatment change that affects the WQPs or was significant enough to require a CCT study.
- Clarify that monitoring frequency is dependent on how significant the change is and whether a CCT study is required.

EPA should provide guidance on the types of source or treatment changes that would *not* require additional monitoring or additional study. As previously recommended, the requested guidance should provide information on the types of changes and treatments that would trigger additional monitoring to help the water system understand the impacts of the source or treatment changes and help the state make determinations for additional water system monitoring frequency requirements, if needed.

State Flexibility to Require Additional Water System Information and Actions for Source or Treatment Changes

Recommendation: ASDWA recommends that the final LCRR provide flexibility so that "the state may require additional information from and actions by the water system such as submitting plans and specifications; WQPs; a follow-up corrosion control study and report; changing treatment; additional monitoring; and any other applicable requirements, to be determined by the state."

Some state drinking water programs cannot be more stringent than Federal regulations and/or may adopt rules by reference. As previously discussed, the language in the proposed LCRR limits the ability of some states to require additional information and actions from water systems that can help the state evaluate the water systems' circumstances and make determinations for appropriate actions when there are source or treatment changes. These changes, if not managed appropriately, can trigger lead "crises" and states want to be proactive as opposed to reactive.

Public Notification and Education

Education Materials to Homes with Unknown Service Lines

EPA requests comment on whether the Agency should require water systems to distribute education materials to homes with unknown service line types to inform them of the potential for

their line to be made of lead and the actions they can take to reduce their exposure to drinking water lead.

Recommendations: ASDWA recommends that the water systems provide education materials to homes and tenants of multi-unit buildings (e.g., apartments) if they have separate meters with unknown service line types. These materials should include information for customers on how they can determine if they have a lead service line (e.g., online resources and videos) and provide a mechanism to report the information to the water system, such as a website, phone call, or another reporting mechanism.

ASDWA supports the requirement for water systems to distribute educational materials to homes with unknown service lines. The scope of LSLR programs will require proactive discussions between water systems and their customers, and homeowners need to know that the composition of their service line is unknown and could possibly contain lead. Educating homeowners about unknown service line materials will enhance their potential for LSL inventory participation. Homeowner knowledge can also catalyze discussions with neighbors and others in the community, which can also enhance the holistic problem-solving capacity of the community of homeowners who may have similar plumbing materials.

Many resources are available on the internet for water systems to download and/or provide resources and links to homeowners to identify if they have lead service lines. Some examples of these include:

- AWWA video – "Together, Let's Get the Lead Out"
- Other YouTube videos on how to identify lead pipes
- Lead Service Line Collaborative website
- NPR's interactive tool

Additional resources and tools will likely be developed by national drinking water associations, technical assistance providers, and other stakeholders as LCRR implementation unfolds. Providing a broad range of education materials through various distribution channels to homes with unknown services lines is critical towards total LSL identification and replacement.

Outreach to State and Local Health Agencies

EPA requests comment on the appropriateness, frequency, and content of required outreach to State and local health agencies and whether the requirement should apply only to a subset of the country's community water systems.

Recommendation: ASDWA recommends that the outreach to state and local health agencies match the water system's monitoring frequency. More detailed information should be provided in the rule on how water systems should be conducting outreach to state and local health agencies. States should have the discretion to waive the water systems' responsibility to report to the state department of health.

ASDWA generally supports the requirement for outreach to state and local health agencies following a lead system-wide and individual home ALEs. However, if the primacy agency is the state health agency, then no additional regulatory requirements for state health outreach should

be included in the final LCRR. Both state and local health agencies will likely be valuable allies for any water system program focused on eliminating lead and reducing lead exposure. These agencies can offer more specific information on health-related impacts than the water system.

The annual outreach frequency is reasonable if the water system is conducting monitoring once per year or more frequently. However, if the water system sampling frequency is less frequent than annually, then the outreach provided to the health agencies should match a water system's LCR monitoring schedule (e.g., if conducting monitoring every three years) as additional notification to local health agencies will be confusing and will not provide any different information for them to share with their stakeholders. In the final LCRR, EPA should give specific guidelines for the method of the required outreach materials, as the intent of this collaboration is not clear, and additional information is needed to determine what types of outreach should occur. In the final LCRR, EPA should clarify whether the water system will be responsible for conducting outreach or if the state is responsible for ALE notifications with state and local health departments. ASDWA recommends that this outreach be the responsibility of the water system.

24-Hour Public Notification Requirement for CWS and Households

The AL of 15 µg/L in the current LCR is a measure of corrosion control in a distribution system based on the knowledge at the time. Since the AL and TL are not health-based numbers, ASDWA does not agree with EPA's conclusion that a lead ALE meets the definition of a Tier 1 violation or exceedance ''with potential to have serious adverse effects on human health as a result of short-term exposure,'' as described in section 2106 of the Water Infrastructure Improvements for the Nation Act (WIIN Act). Inclusion of an ALE as a violation category requiring a Tier 1 public notice in the final LCRR would fundamentally change the implementation of Tier 1 public notification (PN). ASDWA recommends that EPA classify lead ALEs as Tier II PN.

Recommendation: If EPA includes a regulatory requirement for Tier 1 violation for a lead ALE in the final LCRR, then ASDWA recommends that EPA revise the PN requirements in the final LCRR so that this process is more reasonable. The final LCRR should revise the proposed 24-hour PN requirements to allow for "one business day" for both system-wide and household public notifications to adhere to the intent of the WIIN Act and yet provide a small amount of flexibility to address issues with requirements for actions on weekends, which are "non-business days." The "one business day" requirement would only apply to the LCRR.

The final LCRR should also recognize the differences between household ALEs and system-wide ALEs:

- **Household ALEs***:* Water systems should provide their customers with educational materials at the time the tap sample is taken and tell them when the results are expected. When the water system receives the analytical results that result in an ALE, then the system should provide the consumer with the appropriate public notice, including the lead concentration in their sample and the water system's contact information in case the customer has additional questions. This makes the notice shorter, simpler, and more easily prepared in one business day, as previously recommended. The water system will

then have a follow-up discussion with the homeowner about the Sample Site Assessment as previously discussed.

- **System-wide ALEs:** The "one business day" public notice to water system customers for a system-wide ALE should be succinct and direct customers to public education materials, with more information on water system actions. Again, this allows for a simpler process during the "one business day". For system-wide ALEs, the final LCRR should allow water systems to use "Reverse 911" type autodial systems, media, and social media, or other method approved by the state to meet the 24-hour or "one business day" notification requirement. Providing for additional delivery methods for PN that include more electronic and rapid response methods will increase the probability that notification will be timely.

The final LCRR should recognize that it is both problematic and logistically very difficult to require Tier 1 PN for system-wide ALEs and 24-hour notice for household ALEs. Tier 1 notices are typically reserved for acute public health issues, such as bacterial contamination or a treatment failure for removing high-risk contaminants. The inclusion of lead in the proposed LCRR in the immediate acute health risk category is unwarranted, especially given the proposed LCRR is not suggesting a health-based limit and is relying on both the AL and TL for regulatory requirements.

This requirement will be especially problematic for small water systems that do not have staff on duty 24 hours a day for seven days a week and may have a skeleton staff at best during normal working hours. The urgency for the Tier 1 PN for water system ALE is unnecessary because there is a time delay of several weeks (in some cases) between the time the samples are taken and sent to the laboratory, and when the results are received. This is even more complicated after ALE calculations, where the system may be waiting months for the final samples to be analyzed. This requirement creates a problem with public perception, where customers have been exposed to high levels of lead during the time period (of several weeks or even months) since the sample was taken, and also significantly increases the state's burden if they have to issue multiple ALEs all at the same time (at the end of the monitoring period). Tier 1 PN is also inconsistent with the proposed LCRR requirement to conduct complex and lengthy CCT re-optimization studies.

Recommendation: If the final LCRR maintains a lead ALE as a Tier 1 PN, ASDWA recommends EPA provide guidance on the language for a Tier 1 PN for a lead ALE.

Components of a Tier 1 PN do not necessarily apply to a lead ALE. For example, the required instructions to consumers, typically "Boil Your Water" or "Do Not Drink the Water", do not apply in the case of a lead ALE. Because the ALE is not a health-based standard, EPA needs to clarify what a consumer action would be. Additionally, because the calculation of the 90^{th} percentile for lead samples occurs after the laboratories have submitted all lead sample results to the state, which is weeks if not months after the samples were actually collected, notifying consumers of the exceedance and actions to take long after the sampling occurred will likely cause confusion. EPA should provide specific language for water systems to use in the PNs to explain the circumstances and mitigate this confusion. Additional confusion for consumers could be created by PN and public education materials being disseminated on different timelines.

PUBLIC NOTIFICATION (PN) – COPY OF TIER 1 NOTIFICATION TO STATE AND EPA

Recommendation: If the final LCRR maintains a lead ALE as a Tier 1 PN, ASDWA recommends the final LCRR:

- Allow water systems to provide copy of the Tier 1 notice to the EPA Administrator and states through an email or fax, noting that electronic notification has implications under EPA's Cross-Media Electronic Report Rule (CROMERR).
- Clarify how water systems are to provide certification of notifications to the EPA Administrator to ensure that even small systems can meet the requirements.
- Confirm that states are not required to track whether water systems have sent certifications of notification to EPA.

The proposed LCRR requires public water systems must provide a copy of any Tier 1 PN to the EPA Administrator and state no later than 24 hours after the public water system makes the 90th percentile calculation and learns of the violation or exceedance, or after the state makes the 90th percentile calculation. The proposed rule lacks clarity on how water systems should provide a copy of the Tier 1 PN to the state and EPA. Water systems are not normally in direct contact with EPA, even at the Regional Office level. Their contact on drinking water regulatory issues is typically with their state. Many unintentional violations may result from water systems navigating the challenges of this unfamiliar communication path.

The 24-hour timeline for notification to states and EPA will be difficult to track. ASDWA recommends that the final LCRR allow emails to be acceptable for receiving the copy of the Tier 1 notice. In addition, states should not be responsible for tracking whether water systems have sent notification to EPA. This would be very difficult for states to track and it is not an appropriate role for them.

REQUIREMENTS FOR "CONSUMER" AND "CUSTOMER" NOTIFICATIONS

Recommendation: ASDWA recommends that in the final LCRR, EPA should clarify and use consistent terms to describe the requirements for "consumer" and "customer" notifications. Additionally, ASDWA recommends that EPA provide guidance on implementation, particularly for notifications to transient populations such as hotel guests or restaurant patrons.

Many people consume the water provided by a water system, however, their relationship to the water system and what they can and should do to protect themselves from lead is different as compared to a resident served by the water system. A homeowner, who can remove a lead service line and/or lead plumbing, has a different capability from a customer in an apartment building or an occasional consumer in a hotel or restaurant. As such, the water system's interaction with these consumers needs to be different and the rule should accurately reflect who the target audience is for water system actions. The final LCRR should include consistent terms for consumer versus customer public education and notification for LSLs for households or for multiple-unit customers of the water system.

REQUIRED OUTREACH ACTIVITIES IF CWS DOES NOT MEET LSLR RATES

- *EPA requests comment on the appropriateness of required outreach activities a water system would conduct if they do not meet the goal LSLR rate in response to a trigger level exceedance.*

- *EPA also requests comments on other actions or additional outreach efforts water systems could take to meet their LSLR goal rate.*

Recommendation: As proposed, if a system does not meet the LSLR goals, additional outreach components should be required in the final LCRR. ASDWA recommends that the water system should use the most appropriate method(s), such as phone calls or door hangers, plus one of the other communication channels such as newspaper, television, or radio. Using social media or relying on communication through third parties like plumber associations can be effective supplemental methods for educating the public but they should not be the sole method, as these individual methods may not necessarily reach the affected population that needs the information.

Communication Issues With 3Ts vs. Action Level and Trigger Level Thresholds

Recommendation: ASDWA recommends that prior to conducting sampling at schools and child care facilities, water system should be required to send a notice of intent to perform sampling and provide the facilities with the 3Ts guidance or a subsequent EPA guidance, with information about the health effects and sources of lead in drinking water.

This notice should also include referring the schools and child care facilities to EPA's 3Ts website for templates, education materials, and interpreting results from samples. EPA should engage with the US Department of Education, the US Department of Health and Human Services (HHS) and other education associations in a joint 3Ts education effort that includes working with state and local education and health agencies to provide more guidance and assistance, with options and additional funding for remediation, as there is a strong possibility that an individual school or child care facility may not be able to fix the problem with their own resources.

ASDWA recommends that schools and child care facilities have the responsibility to conduct communication activities and take remedial actions for ALEs and TLEs. These communications activities should be the responsibility of the school, not the water system, but should use health language from state or federal agencies. This responsibility of the water systems should include providing schools with information and guidance in advance of conducting sampling to ensure that schools and child care facilities are aware of the health risks, sampling requirements, and what can be done to remediate lead in drinking water.

Additional coordination is needed between EPA, the US Department of Education, HHS, and education associations to conduct an extensive and effective educational effort, in conjunction with state and local education and health agencies, that ensures school or child care facilities have the information and resources they need to address lead in drinking water. Support from other agencies will help ensure a strong commitment to remediating lead in drinking water at schools and child care facilities that can have potential long-lasting impacts to children's health.

Small System Flexibility

The EPA is proposing that small system flexibilities be allowed for CWSs serving 10,000 or fewer persons and all NTNCWS. The EPA requests comment on whether this flexibility is needed by systems serving between 3,301 and 10,000 persons and whether a different threshold is more appropriate. EPA requests comment on whether different flexibilities would be more appropriate

for small systems whether defined as water systems serving 10,000 or fewer persons or 3,300 or fewer persons.

ASDWA generally supports the concept of flexible options for small systems proposed in the LCRR, as many small systems face technical, financial, and managerial (TFM) challenges. While having more than one compliance option for small systems provides flexibility for those systems to ultimately achieve compliance, these additional compliance options increase the tracking burden for states.

However, ASDWA also supports the option of small systems implementing CCT. Allowing a small system to operate without CCT while implementing an LSLR plan, could potentially result in taking many years to replace all the LSLs, while in the meantime implementing a Tier 1 Public Notice for a continuing lead ALE. It is recommended that a small system be asked to implement CCT. In addition, requiring that a small system provide CCT would protect against situations where an exceedance is caused by appurtenances such as lead goosenecks, pigtails, and connectors, or indoor plumbing.

Small System Size Thresholds

Recommendation: ASDWA recommends that the threshold for small system flexibilities apply to systems serving 3,300 persons or fewer. ASDWA recommends that the 3,300-person threshold for small systems be included in the final LCRR, as this will allow for consistency across other rules.

Additionally, ASDWA recommends that the compliance option using point-of-use devices (POU) apply only to very small systems serving 250 or fewer persons and the final LCRR should include language stating that while POU devices are an option, POUs are not always a viable compliance option in many situations. Implementing the POU flexibility would likely be much more intensive for states and water systems than what is stated in the proposed LCRR. This option may seem like an economical alternative; however, several states have seen the POU compliance option be more expensive than other alternatives when factoring in device approval, operation, perpetual maintenance, monitoring and testing. The POU compliance option also requires 100% participation from the community, which is difficult to attain and maintain in perpetuity in most communities and will likely not be possible in systems serving more than 250 persons. The installation of POU devices often requires overtime work after hours to gain access to the customer's homes and the tracking of these devices and their monitoring results in addition to the maintenance becomes increasingly difficult as more POU devices are installed.

POU devices should remain as a compliance option in very limited cases, as some states have seen success using this alternative, while other states have not had the same success. Success has been limited to the very small systems and restricting POUs to systems serving 250 persons or less is a more reasonable approach than offering the option to systems serving 3,300 people. Additionally, the final LCRR should clearly state that the POU option is not always a suitable option, and there are multiple factors that can make this compliance option expensive and resource intensive.

Flexibilities that Conflict with State Restrictions

Recommendation: ASDWA recommends that EPA develop clear language in the final LCRR on how small system flexibilities will apply to states that have specific restrictions or regulations against the use of some of these alternatives, such as POU devices, and that states will be able to maintain these restrictions.

Certain states have restrictions on the use of POU devices, such as, only systems with 100 connections or less may use the POU compliance option. Some states also have rules entirely prohibiting the use of the POU compliance option. Reasons why some states restrict their use vary state to state but include the difficulties of tracking the installation, maintenance, and ongoing testing of POUs as previously discussed. In the final LCRR, EPA needs to include plain language that although these options may be used for compliance, states maintain their authority and may adopt or decline to adopt these compliance options.

Lead-Bearing Plumbing Replacement Option for Community Water Systems

Recommendation: ASDWA recommends the Lead-Bearing Plumbing Replacement option currently reserved for Non-Transient Non-Community Water Systems (NTNCWS) should be included in the final LCRR as a compliance option for Community Water Systems (CWS) and that the use of this option be at a state's discretion. This option should also apply to copper as well. The current one-year timeline in the proposal for this option should also be increased to three years. If EPA includes this option in the final LCRR, detailed guidance must be provided on how this will be implemented, including how to address when plumbing replacement is not successful.

The Lead-Bearing Plumbing Replacement option may be beneficial for very small, disadvantaged communities that would rather replace fixtures and plumbing than commit resources to maintaining POU devices in perpetuity. Several states have seen success with small systems using a similar approach to replace copper plumbing and fixtures.

The one-year timeline in the proposal for replacement of lead-bearing plumbing is too short for states to implement successfully. States can have some large NTNCWS, such as industrial facilities, sports venues, and military bases, among others, and completing replacement of lead-bearing plumbing within this short timeline would be incredibly challenging. Giving states the longer timeline and the authority to adopt this fourth option for small CWS would be the ideal regulatory approach to addressing lead-bearing plumbing.

Timeline for Trigger Level Action Plan

Recommendation: The proposed LCRR requires small systems and NTNCWS that exceed the TL to develop an action plan to submit to the state within six months, and states then have six months to approve that plan. Additionally, EPA should add language in the final LCRR that encourages systems work with their state from the initial plan development.

In the final LCRR, EPA should encourage systems to work with states in the initial development of their compliance alternative plan. Including this language empowers states to help systems develop a realistic individual plan rather than requiring them to spend limited resources reviewing a larger plan they are unfamiliar with and/or making an alternative suggestion based

on their own review of the system. Involving the state early on will streamline the process and reduce time wasted developing nonviable alternatives. The guidance should include a framework under which the development of the alternative plan can occur. A formulaic and uniform approach is necessary otherwise state resources will be wasted on one-off approaches.

Maintaining CCT Once in Place

Recommendation: ASDWA recommends that EPA reference language from §141.81 again in the "Lead Action Level Exceedance for Small Community Water Systems and Non-Transient, Non-Community Water Systems" section emphasizing that small systems using the small system options under §141.93 and those which have treatment in place continue to operate and maintain optimal corrosion control treatment and meet any requirements that the state determines to be appropriate to ensure optimal corrosion control treatment is maintained.

While the flexibilities in the proposal and those recommended here give systems more alternatives to reduce lead exposure, small systems currently using CCT should not abandon those practices without approval from their state. This will prevent systems from undermining their lead reduction efforts with CCT by moving to an alternative technique too quickly.

Lead Testing in Schools and Child Care Facilities

Mandatory vs. Voluntary ("Upon Request") Sampling in Schools and Child Care Facilities

EPA requests comment on whether it should revise the rule to require community water systems (CWSs) to offer to collect samples from schools and child care facilities every five years or to collect samples from a school or child care facility only if requested. The CWS would still be required to provide the schools and child care facilities information on the health effects of sources of lead in drinking water, and the 3Ts guidance. Under this approach, CWS would be able to respond to request for sampling in a way that allows the water system to spread out the cost burden over multiple years (I.e., delay fulfillment of requests to future years) if the water system samples at a minimum of five percent of schools and child care facilities each year. Additionally, a facility could decline this offer. The EPA has included an analysis of the costs and benefits of this option in section VI of this notice and Chapter 9 of the Economic Analysis of the Proposed Lead and Copper Rule Revisions.

As detailed in the LCRR preamble (pg. 61685), the United States has made tremendous progress in lowering children's blood levels – the median blood lead level in children aged one to five has dropped from 15 micrograms per deciliter in 1976-1980 to 0.7 micrograms per deciliter in 2013-2014. But more work is needed to continue to further reduce blood lead levels in children. At least 11 states had adopted state-level testing requirements for schools and/or child care facilities.

ASDWA generally supports the concept of lead testing in schools and child care facilities, however, the LCRR is not the appropriate place for such a regulatory requirement. State educational agencies and child care licensing departments are better equipped to implement lead testing programs because they are in contact with the schools and child care facilities on a more regular basis, and the school and child care facilities are ultimately responsible for providing a safe environment for their students. However, if EPA does decide to include a lead testing

program in schools and child care facilities in the final LCRR, ASDWA offers the following recommendations to make the final rule more manageable for water systems and states.

Recommendation: ASDWA recommends that, in those states that have not adopted lead testing requirements, community water systems (CWSs) be required to have an "upon request" (see Section 9.2 of EPA's Economic Analysis for the proposed LCRR) sampling program for lead testing in schools and licensed child care facilities (CCFs). The final LCRR should contain regulatory requirements for water systems to have an "upon request" sampling program with the following elements:

- Within three years, develop an inventory of schools (public and private) and licensed child care facilities in their service area and update the inventory every three years;
- Mail a notice of the availability of free lead testing to each facility in the above inventory annually for the first five years, and thereafter, continuing mailings to match the system's compliance monitoring period for tap sampling;
- For those facilities that request lead testing, send sampling kits with sampling instructions (first draw – 250 mL at a representative number [see below for ASDWA's recommendation on developing guidance on how to determine a representative number] of fixtures) to each facility;
    - Water systems should have the option to conduct the sampling depending on local circumstances (a small system with a limited number of facilities in their service area);
- If a school district wants to sample at all schools, water systems will be responsible for sending sampling kits and providing analyses for 20% of schools annually – similar requirements for all the licensed child care facilities in their service area. If more requests are received, the water systems should have the flexibility to develop a schedule for testing 20% of the schools and child care facilities annually.
- Provide EPA's current 3Ts guidance to each facility at the same time as the sampling kits
- Conduct the analyses for lead and copper and report the results to the facilities and the local/county health department within ten business days after the analyses are completed;
    - States have the option to have the results reported to them;
- Submit an annual report to the state on the program that includes:
    - Number of facilities contacted via mail;
    - Number of facilities that requested the testing; and
    - Summary of the all sampling results.
- Ongoing lead testing in programs in schools (i.e., the WIIN grants and other ongoing lead testing programs) and/or licensed child care facilities can be grandfathered.

The regulatory requirements in the proposed LCRR are problematic for states and for water systems. The proposed regulatory requirements place a significant burden on water systems and states that can be reduced with an "upon request" sampling program. Regulatory requirements in the drinking water programs for testing in schools, as opposed to the Departments of Education and agencies regulating child care facilities, is problematic. Any sampling burden placed on very small systems falls back to the states due to the extensive technical assistance required.

Additionally, at least seven states (Arkansas, Delaware, Louisiana, Mississippi, Missouri, North Dakota, and South Carolina) conduct compliance monitoring with all drinking water regulations.

The proposed regulatory requirements for additional testing in schools and child care facilities could further increase the already significant burden from the proposed LCRR. Some flexibility will be needed in the final LCRR (along with increased funding) for those states that will be conducting this testing.

Additional flexibility in the final LCRR should be provided for states with existing lead testing requirements to demonstrate equivalency and to allow for data collection and management by other agencies such as the state Department of Education and agencies regulating child care facilities. Additional flexibility should also be provided for states that want to collect all the lead testing data from schools and child care facilities and have it all in one place, i.e., on a website. Additional flexibility in the final LCRR should allow the states to determine that lead testing for schools and child care facilities in a system's service area is complete, i.e., the testing program for lead testing in schools and child care facilities doesn't need to continue in perpetuity.

Recommendation: ASDWA recommends that EPA change the proposed definition of school(s) in the final LCRR.

The proposed rule states, "school for the purpose of subpart I of this part only means any public, private, charter or other location that provides student learning for elementary or secondary students." ASDWA recommends removing the phrase "or other location" from this definition. As written, it could be broadly interpreted to include locations for one-on-one tutoring and other locations that are not appropriate for consideration as a school.

Need for Additional Guidance

Recommendation: ASDWA recommends that EPA partner with ASDWA to develop additional guidance for lead testing in schools and child care facilities.

ASDWA commends EPA for updating its 3Ts guidance in 2018, as the 2006 version needed to be updated given the evolution of knowledge on lead testing (and remediation) in schools and child care facilities. That evolution of knowledge has continued into 2019 and 2020 with additional states developing their own programs for lead testing in schools and child care facilities, and the beginning of additional funding going to states and the District of Columbia through the WIIN grants.

The additional knowledge states have developed on testing protocols, assisting facilities on several issues such as determining a representative number of fixtures, remediation actions, and risk communications needs to be compiled into additional guidance in a timely manner. ASDWA is willing to provide coordination and technical assistance for such a partnership on this additional guidance. Fifteen states plus Washington, D.C. have ongoing lead testing programs for schools and eleven states requiring testing for child care facilities, and case studies could be compiled to assist the balance as part of LCRR implementation.

Additional educational materials beyond the updated 3Ts guidance is needed to provide facility managers at schools and child care facilities the appropriate guidance for actions based on the lead testing results. At this time, it's not clear how actions will be taken by the schools and child care facilities without some numerical guidelines or categories or some clarification on potential

alternative actions to consider (and how to evaluate the different actions) based on the sampling results. These educational materials would need to be distributed to a broader audience than EPA's drinking water stakeholders, such as state Departments of Education, local school districts and national school and child care associations such as the Association of School Business Officials, AASA - The School Superintendents Association, and the National School Board Association.

SDWIS Data and Tracking

The importance of considering data management throughout the rule development process is critical to the long-term sustainability and effective implementation of the national drinking water program. In its *Drinking Water Data Reliability Analysis and Action Plan* (EPA 816-R-07-010, pg. 37), EPA states:

> *"Data management concerns should be considered during every phase of the rule development process, beginning with the initial rule concept. If this does not occur, rules with complex reporting requirements may emerge, overwhelming the capability of states to implement them and shifting valuable resources from taking actions on real health needs to reporting".*

Historically, EPA considers data management needs after rule promulgation, but this approach will not work for the LCRR given its inherent complexities and the early implementation timelines. While data management requirements should never drive regulatory development, a failure to consider the complexity of modifying data systems to track new regulatory requirements can have a significant impact on states' ability to implement the rule and meet compliance deadlines, in addition to upending established business processes. The final LCRR must be clear on what constitutes violations, what the state is required to track, the level of detail for tracking by the state, what is reported to EPA and how often, etc. Those requirements need to clear in the final LCRR to drive the requirements for the data system.

With respect to the halted development status of SDWIS Prime, which was slated to replace the aging SDWIS and was assumed to have been capable of managing the LCRR, states are concerned that they may not have the tools necessary to effectively implement the new provisions. The lack of an adequate data system capable of managing the information required to implement the proposed rule may force states to employ supplementary systems. Some states who have initiated lead service line inventories, for example, currently manage this data outside of SDWIS. Other states use an external database to track data when the functionality to do so is not present in SDWIS - for example, tracking levels other than MCLs, or running compliance for scheduled activities without an associated violation code. Here, the concern is the potential for reductions in data quality, inefficiencies of using fractured data systems, and, again, deviations in implementation practices.

The development and implementation of the Safe Drinking Water Information System (SDWIS) over the past decade has seen its share of peaks and valleys, not unlike other complex data systems. However, successful implementation of the final LCRR is depending on a robust and reliable data management system. A clear path forward for SDWIS modernization, including capabilities for LCRR implementation (and potential early implementation actions) needs to be developed in coordination with the states as soon as possible.

SDWIS

Recommendation: ASDWA recommends that:

- EPA conduct a robust evaluation of SDWISs capability to manage the final LCRR within six months of the publication of the final LCRR or communicate plans to develop a supporting module in advance of the implementation date.
    - Additionally, within six months of the publication of the rule, EPA should communicate to states the schedule for planned upgrades to impacted systems that will be modified to comply with new reporting and recordkeeping requirements under the final LCRR.

Additionally, ASDWA recommends that EPA commit to continued support for SDWIS/State, beyond planned security patches, until a new strategic approach to SDWIS modernization is vetted by the SDWIS Governance Board and development is completed. Most states rely on SDWIS/State for compliance determinations and reporting, storing public water system facility data, tracking monitoring schedules, and keeping the public informed of the quality of their drinking water. The current software is fast approaching End-of-Life (EoL), leading to a growing number of security concerns and further requiring that states employ workarounds to perform necessary business functions, including implementation of the current LCR. Potentially relying on state-level workarounds for the final LCRR is untenable for successful LCRR implementation. With respect to these concerns, states are unsure how to manage new provisions in the final LCRR considering the SDWIS/State's constraints.

For example, the proposed TL (which ASDWA supports) will ensure water systems are taking progressive actions to protect the public from elevated drinking water lead levels, however, states have expressed concerns over SDWIS/State's ability to track these two different levels for lead, as the software lacks this functionality. SDWIS' ability to correctly differentiate TL and AL compliance from the required number of compliance samples would greatly streamline reporting.

Additional recordkeeping and reporting requirements under the LCRR, while critical to the efficacy of the rule and supported by states, are not currently supported by SDWIS and will require further system modifications, such as, but not limited to:

- Tracking LSL inventories and updated compliance sampling plans;
- Tracking LSLR programs and LSLR progress over time;
- Tracking CCT studies, their status of completion, and validity over time; and
- Tracking PN and other public education.

States question SDWIS/State's ability to handle the complexities of these new provisions even with workarounds. To that point, states should not need to rely on patchwork processes in their implementation. This will lead to confusion, a lack of uniformity in implementation practices, and a high potential for duplication of effort to modify data systems and re-train users once an official rule module or guidance is released.

Economic Analysis

Recommendation: ASDWA recommends that EPA build all necessary functionality to manage the final LCRR into SDWIS to reduce the state's need to track required data manually, or outside of SDWIS; lessening the burden imposed on these programs.

Noting the concerns outlined above, states question some of the assumptions in EPA's economic analysis for data management. Specifically, that they will bear the cost burdens associated with modifying impacted data systems and without contract support. Most states using SDWIS/State are unable to make in-house modifications to their data systems due to several factors, including state-imposed restrictions on state staff on developing and modifying data systems and lack of IT capacity in the drinking water program. Beyond reductions to in-house IT expertise, many states are experiencing consolidations of IT resources at the department level that greatly increase timelines and costs associated with modifications to impacted systems.

Interfacing applications, which states rely on to expand the functionality of their data systems, including SDWIS, present additional challenges as some of these component applications are developed, deployed, and maintained by third party vendors. For example, a state might use an interfacing application to generate CCR templates or present a public view of SDWIS data to increase transparency. Changes to PN in the LCRR will therefore necessitate modifications to these applications that will require coordination with a contractor and, potentially, centralized IT staff outside of the drinking water program.

Apart from concerns with the availability and expense of IT resources, states have limited program staff resources to commit to managing the new rule. Many have only one rule manager and expect the new workload associated with the LCRR to strain the program's already limited resources.

ESTIMATES FOR STATES TO MODIFY EXISTING DATA SYSTEMS

Recommendation: ASDWA recommends that EPA provide additional context for the cost estimation for modifying data systems, including, as previously recommended, plans to develop a supporting module for SDWIS in advance of the implementation date.

The lack of certainty over EPA's plans to modify SDWIS to manage the LCRR only deepen state concerns. The "Derivation of Administrative Burden and Costs" spreadsheet for the proposed LCRR accounts for 520 staff hours per state to modify existing data systems in-house and without factoring the need for contract support. It remains unclear if this cost estimate is based on EPA first making modifications to SDWIS, with the remaining 520 staff hours accounting for additional modifications to interfacing applications at the state. If states are, indeed, expected to incur these costs, the estimates in the proposed LCRR appear to be significantly on the low side.

If EPA has no plans or is unable to modify impacted data systems, EPA should increase the cost estimate for state system modifications to 2080 hours at a labor rate of $57.24, totaling $119,059. These numbers would be in line with estimates for past rules, like the Groundwater Rule (GWR), and closer to anticipated costs. In this case, there is a need to increase the PWSS grant, or offer alternative funding sources, so states can effectively manage the database support needed for the increased rule burden.

Again, ASDWA recommends that EPA make the necessary modifications to impacted data systems to reduce the burden imposed on states and, moreover, to ensure the effective and timely implementation of the final LCRR.

Rule Guidance, Documentation, and Training

Recommendation: ASDWA recommends that EPA should, within six months of the publication of the rule, provide to states appropriate documentation including rule implementation guidance and Data Entry Instructions. ASDWA also recommends scheduling training for states on effective data management strategies for implementing the final LCRR, including the use of existing or newly developed functionality in SDWIS for managing the rule.

Rule guidance is another element critical to the success of implementation. The final LCRR constitutes a major change to a long-established rule. States will need adequate guidance to implement the rule effectively and consistently. Gradually issuing guidance documents after the rule is published or after the effective date, as has been done with past rules, is challenging at best, and more often, creates significant implementation problems. Previously in these comments, ASDWA has listed several guidance documents that need to be developed as soon as possible. Adequate guidance must be available in advance of the implementation of the rule so states can establish their plans and train water systems. Additionally, Data Entry Instructions must be released in a timely manner to assist states with planning necessary modifications to their own data systems, especially for those who are not using SDWIS/State. States need detailed technical documentation that outlines the data elements and format that EPA expects, so they can adjust their systems to meet the Federal requirements.

Given the timing of the rule and to the concerns noted above, ASDWA recommends that a LCRR data management partnership be established as soon as possible, as states will need EPA's expertise and resources to properly protect public health from lead in drinking water. To that end, it is essential that the necessary modifications to impacted data systems be made prior to the effective date of the rule, and early enough to allow states time to adjust their business processes to accommodate the new provisions and train their staff on any changes made to their internal systems.

Economic Analysis and Burden

EPA requests comment on all aspects of the analysis for this rule. The agency offers a fulsome discussion on assumptions, models and related uncertainties in the regulatory impact analysis. In particular, the EPA requests comment on the five drivers of costs identified including rate of LSLR in its economic analysis. EPA requests comments on whether this estimated rate of lead service lines being replaced is appropriate.

a. *The existing number of LSLs in PWSs;*
b. *The number of PWS above the AL or TL under the current and proposed monitoring requirements;*
c. *The cost of installing and optimizing corrosion control treatment (CCT);*
d. *The effectiveness of CCT in mitigating lead concentrations; and*
e. *The cost of lead service line replacement, cost of CCT, effectiveness of CCT.*

ASDWA, as part of its LCRR comments, has updated its 2018 Cost of States' Transactions Study (CoSTS) based on the proposed LCRR. The updated study is attached as Appendix A. Regulatory changes in the proposed LCRR will lead to additional actions by the states – from tracking what is submitted, to reviewing for accuracy, to helping systems revise incorrect

submissions, to training and technical assistance, to compliance and enforcement. Additionally, any new drinking water regulation has a "start-up" phase for the first few years that includes developing and adopting the state-level regulation that is at least as stringent as the federal regulation, revising the data management system and associated operating procedures, providing training and technical assistance to the water systems, and providing training to state staff on the requirements of the regulation. The updated CoSTS model estimated the national total for states to implement the LCRR in its first five years to be approximately additional 835,000 staff hours annually, over and above the ongoing implementation of the current LCR. The additional staff hours are a factor of 12 greater than the annual hours for ongoing LCR implementation.

This is a significant increase for a single rule. This increase is in addition to all the other SDWA implementation activities (in addition to the 91 regulated contaminants) such as programs for operator certification, capacity development, source water protection, and the drinking water state revolving fund (DWSRF); sanitary surveys; technical assistance to water systems; compliance and enforcement; plan review and approval; data management and reporting; and other programmatic activities.

The potential fiscal impacts to states drinking water programs can be shown by comparing the estimated staff hours from above to the current levels of Federal funding from the Public Water Supply Supervision (PWSS) program. Using the national average loaded hourly rate for state employees of $58.67 (salary plus benefits and overhead), full implementation of the proposed LCRR would cost the states $50 million annually, and $43 million annually based on ASDWA's recommendations. With 91 contaminants regulated under the SDWA, states have struggled with meeting both the regulatory requirements and additional actions to address non-regulated contaminants such as cyanotoxins and per- and polyfluoroalkyl substances (PFAS) over the past decade due to flat PWSS funding at $101.9 million. While the FY20 increase of 4.2% to PWSS funding (to $106.25 million) was a small step to closing the funding gap, the proposed LCRR would take 47% of PWSS funding to fully implement. States will have to make tough decisions about how to prioritize support to existing programs to implement the requirements of the final LCRR.

Recommendation: ASDWA recommends that EPA consider this updated model and the significantly increased burden for states in the final LCRR. Many states will not have the resources or manpower to implement and track the regulatory changes offered in the LCRR because the staffing level is controlled by funding levels and other factors, independent of the level of effort and the work required by EPA. States will have to make tough decisions about how to prioritize support to existing programs and what they can forego to accomplish what's required in the final LCRR.

The detailed spreadsheets in the updated CoSTS model break down the LCRR into eight categories to calculate the number of workload hours in the proposal. These categories include:

- Regulatory Start-up
- Lead Service Line Inventory and Replacement (LSLR)
- Tap Sampling
- Trigger Level (TL)
- Corrosion Control Treatment (CCT)

- Sample Site Assessment
- Public Notification and Education
- Lead Testing in Schools and Child Care Facilities

The summary of total hours for each of these eight categories can be found in **Table 1.** These hours were calculated using ASDWA's previous CoSTS model from 2018 and updating that model with inputs from states after reviewing the proposed LCRR. All calculations were rounded to whole numbers.

Table 2 contains the total of all hours held in **Table 1**, and the hours estimated for the current LCR in 2018. The hours for the current LCR were multiplied by five because this model assumes five years is an appropriate timeframe for the first cycle of states and systems to adopt and comply with the LCRR. Additionally, **Table 2** includes the increased hours from the proposed LCRR, and the amount of annual increased hours. Increased hours were calculated by subtracting Current LCR Hours from Total LCRR Hours, and Annual Increased hours was calculated by dividing Increased Hours from LCRR by five (for five years).

Table 2. LCRR Primacy Agency

	Hours
Total LCRR Hours	4,557,889
Current LCR Hours (multiplied by 5 years)	380,830
Increased Hours from LCRR	4,177,059
Annual Increased Hours	835,412

Within the eight categories used for the proposed LCRR, the information is further broken down by system size, type, and number of systems. System numbers, size, and type used in the model were downloaded from SDWIS on November 8, 2019.

State staff assisted in the development of a breakdown for the categories within these tabs that

Table 1. LCRR Primacy Agency Hours by Category

Category	Hours
Regulatory Start-up	582,100
Lead Service Line Inventory and Replacement	1,174,898
Tap Sampling	1,232,103
Trigger Level	147,526
Corrosion Control Treatment	476,961
Sample Site Assessment	154,449
Public Notification and Education	354,395
Lead Testing in Schools	435,458

includes:

- **Tracking** any inventory or plan developed by a water system or their consultant would have to be tracked in the state's data management systems;
- **Reviewing** the inventories and plans;
- **Following-up** with those systems whose submission isn't quite correct;

- **Reporting** the results of each of the regulatory activities in each category to the state's data management system, and ultimately, to EPA;
- **Violations** for a certain percentage that either can't quite get their submissions correct or miss the submission deadlines;
    - **Returning those systems to compliance** through a combination of training, technical assistance, compliance and enforcement; and
- Some **periodic re-evaluation** of the inventories and/or plans based on changing circumstances.

The Regulatory Start-up tab includes calculations for hours on the adoption of the LCRR, system training and technical assistance, state staff training, and modifications to the state data management system. State data management information was difficult to quantify given the current state of SDWIS Prime and uncertainty if EPA will provide an update to SDWIS/State. ASDWA's continues to emphasize the need for a robust and reliable data management for the final LCRR, as states are very concerned about how to track the multitude of transactions required in the LCRR. Using numbers from the Revised Total Coliform Rule (RTCR), ASDWA estimated modifications to the state data management system to be 3,700 hours per primacy agency. A few states also gave an estimate of $150,000 for contracting work on data management system modifications to track LCRR.

The TL tab assumes states use the latest two rounds of LCR Compliance Monitoring to determine systems above the TL. This tab uses Exhibit 4-22 in EPA's Economic Analysis to determine the estimate of systems above the TL and using this information 19% of systems are estimated to be above the TL. It's important to note that the number of systems here likely will increase as LSL inventories are completed and compliance monitoring locations are revised.

The Tap Sampling tab calculated the highest number of hours or burden for state primacy agencies. To calculate this burden, this tab uses Exhibit 5-28 in EPA's Economic Analysis to assume that more tap sampling will be reflected in more time spent reviewing, and that review time decreases with system size. Review in this tab includes time states will spend ensuring systems used accurate sample sites, following the new protocol for providing instructions, and making results available within 60 days. The categories are broken down into time spent reviewing monitoring data and reviewing compliance monitoring plans based on LSL inventories for systems with or without LSLs. It is important to note that there are seven states that collect, analyze, or pay for water system samples, so the language in the proposal about sampling can apply to states as well, and this needs to be made clear in the final rule.

The CCT tab uses Exhibit 4-22 in EPA's Economic Analysis to apply percentages of systems that will need to conduct a CCT study, reoptimize, or complete installation based on system size. This tab also includes the Small Systems Flexibilities detailed in the proposal. After collaborating with states, the state subgroup reviewing CoSTS agreed that 20% of small systems and NTNCWS in some states would utilize the flexibility options. The percentages of systems using each flexibility were based on subgroup input.

The Sample Site Assessment tab, under the subgroup's advisement, uses 30% as the number of systems that would undergo sample site assessments (proposed as "Find-and-Fix"). It should be

noted that this is one of the proposed LCRR components added into the model that will further increase state burden.

The LSL Inventory and Replacement tab assumed 30% of CWS will have LSLs based off the AWWA Cornwell Paper. The breakdown of systems with LSLs within each size category was determined based off state input. This tab has been separated by systems with or without LSLs. The percentages of NTNCWS with LSLs was identified using Exhibit 4-17 in EPA's Economic Analysis. This tab assumes that unknowns are added to systems without LSLs. Systems will likely find more LSLs than they report in the original inventory (estimate of 5%), and those amounts are added back to the total amount of systems with LSLs.

The Public Notification and Education tab organizes the information by assistance review for systems, transparency for systems with LSLs or sites above the AL, full public education/public notification for the ALE, and State WIIN Notifications. This tab assumes that all systems will need review and assistance for general outreach materials, and states will track certifications for delivery of lead results and annual outreach to local health agencies.

Lead Testing in Schools and Child Care Facilities is another new component in the proposed LCRR that will significantly increase state workload. This tab is broken into a flat number of hours estimated by the state subgroup multiplied by the number of states, and state interaction with the systems. The 1,000 hours per state includes ongoing conversations with systems on the number of licensed schools and daycares in their area, coordinating with other entities like the Department of Education and Department of Social Services, and providing updated state guidance.

With the increased workload and the additional hours for state staff from the LCRR, states could be facing tough choices for their drinking water program – what NOT to do given these new regulatory mandates. EPA must consider the significant increase in workload on resource constrained states in the final LCRR, and work towards simplifying the regulatory burden in the final LCRR.

Potential Impacts From the 2020 Drinking Water Infrastructure Needs Survey

As it relates to the additional cost of the proposed LCRR, there are significant concerns about the impact of the 2020 Drinking Water Infrastructure Needs Survey (DWINS) data collection to determine the allotment for the Drinking Water State Revolving Fund capitalization grant. EPA has indicated that states that do not have LSL inventory information available for data collection or do not have mandated LSLR programs will be impacted by the allotment calculation since only LSLR projects with determined cost estimates will be accepted. This combined with a shorter timeframe to collect DWINS data (9 months or less versus 12 months) will create a serious funding obstacle for states. A reduction in the allotment for a state due to the LSL count in DWINS coupled with the additional costs required to implement the LCRR will serve as a barrier for effective implementation of the LCRR and other SDWA requirements.

If the LCRR is finalized as proposed, additional federal funding will be required to assist primacy agencies and public water systems with the ensuing significant costs that will be

necessary to ensure compliance with the LCRR. The proposed LCRR would take 47% of the current PWSS funding to fully implement – for just one rule. States will have to make tough decisions about how to prioritize support to existing programs to accomplish what's required in the final LCRR. Systems and property owners will face significant costs for full LSLR. It will be imperative for Congress to provide new funding to offset the increased costs of implementing the LCRR if states allotments are reduced due to lack of LSL information available during data collection for the DWINS.

Appendix A

2020 Costs of States' Transactions Study (CoSTS)

Costs of States Transactions Study (CoSTS) for EPA's Proposed LCRR

Association of State Drinking Water Administrators (ASDWA)

2/6/20 Version

The summary below is based on the eight categories taken from EPA's Proposed LCRR

The total hours are estimated for the first five years of the LCRR

Five years is assumed to be an appropriate timeframe for the first cycle of states and systems adopting and complying with the LCRR

All totals are being shown as whole numbers

For the number of systems, this model uses data from SDWIS downloaded on 11/8/19

	Estimated staff hours from EPA proposal	Estimated staff hours ASDWA proposal	Estimated staff hours saved with revisions
Regulatory Start-Up	582,100	563,970	18,130
Lead Service Line Inventory and Replacment (LSLR)	1,174,898	990,708	184,190
Tap Sampling	1,232,103	1,232,103	-
Trigger Level (TL)	147,526	147,526	-
Corrosion Control Treatment (CCT)	476,961	481,977	(5,016)
Sample Site Assessment	154,449	96,581	57,868
Public Notification and Education	354,395	354,395	-
Lead Testing in Schools and Child Care Facilities	435,458	190,057	245,401
Totals	4,557,889	4,057,317	500,572
Current LCR Hours (2018)			
76,166 times 5 Years	380,830	380,830	
Increased Hours from LCRR (Total from first five years)	4,177,059	3,676,487	
Annual Increased Hours (Each year for the first five years)	835,412	735,297	

Regulatory Start-Up

Model Inputs
Model Outputs

Hours for each activity rounded up from Revised Total Coliform Rule (RCTR)

Adoption of Lead and Copper Rule Revisions (LCRR)

States	Hours Ea.	Total Hours
49	3,200	156,800

Modify State Data Management System

Unclear how the modernized SDWIS might accommodate LCRR and what state changes might be needed

States	Hours Ea.	Total Hours
49	3,700	181,300

System Training and Technical Assistance

States	Hours Ea.	Total Hours
49	4,000	196,000

State Staff Training

Assume three categories for training for state staff to properly trained on all components of LCRR

Lead service line inventories & replacement, corrosion control treatment, public education, sampling & simultaneous compliance

			Hours Ea.	Total Hours
	Large	9	2,000	18,000
	Medium	20	1,000	20,000
	Small	20	500	10,000
Not Wyoming or DC	Total	49		48,000

This total for state staff training is in the same range as what was estimated for the Revised Total Coliform Rule (RTCR)

Total Regulatory Start-Up	582,100

Lead Service Line (LSL) Inventories and Replacement Plans

Model Inputs
Model Outputs

	# of systems	NTNCWS	Systems with LSLs		Systems without LSLs		For NTNCWS Using Exhibit 4-17 2.5% assumption
Large systems >50,000	1,006	2	503	Complex LSL Inventories & LSLR Plans	503		0
Medium 3,301-50,000	8,349	197	4,175	Moderate LSL Inventories & LSLR Plans	4,175		5
Small 25-3,300	40,304	17352	10,076	Simpler LSL Inventories & LSLR Plans	30,228		434
Total number of systems	49,659		14,754	Total number of systems with LSLs	34,906	Total no. of systems without LSLs	

Initial tracking, review and follow-up for LSL inventories - complexity of inventories based on system size and whether system has LSLs or not
Assume all systems have to conduct an inventory to determine if they have LSLs or not
Assume review of systems with LSLs will take more time than systems that don't have LSLs
Assume 100% of LSL inventories would need to be re-evaluated annually.
Systems would find more LSLs than in original inventory or find a few LSLs in the system that were unknown initially
Assumes large NTNCWS are not included due to less than 1 being reported for having LSLs based off Exhibit 4-17 in EPA's Economic Analysis
Assumes 30% of all CWSs will have LSLs - 50% of large and medium CWSs and 25% of small CWSs have LSLs

Lead Service Line Inventories-First inventory after first three years plus two annual re-evaluations in years four and five

Large Systems with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	503	2	1,006
Review			
	503	8	4,024
Follow-up			
15%	75	4	302
Reporting			
	503	0.5	252
Violations			
2%	10	4	40
Return to Compliance	10	4	40
Annual LSLI Re-evaluation	1,006	8	8,048
200%		Total	13,712

Medium Sys. with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	4,175	2	8,349
Review			
	4,175	8	33,396
Follow-up			
25%	1,044	4	4,175
Reporting			
	4,175	0.5	2,087
Violations			
20%	835	4	3,340
Return to Compliance	835	4	3,340
Annual LSLI Re-evaluation	8,349	8	66,792
200%		Subtotal	121,478
			13,712
	19,411	Total	135,190

Small Sys. with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	10,076	2	20,152
Review			
	10,076	4	40,304
Follow-up			
40%	4,030	4	16,122
Reporting			
	10,076	0.5	5,038
Violations			
33%	3,325	4	13,300
Return to Compliance	3,325	4	13,300
Annual LSLI Re-evaluation	20,152	4	80,608
200%		Subtotal	188,824
			13,712
			121,478
		Total	324,014

NTNCWS with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	439	2	877
Review			
	439	4	1,755
Follow-up			
40%	175	4	702
Reporting			
	439	0.5	219
Violations			
33%	145	4	579
Return to Compliance	145	4	579
Annual LSLI Re-evaluation	877	4	3,510
200%		Subtotal	8,222
			188,824
			121,478
			13,712
		Total	332,236

Large Systems without LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	503	2	1,006
Review			
	503	2	1,006
Follow-up			
10%	50	2	101
Reporting			
	503	0.5	252
Violations			
2%	10	2	20
Return to Compliance	10	2	20
		Total	2,404

Medium Sys. without LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	4,175	2	8,349
Review			
	4,175	2	8,349
Follow-up			
10%	417	2	835
Reporting			
	4,175	0.5	2,087
Violations			
10%	417	2	835
Return to Compliance	417	2	835
30%		Subtotal	21,290
			2,404
		Total	23,694

Small Sys. without LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	30,228	2	60,456
Review			
	30,228	2	60,456
Follow-up			
20%	6,046	2	12,091
Reporting			
	30,228	0.5	15,114
Violations			
20%	6,046	2	12,091
Return to Compliance	6,046	2	12,091
		Subtotal	172,300
			21,290
			2,404
		Total	195,994

Small NTNCWS without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	16,918	2	33,836
Review			
	16,918	2	33,836
Follow-up			
40%	6,767	2	13,535
Reporting			
	16,918	0.5	8,459
Violations			
33%	5,583	2	11,166
Return to Compliance	5,583	2	11,166
Periodic LSLI Plan Re-eval.	5,075	3	15,226
30%		Subtotal	127,225
			207,580
			27,969
			3,551
		Total	366,325

Medium/Large NTNCWS witl		Hours Ea.	Total Hours
Tracking			
# of systems	194	2	388
Review			
	194	2	388
Follow-up			
40%	78	2	155
Reporting			
	194	0.5	97
Violations			
33%	64	2	128
Return to Compliance	64	2	128
Periodic LSLR Plan Re-eval.	58	3	175
30%		Subtotal	1,459
			196,926
			207,580
			27,969
			3,551
		Total	437,485

Lead Service Line Replacement Plans-First plan after first three years plus two annual re-evaluations in years four and five

Assume LSLR plans would need to be re-evaluated on a periodic basis

Systems would find more LSLs than in original inventory or find a few LSLs in the system that were unknown initially
Assume 5% of systems initially without LSLs find a few LSLs in the system that were unknown but found via main breaks, etc.

Assumes the following are included in the LSLR plan review process:
communication plan, procedures for coordinating full LSLR, a funding strategy, a pitcher filter tracking and maintenance plan, and for CWSs that serve >10,000 people

Additonal LSL systems (5%)	
Large	25
Medium	209
Small	1,511

Also assume 5% for NTNCWS
22

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	528	2	1,056
Review			
	528	18	9,507
Negotiation of goals			
	528	8	4,225
Follow-up			
10%	53	4	211
Reporting			
	528	0.5	264
Violations			
2%	11	4	42
Return to Compliance	11	4	42
Periodic LSLR			
Plan Re-eval.	1,056	4	4,225
200%		Total	19,573

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	4,383	2	8,766
Review			
	4,383	10	43,832
Negotiation of goals			
	4,383	8	35,066
Follow-up			
10%	438	4	1,753
Reporting			
	4,383	0.5	2,192
Violations			
20%	877	4	3,507
Return to Compliance	877	4	3,507
Periodic LSLR			
Plan Re-eval.	8,766	3	26,299
200%		Subtotal	124,922
			19,573
		Total	144,495

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	11,587	2	23,175
Review			
	11,587	6	69,524
Negotiation of goals			
	11,587	8	92,699
Follow-up			
25%	2,897	4	11,587
Reporting			
	11,587	0.5	5,794
Violations			
33%	3,824	4	15,295
Return to Compliance	3,824	4	15,295
Periodic LSLR			
Plan Re-eval.	23,175	1	23,175
200%		Subtotal	256,545
			124,922
			19,573
		Total	401,040

NTNCWS with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	461	2	921
Review			
	461	6	2,764
Negotiation of goals			
	461	8	3,685
Follow-up			
40%	184	4	737
Reporting			
	461	0.5	230
Violations			
33%	152	4	608
Return to Compliance	152	4	608
Periodic LSLR			
Plan Re-eval.	921	1	921
200%		Subtotal	10,475
			256,545
			124,922
			13,235
		Total	405,177

Total LSL Replacement and Inventory 1,174,898

Tap Sampling

Model Inputs
Model Outputs

	# of systems	
Large systems >50,000	1,008	Complex Sampling Plans
Medium 3,301-50,000	8,546	Moderate Sampling Plans
Small 25-3,300	57,656	Simple Sampling Plans
Total number of systems	67,210	

Assume based on Exhibit 5-28 in EPA's Economic Analysis showing minimum sample number that because more samples are being taken more time spent reviewing
Assume review includes ensuring system used accurate sample sites and followed new protocol for providing instructions and making results available within 60 days
Assume more follow-up will be needed as system size decreases
Assume violations increase as system size decreases
Assume 99% of NTNCWS with LSL will fall under the small system size and 1% of the NTNCWS with LSL will fall under medium system size
Assume NTNCWS without LSL are added to CWS based on size
Assume hours spent on systems without LSL are less in all aspects
Assume that this includes both lead and copper tap sampling

Review of Monitoring Data

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	1,008	2	2,016
Review			
	1,008	8	8,064
Follow-up			
15%	151	4	605
Reporting			
	1,008	0.5	504
Violations			
2%	20	4	81
Return to Compliance	20	4	81
		Total	11,350

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	8,546	2	17,092
Review			
	8,546	8	68,368
Follow-up			
25%	2,137	4	8,546
Reporting			
	8,546	0.5	4,273
Violations			
20%	1,709	4	6,837
Return to Compliance	1,709	4	6,837
		Subtotal	111,953
			11,350
		Total	123,303

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	57,656	2	115,312
Review			
	57,656	4	230,624
Follow-up			
40%	23,062	4	92,250
Reporting			
	57,656	0.5	28,828
Violations			
33%	19,026	4	76,106
Return to Compliance	19,026	4	76,106
		Subtotal	619,225
			111,953
			11,350
		Total	742,528

Review of Compliance Monitoring Plans Based on LSL Inventories

Large Systems with LSL		Hours Ea.	Total Hours
Tracking			
# of systems	528	2	1,056
Review			
	528	10	5,282
Follow-up			
15%	79	4	317
Reporting			
	528	0.5	264
Violations			
2%	11	4	42
Return to			
Compliance	11	4	42
Plan			
Re-eval.	454	8	3,629
90%		Total	10,632

Medium Systems with LSL		Hours Ea.	Total Hours
Tracking			
# of systems	4,388	2	8,776
Review			
	4,388	8	35,103
Follow-up			
25%	1,097	4	4,388
Reporting			
	4,388	0.5	2,194
Violations			
20%	878	4	3,510
Return to			
Compliance	878	4	3,510
Plan			
Re-eval.	3,949	6	23,694
90%		Subtotal	81,175
			10,632
		Total	91,807

Small Systems with LSL		Hours Ea.	Total Hours
Tracking			
# of systems	12,043	2	24,087
Review			
	12,043	4	48,174
Follow-up			
40%	4,817	4	19,270
Reporting			
	12,043	0.5	6,022
Violations			
33%	3,974	4	15,897
Return to			
Compliance	3,974	4	15,897
Plan			
Re-eval.	10,839	3	32,517
90%		Subtotal	161,864
			81,175
			10,632
		Total	253,671

Review of Compliance Monitoring Plans Based on LSL Inventories

Large Systems without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	503	1	503
Review			
	503	3	1,509
Follow-up			
15%	75	2	151
Reporting			
	503	0.5	252
Violations			
2%	10	2	20
Return to			
Compliance	10	2	20
Plan			
Re-eval.	151	3	453
30%		Total	2,907

Medium Systems without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	192	1	192
Review			
	192	2	384
Follow-up			
25%	48	2	96
Reporting			
	192	0.5	96
Violations			
20%	38	2	77
Return to			
Compliance	38	2	77
Plan			
Re-eval.	58	2	115
30%		Subtotal	1,037
			2,907
		Total	3,944

Small Systems without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	47,146	1	47,146
Review			
	47,146	1	47,146
Follow-up			
40%	18,858	2	37,717
Reporting			
	47,146	0.5	23,573
Violations			
33%	15,558	2	31,116
Return to			
Compliance	15,558	2	31,116
Plan			
Re-eval.	14,144	1	14,144
30%		Subtotal	231,959
			1,037
			2,907
		Total	235,903

Tap Sampling Total	1,232,103

Trigger Level (TL)

	# of systems	CWS	NTNCWS
Large systems >50,000	1,008	1,006	2
Medium 3,301-50,000	8,546	8,349	197
Small 25-3,300	57,656	40,304	17,352
Total number of systems	67,210		

Model Inputs Trigger Level (TL)
Model Outputs Action Level (AL)

Assume states will use the latest two rounds of LCR Compliance Monitoring for trigger level determination, using the higher 90th percentile

Assume based on Exhibit 4-22 in EPA Economic Analysis that 19% of all systems will be above TL

% of systems that will be above AL and TL will increase once LSL inventories are completed & compliance monitoring locations are revised

The 19% includes the AL and TL percentages and these can be combined because workload is similar

Assume this is a one time process to help prepare individual systems for their status under the new rule - in addition to generic training covered in the Reg Start-Up tab

Reaction to TLE and ALE under routine monitoring is covered by actions under many other tabs

Some of the systems will need additional follow up due to issues with historical data and other problems

All systems		Hours Ea.	Total Hours
Tracking			
# of systems	67,210	1	67,210
Review			
	67,210	1	67,210
Reporting			
	12,770	0.5	6,385
Periodic			
Follow-up	6,721	1	6,721
10%		Total	147,526

Corrosion Control Treatment

Model Inputs
Model Outputs

	# of systems	CWS	NTNCWS
Large systems >50,000	1,008	1,006	2
Medium 3,301-50,000	8,546	8,349	197
Small 25-3,300	57,656	40,304	17,352
Total number of systems	67,210		

Assumes systems with CCT that exceed TL and AL have the same workload.
Assume there will be no large systems without CCT that must conduct CCT study or complete CCT installation
Assume percentages based off exhibit 4-22 in EPA's Economic Analysis
Assume 33% of medium systems (2820 systems) will have TLE or ALE

Option 1	Large No CCT TL	0	Must conduct study
Option 2	Medium No CCT TL	65%	Must conduct study
Option 3	Large with CCT	50%	reoptimize
Option 4	Medium with CCT	88%	reoptimize
Option 5	Large No CCT AL	0	complete cct installation
Option 6	Medium No CCT AL	35%	complete cct installation

Option 1		Hours Ea.	Total Hours
Tracking			
# of systems	-	2	-
Review			
	-	40	-
Follow-up			
25%	-	10	-
Reporting			
	-	1	-
Violations			
2%	-	6	-
Return to Compliance	-	4	-
Periodic CCT Re-eval.	-	40	-
10%		Subtotal	-

Option 2		Hours Ea.	Total Hours
Tracking			
# of systems	1,833	2	3,666
Review			
	1,833	20	36,660
Follow-up			
25%	458	10	4,583
Reporting			
	1,833	1	1,833
Violations			
20%	367	6	2,200
Return to Compliance	367	4	1,466
Periodic CCT Re-eval.	183	20	3,666
10%		Subtotal	54,074

Option 3		Hours Ea.	Total Hours
Tracking			
# of systems	504	2	1,008
Review			
	504	40	20,160
Follow-up			
25%	126	10	1,260
Reporting			
	504	1	504
Violations			
2%	10	6	60
Return to Compliance	10	4	40
Periodic CCT Re-eval.	50	40	2,016
10%		Subtotal	25,049

Option 4		Hours Ea.	Total Hours
Tracking			
# of systems	2,482	2	4,963
Review			
	2,482	20	49,632
Follow-up			
25%	620	10	6,204
Reporting			
	2,482	1	2,482
Violations			
20%	496	6	2,978
Return to Compliance	496	4	1,985
Periodic CCT Re-eval.	248	20	4,963
10%		Subtotal	73,207

Option 5		Hours Ea.	Total Hours
Tracking			
# of systems	-	2	-
Review			
	-	32	-
Follow-up			
25%	-	4	-
Reporting			
	-	1	-
Violations			
2%	-	6	-
Return to Compliance	-	4	-
Periodic CCT Re-eval.	-	32	-
10%		Subtotal	-

Option 6		Hours Ea.	Total Hours
Tracking			
# of systems	987	2	1,974
Review			
	987	20	19,740
Follow-up			
25%	247	10	2,468
Reporting			
	987	1	987
Violations			
20%	197	6	1,184
Return to Compliance	197	4	790
Periodic CCT Re-eval.	99	20	1,974
10%		Subtotal	29,117

CCT Option Total 181,446

Small System Flexibility

Assumes percentages above for CCT based on EPA Economic Analysis

Assumes 20% small systems and NTNCWS do Small System Flexibility

3% LSLR

10% CCT

8% reoptimizing CCT

2% installing CCT

6% POU

Assumes majority (80%) NTNCWS will do Lead Bearing Option with remaing 20% distributed evenly in other 4 categories

5% of NTNCWS added to total NTNCWS in small size category

LSL	3%			Reoptimizing CCT	8%			Installing CCT	2%			POU	6%			NTNCWS Lead Bearing	80% NTNCWS		
Small Sys. with LSLs		Hours Ea.	Total Hours			Hours Ea.	Total Hours			Hours Ea.	Total Hours			Hours Ea.	Total Hours			Hours Ea.	Total Hours
Tracking				Tracking				Tracking				Tracking				Tracking			
# of systems	2,077	2	4,153	# of systems	4,092	2	8,184	# of systems	1,674	2	3,347	# of systems	3,286	2	6,572	# of systen	13,882	2	27,763
Review				Review				Review				Review				Review			
	2,077	4	8,307		4,092	4	16,368		1,674	8	13,389		3,286	4	13,143		13,882	4	55,526
Follow-up				Follow-up				Follow-up				Follow-up				Follow-up			
40%	831	4	3,323	50%	2,046	4	8,184	50%	837	4	3,347	50%	1,643	4	6,572	50%	6,941	4	27,763
Reporting				Reporting				Reporting				Reporting				Reporting			
	2,077	0.5	1,038		4,092	0.5	2,046		1,674	0.5	837		3,286	0.5	1,643		13,882	0.5	6,941
Violations				Violations				Violations				Violations				Violations			
33%	685	4	2,741	33%	1,350	4	5,401	33%	552	4	2,209	33%	1,084	4	4,337	33%	4,581	4	18,324
Return to				Return to				Return to				Return to				Return to			
Compliance	685	4	2,741	Compliance	1,350	4	5,401	Compliance	552	4	2,209	Compliance	1,084	4	4,337	Compliand	4,581	4	18,324
Periodic LSLR				Periodic CCT				Periodic CCT				Periodic CCT				Periodic CCT			
Plan Re-eval.	623	3	1,869	Re-eval.	409	4	1,637	Re-eval.	167	4	669	Re-eval.	329	4	1,314	Re-eval.	1,388	4	5,553
30%		Subtotal	24,173	10%		Subtotal	47,221	10%		Subtotal	26,009	10%		Subtotal	37,919	10%		Subtotal	160,194

Small System Flexibility Total	295,515
CCT and Small System Flexibility Total	476,961

Sample Site Assessment

	# of systems	% to fix	# of systems required for find and fix
All systems	67,210	30%	20,163

		Hours Ea.	Total Hours
Tracking			
# of systems	20,163	2	40,326
Review			
	20,163	4	80,652
Follow-up			
25%	5,041	4	20,163
Reporting			
	20,163	0.5	10,082
Violations			
2%	403	4	1,613
Return to			
Compliance	403	4	1,613
		Total	154,449

Model Inputs

Model Outputs

Public Notification and Education

Model Inputs
Model Outputs

	total # of systems	# systems with ALE	# systems with LSL/sites >AL
Large systems >50,000	1,008	175	723
Medium 3,301-50,000	8,546	855	3,991
Small 25-3,300	57,656	5,016	6,746
Total number of systems	67,210	6,046	11,459

All systems will need review/assistance for general outreach materials and states will track certifications for delivery of lead results and annual outreach to local health agencies

Initial tracking, review and follow-up on water systems' public education plans for systems with ALE, including Tier 1 PN
Initial tracking, review and follow-up on water systems' transparency plans and actions for systems with LSLs and individual homes >AL
EPA's Economic Analysis used for the percentages for systems with ALEs
Assume CCR changes will be handled within normal CCR activities with no significant additional burden

Assistance and review for all systems

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	1,008	0.5	504
Review/assistance			
	1,008	4	4,032
Follow-up			
10%	101	4	403
Reporting			
	1,008	0.5	504
Violations			
2%	20	1	20
Return to			
Compliance	20	2	40
Periodic Plan			
Re-eval.	101	2	202
10%		Total	5,705
	2,258		

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	8,546	0.5	4,273
Review/assistance			
	8,546	3	25,638
Follow-up			
10%	855	2	1,709
Reporting			
	8,546	0.5	4,273
Violations			
5%	427	1	427
Return to			
Compliance	427	2	855
Periodic Plan			
Re-eval.	855	1.5	1,282
10%		Subtotal	38,457
			5,705
	19,082	Total	44,162

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	57,656	0.5	28,828
Review/assistance			
	57,656	2	115,312
Follow-up			
10%	5,766	2	11,531
Reporting			
	57,656	0.5	28,828
Violations			
10%	5,766	1	5,766
Return to			
Compliance	5,766	2	11,531
Periodic Plan			
Re-eval.	5,766	1	5,766
10%		Subtotal	207,562
			38,457
	169,578		5,705
		Total	251,724

Transparency for systems with LSLs or sites >AL

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	175	2	351
Review			
	175	4	702
Follow-up			
10%	18	4	70
Reporting			
	175	0.5	88
Violations			
2%	4	4	14
Return to			
Compliance	4	4	14
Periodic Plan			
Re-eval.	18	2	35
10%		Total	1,273
	393		

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	855	2	1,709
Review			
	855	3	2,564
Follow-up			
10%	85	2	171
Reporting			
	855	0.5	427
Violations			
5%	43	4	171
Return to			
Compliance	43	4	171
Periodic Plan			
Re-eval.	85	1.5	128
10%		Subtotal	5,341
			1,273
	19,082	Total	6,615

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	5,016	2	10,032
Review			
	5,016	2	10,032
Follow-up			
10%	502	2	1,003
Reporting			
	5,016	0.5	2,508
Violations			
10%	502	4	2,006
Return to			
Compliance	502	4	2,006
Periodic Plan			
Re-eval.	502	1	502
10%		Subtotal	28,090
			5,341
	169,578		1,273
		Total	34,705

Full PE/PN for ALE

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	723	2	1,445
Review			
	723	4	2,891
Follow-up			
10%	72	4	289
Reporting			
	723	0.5	361
Violations			
2%	14	4	58
Return to			
Compliance	14	4	58
Periodic Plan			
Re-eval.	72	2	145
10%		Total	5,247
	1,619		

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	3,991	2	7,982
Review			
	3,991	3	11,973
Follow-up			
10%	399	2	798
Reporting			
	3,991	0.5	1,995
Violations			
5%	200	4	798
Return to			
Compliance	200	4	798
Periodic Plan			
Re-eval.	399	1.5	599
10%		Subtotal	24,944
			5,247
	19,082	Total	30,191

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	6,746	2	13,492
Review			
	6,746	2	13,492
Follow-up			
10%	675	2	1,349
Reporting			
	6,746	0.5	3,373
Violations			
10%	675	4	2,698
Return to			
Compliance	675	4	2,698
Periodic Plan			
Re-eval.	675	1	675
10%		Subtotal	37,776
			24,944
	169,578		5,247
		Total	67,967

Total for Public Eduction & Transparency	354,395

Lead Testing in Schools and Child Care Facilities

Model Inputs
Model Outputs

Assume the number of hours per state includes the following:

Ongoing conversations with systems on number of licensed schools and child care facilities in their area, coordinating with other entities (Dept. of Ed., Dept of Social Services, etc.), providing updated guidance

States	Hours Ea.	Total Hours
49	1,000	49,000

Total number of systems			67210
Initial tech. assistance	67,210	3	201,630
Tracking # of systems	67,210	0.5	33,605
Review	67,210	1	67,210
Follow-up 15%	10,082	1	10,082
Reporting	67,210	1	67,210
Violations 10%	6,721	0.5	3,361
Return to Compliance	6,721	0.5	3,361
		Total	386,458

Lead Testing in Schools Total	435,458

Regulatory Start-Up

Model Inputs
Model Outputs

Hours for each activity rounded up from Revised Total Coliform Rule (RCTR)

Adoption of Lead and Copper Rule Revisions (LCRR)

States	Hours Ea.	Total Hours
49	3,200	156,800

Modify State Data Management System

Assumes that accepting ASDWA recommendations for SDWIS State will reduce staff hours by 10% from proposal

States	Hours Ea.	Total Hours
49	3,330	163,170

System Training and Technical Assistance

States	Hours Ea.	Total Hours
49	4,000	196,000

State Staff Training

Assume three categories for training for state staff to properly trained on all components of LCRR

Lead service line inventories & replacement, corrosion control treatment, public education, sampling & simultaneous compliance

			Hours Ea.	Total Hours
	Large	9	2,000	18,000
	Medium	20	1,000	20,000
	Small	20	500	10,000
Not Wyoming or DC	Total	49		48,000

This total for state staff training is in the same range as what was estimated for the Revised Total Coliform Rule (RTCR)

Total Regulatory Start-Up	563,970

Lead Service Line (LSL) Inventories and Replacement Plans

Model Inputs
Model Outputs

	# of system:	NTNCWS	Systems with LSLs			Systems without LSLs		For NTNCWS Using Exhibit 4-17 2.5% assumption
Large systems >50,000	1,006	2	503	Complex LSL Inventories & LSLR Plans		503		0
Medium 3,301-50,000	8,349	197	4,175	Moderate LSL Inventories & LSLR Plans		4,175		5
Small 25-3,300	40,304	17352	10,076	Simpler LSL Inventories & LSLR Plans		30,228		434
Total number of systems	49,659		14,754	Total number of systems with LSLs		34,906	Total no. of systems without LSLs	

Initial tracking, review and follow-up for LSL inventories - complexity of inventories based on system size and whether system has LSLs or not
Assume all systems have to conduct an inventory to determine if they have LSLs or not
Assume review of systems with LSLs will take more time than systems that don't have LSLs
Assumes all systems with LSLs would have LSL inventories re-evaluated annually
Systems would find more LSLs than in original inventory or find a few LSLs in the system that were unknown initially
Assumes all systems without LSLsL would be to be re-evaluated once based on reduced monitoring (every three years) in the first five years of the LCRR
Assumes large NTNCWS are not included due to less than 1 being reported for having LSLs based off Exhibit 4-17 in EPA's Economic Analysis
Assumes 30% of all CWS will have LSLs
Assume 5% reduction of small and NTNCWS with LSLs based on ASDWA's comments

Large Systems with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	503	2	1,006
Review			
	503	8	4,024
Follow-up			
15%	75	4	302
Reporting			
	503	0.5	252
Violations			
2%	10	4	40
Return to Compliance	10	4	40
Periodic LSL Inv. Re-eval.	503	12	6,036
100%		Total	11,700

Medium Sys. with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	4,175	2	8,349
Review			
	4,175	8	33,396
Follow-up			
25%	1,044	4	4,175
Reporting			
	4,175	0.5	2,087
Violations			
20%	835	4	3,340
Return to Compliance	835	4	3,340
Periodic LSLR Plan Re-eval.	4,175	8	33,396
100%		Subtotal	88,082
			11,700
	15,237	Total	99,782

Small Sys. with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	9,572	2	19,144
Review			
	9,572	4	38,289
Follow-up			
40%	3,829	4	15,316
Reporting			
	9,572	0.5	4,786
Violations			
33%	3,159	4	12,635
Return to Compliance	3,159	4	12,635
Periodic LSLR Plan Re-eval.	9,572	4	38,289
100%		Subtotal	141,094
			88,082
			11,700
		Total	240,876

NTNCWS with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	417	2	834
Review			
	417	4	1,667
Follow-up			
40%	167	4	667
Reporting			
	417	0.5	208
Violations			
33%	138	4	550
Return to Compliance	138	4	550
Periodic LSLR Plan Re-eval	417	4	1,667
100%		Subtotal	6,143
			141,094
			88,082
			11,700
		Total	247,019

Large Systems without LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	503	2	1,006
Review			
	503	2	1,006
Follow-up			
10%	50	2	101
Reporting			
	503	0.5	252
Violations			
2%	10	2	20
Return to Compliance	10	2	20
		Total	2,404

Medium Sys. without LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	4,175	2	8,349
Review			
	4,175	2	8,349
Follow-up			
10%	417	2	835
Reporting			
	4,175	0.5	2,087
Violations			
10%	417	2	835
Return to Compliance	417	2	835
30%		Subtotal	21,290
			2,404
		Total	23,694

Small Sys. without LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	30,228	2	60,456
Review			
	30,228	2	60,456
Follow-up			
20%	6,046	2	12,091
Reporting			
	30,228	0.5	15,114
Violations			
20%	6,046	2	12,091
Return to Compliance	6,046	2	12,091
		Subtotal	172,300
			21,290
			2,404
		Total	195,994

Small NTNCWS without		Hours Ea.	Total Hours
Tracking			
# of systems	16,918	2	33,836
Review			
	16,918	2	33,836
Follow-up			
40%	6,767	2	13,535
Reporting			
	16,918	0.5	8,459
Violations			
33%	5,583	2	11,166
Return to Compliance	5,583	2	11,166
Periodic LSLR Plan Re-eval	5,075	3	15,226
30%		Subtotal	127,225
			207,580
			27,969
			3551
		Total	366,325

Medium/Large NTNC		Hours Ea.	Total Hours
Tracking			
# of systen	194	2	388
Review			
	194	2	388
Follow-up			
40%	78	2	155
Reporting			
	194	0.5	97
Violations			
33%	64	2	128
Return to Compliand	64	2	128
Periodic LSLR Plan Re-ev	58	3	175
30%		Subtotal	1,459
			196,926
			207,580
			27,969
			3551
		Total	437,485

Assume 100% of systems with LSLs develop LSLR plans based on the respective required annual replacement percentages (3% or 7%)

Assume zero hours for goal-based replacement rates

Assume LSLR plans would need to be re-evaluated periodically

Systems would find more LSLs than in original inventory or find a few LSLs in the system that were unknown initially

Assume 5% of systems initially without LSLs find a few LSLs in the system that were unknown but found via main breaks, etc.

Assumes the following are included in the LSLR plan review process:

Communication plan, procedures for coordinating full LSLR, a funding strategy, a pitcher filter tracking and maintenance plan, and for CWSs that serve >10,000 people

Additonal LSL systems (5%)	
Large	25
Medium	209
Small	1,511

Also assume 5% for NTNCWS
21

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	528	2	1,056
Review			
	528	18	9,507
Follow-up			
10%	53	4	211
Reporting			
	528	0.5	264
Violations			
2%	11	4	42
Return to			
Compliance	11	4	42
Periodic LSLR			
Plan Re-eval.	528	8	4,225
100%		Total	15,348

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	4,383	2	8,766
Review			
	4,383	10	43,832
Follow-up			
10%	438	4	1,753
Reporting			
	4,383	0.5	2,192
Violations			
20%	877	4	3,507
Return to			
Compliance	877	4	3,507
Periodic LSLR			
Plan Re-eval.	4,383	8	35,066
100%		Subtotal	98,623
			15,348
		Total	113,971

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	11,587	2	23,175
Review			
	11,587	6	69,524
Follow-up			
25%	2,897	4	11,587
Reporting			
	11,587	0.5	5,794
Violations			
33%	3,824	4	15,295
Return to			
Compliance	3,824	4	15,295
Periodic LSLR			
Plan Re-eval.	11,587	4	46,350
100%		Subtotal	187,021
			98,623
			15,348
		Total	300,991

NTNCWS with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	438	2	875
Review			
	438	6	2,626
Follow-up			
40%	175	4	700
Reporting			
	438	0.5	219
Violations			
33%	144	4	578
Return to			
Compliance	144	4	578
Periodic LSLR			
Plan Re-eval	438	4	1,751
100%		Subtotal	7,326
			187,021
			98,623
			13,235
		Total	306,204

Total LSL Replacement and Inventory	990,708

Tap Sampling

	Model Inputs
	Model Outputs

	# of systems	
Large systems >50,000	1,008	Complex Sampling Plans
Medium 3,301-50,000	8,546	Moderate Sampling Plans
Small 25-3,300	57,656	Simple Sampling Plans
Total number of systems	67,210	

Assume based on Exhibit 5-28 in EPA's Economic Analysis showing minimum sample number that because more samples are being taken more time spent reviewing

Assume review includes ensuring system used accurate sample sites and followed new protocol for providing instructions and making results available within 60 days

Assume more follow-up will be needed as system size decreases
Assume violations increase as system size decreases
Assume 99% of NTNCWS with LSL will fall under the small system size and 1% of the NTNCWS with LSL will fall under medium system size
Assume NTNCWS without LSL are added to CWS based on size
Assume hours spent on systems without LSL are less in all aspects
Assume that this includes both lead and copper tap sampling

Review of Monitoring Data

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systems	1,008	2	2,016
Review			
	1,008	8	8,064
Follow-up			
15%	151	4	605
Reporting			
	1,008	1	504
Violations			
2%	20	4	81
Return to Compliance	20	4	81
		Total	11,350

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	8,546	2	17,092
Review			
	8,546	8	68,368
Follow-up			
25%	2,137	4	8,546
Reporting			
	8,546	0.5	4,273
Violations			
20%	1,709	4	6,837
Return to Compliance	1,709	4	6,837
		Subtotal	111,953
			11,350
		Total	123,303

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	57,656	2	115,312
Review			
	57,656	4	230,624
Follow-up			
40%	23,062	4	92,250
Reporting			
	57,656	0.5	28,828
Violations			
33%	19,026	4	76,106
Return to Compliance	19,026	4	76,106
		Subtotal	619,225
			111,953
			11,350
		Total	742,528

Review of Compliance Monitoring Plans Based on LSL Inventories

Large Systems with LSL		Hours Ea.	Total Hours
Tracking			
# of systems	528	2	1,056
Review			
	528	10	5,282
Follow-up			
15%	79	4	317
Reporting			
	528	0.5	264
Violations			
2%	11	4	42
Return to			
Compliance	11	4	42
Plan			
Re-eval.	454	8	3,629
90%		Total	10,632

Medium Systems with LSL		Hours Ea.	Total Hours
Tracking			
# of systems	4,388	2	8,776
Review			
	4,388	8	35,103
Follow-up			
25%	1,097	4	4,388
Reporting			
	4,388	0.5	2,194
Violations			
20%	878	4	3,510
Return to			
Compliance	878	4	3,510
Plan			
Re-eval.	3,949	6	23,694
90%		Subtotal	81,175
			10,632
		Total	91,807

Small Systems with LSL		Hours Ea.	Total Hours
Tracking			
# of systems	12,043	2	24,087
Review			
	12,043	4	48,174
Follow-up			
40%	4,817	4	19,270
Reporting			
	12,043	0.5	6,022
Violations			
33%	3,974	4	15,897
Return to			
Compliance	3,974	4	15,897
Plan			
Re-eval.	10,839	3	32,517
90%		Subtotal	161,864
			81,175
			10,632
		Total	253,671

Review of Compliance Monitoring Plans Based on LSL Inventories

Large Systems without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	503	1	503
Review			
	503	3	1,509
Follow-up			
15%	75	2	151
Reporting			
	503	0.5	252
Violations			
2%	10	2	20
Return to			
Compliance	10	2	20
Plan			
Re-eval.	151	3	453
30%		Total	2,907

Medium Systems without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	192	1	192
Review			
	192	2	384
Follow-up			
25%	48	2	96
Reporting			
	192	0.5	96
Violations			
20%	38	2	77
Return to			
Compliance	38	2	77
Plan			
Re-eval.	58	2	115
30%		Subtotal	1,037
			2,907
		Total	3,944

Small Systems without LSL		Hours Ea.	Total Hours
Tracking			
# of systems	47,146	1	47,146
Review			
	47,146	1	47,146
Follow-up			
40%	18,858	2	37,717
Reporting			
	47,146	0.5	23,573
Violations			
33%	15,558	2	31,116
Return to			
Compliance	15,558	2	31,116
Plan			
Re-eval.	14,144	1	14,144
30%		Subtotal	231,959
			1,037
			2,907
		Total	235,903

Tap Sampling Total	1,232,103

Trigger Level (TL)

	# of systems	CWS	NTNCWS
Large systems >50,000	1,008	1,006	2
Medium 3,301-50,000	8,546	8,349	197
Small 25-3,300	57,656	40,304	17,352
Total number of systems	67,210		

	Model Inputs	Trigger Level (TL)
	Model Outputs	Action Level (AL)

Assume states will use the latest two rounds of LCR Compliance Monitoring for trigger level determination, using the higher 90th percentile

Assume based on Exhibit 4-22 in EPA Economic Analysis that 19% of all systems will be above TL

% of systems that will be above AL and TL will increase once LSL inventories are completed & compliance monitoring locations are revised

The 19% includes the AL and TL percentages and these can be combined because workload is similar

Assume this is a one time process to help prepare individual systems for their status under the new rule - in addition to generic training covered in the Reg Start up tab

Reaction to TLE and ALE under routine monitoring is covered by actions under many other tabs

Some of the systems will need additional follow up due to issues with historical data and other problems

All systems		Hours Ea.	Total Hours
Tracking			
# of systems	67,210	1	67,210
Review			
	67,210	1	67,210
Reporting			
	12,770	0.5	6,385
Periodic			
Follow-up	6,721	1	6,721
10%	Total		147,526

Corrosion Control Treatment

Model Inputs
Model Outputs

	# of systems	CWS	NTNCWS
Large systems >50,000	1,008	1,006	2
Medium 3,301-50,000	8,546	8,349	197
Small 25-3,300	57,656	40,304	17,352
Total number of systems	67,210		

Assumes systems with CCT that exceed TL and AL have the same workload
Assume that 10% of large systems without CCT that must conduct CCT study or complete CCT installation
Assume percentages based off exhibit 4-22 in EPA's Economic Analysis
Assume 33% of medium systems (2820 systems) will have TLE or ALE

Option 1	Large No CCT TL	10%	Must conduct study
Option 2	Medium No CCT TL	65%	Must conduct study
Option 3	Large with CCT	50%	reoptimize
Option 4	Medium with CCT	88%	reoptimize
Option 5	Large No CCT AL	0	complete cct installation
Option 6	Medium No CCT AL	35%	complete cct installation

Option 1		Hours Ea.	Total Hours
Tracking			
# of systems	101	2	202
Review			
	101	40	4,040
Follow-up			
25%	25	10	250
Reporting			
	101	1	101
Violations			
2%	2	6	12
Return to			
Compliance	2	4	8
Periodic CCT			
Re-eval.	10	40	400
10%	Subtotal		5,012

Option 2		Hours Ea.	Total Hours
Tracking			
# of systems	1,833	2	3,666
Review			
	1,833	20	36,660
Follow-up			
25%	458	10	4,583
Reporting			
	1,833	1	1,833
Violations			
20%	367	6	2,200
Return to			
Compliance	367	4	1,466
Periodic CCT			
Re-eval.	183	20	3,666
10%	Subtotal		54,074

Option 3		Hours Ea.	Total Hours
Tracking			
# of systems	504	2	1,008
Review			
	504	40	20,160
Follow-up			
25%	126	10	1,260
Reporting			
	504	1	504
Violations			
2%	10	6	60
Return to			
Compliance	10	4	44
Periodic CCT			
Re-eval.	50	40	2,016
10%	Subtotal		25,052

Option 4		Hours Ea.	Total Hours
Tracking			
# of systems	2,482	2	4,963
Review			
	2,482	20	49,632
Follow-up			
25%	620	10	6,204
Reporting			
	2,482	1	2,482
Violations			
20%	496	6	2,978
Return to			
Compliance	496	4	1,985
Periodic CCT			
Re-eval.	248	20	4,963
10%	Subtotal		73,207

Option 5		Hours Ea.	Total Hours
Tracking			
# of systems	0	2	0
Review			
	0	32	0
Follow-up			
25%	0	4	0
Reporting			
	0	1	0
Violations			
2%	0	4	0
Return to			
Compliance	0	4	0
Periodic CCT			
Re-eval.	0	32	0
10%	Subtotal		0

Option 6		Hours Ea.	Total Hours
Tracking			
# of systems	987	2	1,974
Review			
	987	20	19,740
Follow-up			
25%	247	10	2,468
Reporting			
	987	1	987
Violations			
20%	197	6	1,184
Return to			
Compliance	197	4	790
Periodic CCT			
Re-eval.	99	20	1,974
10%	Subtotal		29,117

CCT Option Total 186,462

Small System Flexibility

Assumes percentages above for CCT based on EPA Economic Analysis

Assumes 20% small systems and NTNCWS do Small System Flexibility

- 3% LSLR
- 10% CCT
  - 8% reoptimizing CCT
  - 2% installing CCT
- 6% POU

Assumes majority (80%) NTNCWS will do Lead Bearing Option with remaing 20% distributed evenly in other 4 categories

5% of NTNCWS added to total NTNCWS in small size category

LSL	3%		
Small Sys. with LSLs		Hours Ea.	Total Hours
Tracking			
# of systems	2,077	2	4,153
Review			
	2,077	4	8,307
Follow-up			
40%	831	4	3,323
Reporting			
	2,077	0.5	1,038
Violations			
33%	685	4	2,741
Return to			
Compliance	685	4	2,741
Periodic LSLR			
Plan Re-eval	623	3	1,869
30%		Subtotal	24,173

Reoptimizing CCT	8%		
		Hours Ea.	Total Hours
Tracking			
# of systems	4,092	2	8,184
Review			
	4,092	4	16,368
Follow-up			
50%	2,046	4	8,184
Reporting			
	4,092	0.5	2,046
Violations			
33%	1,350	4	5,401
Return to			
Compliance	1,350	4	5,401
Periodic CCT			
Re-eval.	409	4	1,637
10%		Subtotal	47,221

Installing CCT	2%		
		Hours Ea.	Total Hours
Tracking			
# of systems	1,674	2	3,347
Review			
	1,674	8	13,389
Follow-up			
50%	837	4	3,347
Reporting			
	1,674	0.5	837
Violations			
33%	552	4	2,209
Return to			
Compliance	552	4	2,209
Periodic CCT			
Re-eval.	167	4	669
10%		Subtotal	26,009

POU	6%		
		Hours Ea.	Total Hours
Tracking			
# of systems	3,286	2	6,572
Review			
	3,286	4	13,143
Follow-up			
50%	1,643	4	6,572
Reporting			
	3,286	0.5	1,643
Violations			
33%	1,084	4	4,337
Return to			
Compliance	1,084	4	4,337
Periodic CCT			
Re-eval.	329	4	1,314
10%		Subtotal	37,919

NTNCWS Lead Bearing	80% NTNCWS		
		Hours Ea.	Total Hours
Tracking			
# of systen	13,882	2	27,763
Review			
	13,882	4	55,526
Follow-up			
50%	6,941	4	27,763
Reporting			
	13,882	0.5	6,941
Violations			
33%	4,581	4	18,324
Return to			
Compliand	4,581	4	18,324
Periodic CCT			
Re-eval.	1,388	4	5,553
10%		Subtotal	160,194

Small System Flexibility Total	295,515
CCT and Small System Flexibility Total	481,977

Sample Site Assessment

Model Inputs
Model Outputs

Assume lower hours due to reduced reporting requirements and what state has to review as described in ASDWA comments

	# of systems	% to fix	# of systems required for find and fix
All systems	67,210	30%	20,163

		Hours Ea.	Total Hours
Tracking			
# of systems	20,163	2	40,326
Review			
	20,163	2	40,326
Follow-up			
25%	5,041	1	5,041
Reporting			
	20,163	0.5	10,082
Violations			
2%	403	1	403
Return to			
Compliance	403	1	403
		Total	96,581

Public Notification and Education

Model Inputs
Model Outputs

	total # of systems	# systems with ALE	# systems with LSL/sites >AL
Large systems >50,000	1,008	175	723
Medium 3,301-50,000	8,546	855	3,991
Small 25-3,300	57,656	5,016	6,746
Total number of systems	67,210	6,046	11,459

All systems will need review/assistance for general outreach materials and states will track certifications for delivery of lead results and annual outreach to local health agencies

Initial tracking, review and follow-up on water systems' public education plans for systems with ALE, including Tier 1 PN
Initial tracking, review and follow-up on water systems' transparency plans and actions for systems with LSLs and individual homes >AL
EPA's Economic Analysis used for the percentages for systems with ALEs
Assume CCR changes will be handled within normal CCR activities with no significant additional burden

Assistance and review for all systems

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systen	1,008	0.5	504
Review/assistance			
	1,008	4	4,032
Follow-up			
10%	101	4	403
Reporting			
	1,008	0.5	504
Violations			
2%	20	1	20
Return to			
Complianc	20	2	40
Periodic Plan			
Re-eval.	101	2	202
10%		Total	5,705
	2,258		

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	8,546	0.5	4,273
Review/assistance			
	8,546	3	25,638
Follow-up			
10%	855	2	1,709
Reporting			
	8,546	0.5	4,273
Violations			
5%	427	1	427
Return to			
Compliance	427	2	855
Periodic Plan			
Re-eval.	855	1.5	1,282
10%		Subtotal	38,457
			5,705
	19,082	Total	44,162

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	57,656	0.5	28,828
Review/assistance			
	57,656	2	115,312
Follow-up			
10%	5,766	2	11,531
Reporting			
	57,656	0.5	28,828
Violations			
10%	5,766	1	5,766
Return to			
Compliance	5,766	2	11,531
Periodic Plan			
Re-eval.	5,766	1	5,766
10%		Subtotal	207,562
			38,457
	169,578		5,705
		Total	251,724

Transparency for systems with LSLs or sites >AL

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systen	175	2	351
Review			
	175	4	702
Follow-up			
10%	18	4	70
Reporting			
	175	0.5	88
Violations			
2%	4	4	14
Return to			
Complianc	4	4	14
Periodic Plan			
Re-eval.	18	2	35
10%		Total	1,273
	393		

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	855	2	1,709
Review			
	855	3	2,564
Follow-up			
10%	85	2	171
Reporting			
	855	0.5	427
Violations			
5%	43	4	171
Return to			
Compliance	43	4	171
Periodic Plan			
Re-eval.	85	1.5	128
10%		Subtotal	5,341
			1,273
	19,082	Total	6,615

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	5,016	2	10,032
Review			
	5,016	2	10,032
Follow-up			
10%	502	2	1,003
Reporting			
	5,016	0.5	2,508
Violations			
10%	502	4	2,006
Return to			
Compliance	502	4	2,006
Periodic Plan			
Re-eval.	502	1	502
10%		Subtotal	28,090
			5,341
	169,578		1,273
		Total	34,705

Full PE/PN for ALE

Large Systems		Hours Ea.	Total Hours
Tracking			
# of systen	723	2	1,445
Review			
	723	4	2,891
Follow-up			
10%	72	4	289
Reporting			
	723	0.5	361
Violations			
2%	14	4	58
Return to			
Compliance	14	4	58
Periodic Plan			
Re-eval.	72	2	145
10%		Total	5,247
	1,619		

Medium Systems		Hours Ea.	Total Hours
Tracking			
# of systems	3,991	2	7,982
Review			
	3,991	3	11,973
Follow-up			
10%	399	2	798
Reporting			
	3,991	0.5	1,995
Violations			
5%	200	4	798
Return to			
Compliance	200	4	798
Periodic Plan			
Re-eval.	399	1.5	599
10%		Subtotal	24,944
			5,247
	19,082	Total	30,191

Small Systems		Hours Ea.	Total Hours
Tracking			
# of systems	6,746	2	13,492
Review			
	6,746	2	13,492
Follow-up			
10%	675	2	1,349
Reporting			
	6,746	0.5	3,373
Violations			
10%	675	4	2,698
Return to			
Compliance	675	4	2,698
Periodic Plan			
Re-eval.	675	1	675
10%		Subtotal	37,776
			24,944
	169,578		5,247
		Total	67,967

Total for Public Eduction & Transparency	354,395

Lead Testing in Schools and Child Care Facilities

Model Inputs
Model Outputs

Assumes "upon request" approach to lead testing in schools and child care facilities
Assume staff hours by states with the "upon request" option is 36.5% of proposed option
Assume review includes:

Reviewing system analysis of schools and sending sampling kits, provide 3Ts guidance to each facility, submit annual report

States	Hours Ea.	Total Hours
49	1,000	49,000

Total number of systems			67210
Initial tech. assistance	24,532	3	73,595
Tracking # of systems	24,532	0.5	12,266
Review	24,532	1	24,532
Follow-up 15%	3,680	1	3,680
Reporting	24,532	1	24,532
Violations 10%	2,453	0.5	1,227
Return to Compliance	2,453	0.5	1,227
		Total	141,057

Lead Testing in Schools Total	190,057