



March 8, 2018

Mr. Scott Pruitt, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

Subject: State Drinking Water Program Comments on Long-Term Revisions to the Lead and Copper Rule (LT-LCR)

Dear Administrator Pruitt:

The Association of State Drinking Water Administrators (ASDWA) appreciates the opportunity to provide additional input on potential Long-Term Revisions to the Lead and Copper Rule (LT-LCR). ASDWA is the professional association that serves the 57 men and women (and their staff) who lead and implement state and territorial drinking water programs. ASDWA has become a respected voice for state primacy agencies with Congress, the Environmental Protection Agency (EPA), and other professional organizations. Our members are co-regulators with EPA for the National Primary Drinking Water Regulations (NPDWRs), so our recommendations for the LT-LCR 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. As such, our members have a breadth and depth of knowledge on this topic that's likely greater than any other group from which EPA will receive comments. Our members' comments contain several important recommendations that we hope EPA will thoughtfully consider during its discussion of potential regulatory options.

The goal for the LT-LCR is simple – reduce lead exposure from drinking water and increase public health protection. From our perspective, the regulatory approach to reach this goal is:

- Targeting more stringent regulatory requirements where they are needed most;
- Closing the “loopholes” in the current LCR; and
- Simplifying the regulatory requirements, so that water systems, state primacy agencies, technical assistance providers, contract operators, and anyone else working to provide safe drinking water can read and understand them.

In our comments you will find 7 major recommendations for EPA:

1. Keep as many components of the current LCR as possible (if they are protective of public health) for the monitoring and sampling site selection framework because water systems, state primacy agencies, technical assistance providers, and contract operators already know them.
2. Consider using a “bins” regulatory framework for the rule with progressively more stringent “bins” with required actions by water systems based on increasing levels of the 90th percentile of lead samples from 1-liter first draw tap samples.

3. Apply a holistic approach that takes into consideration simultaneous compliance with all drinking water regulations, as well as with regulations for wastewater discharges.
4. Be the leader with all federal agencies in reducing total lead exposure, not just from drinking water, and look beyond drinking water regulations to reduce public exposure to lead.
5. Support Americans with lead service lines, with public education and programs that promote cooperative funding, so that all homeowners, no matter their income or location, can afford to replace them.
6. Assure all educational materials about reducing exposure to lead are consistent across all agencies and are fully transparent.
7. Be careful in how much flexibility is allowed under the LT-LCR. Too much flexibility can adversely impact rule implementation, create unintended “loopholes”, and ultimately lead to delays in achieving the intended results. States generally prefer flexibility for a limited number of strategic regulatory components where states need to be able to tailor regulatory requirements to local conditions.

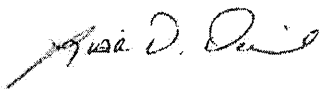
ASDWA urges EPA to be mindful that the LT-LCR will have a significant impact on state workloads – our estimates are more than 730,000 hours annually – and state budgets. ASDWA has developed a detailed Costs of States’ Transaction Study (CoSTS) that estimates an additional burden of \$73-\$97 million annually for states, depending on the regulatory option selected. Given the states’ ongoing challenges in meeting EPA’s requirements for the existing drinking water regulations, this is a significant increase. This potential increase exacerbates the gradual erosion of federal funding from the Public Water System Supervision (PWSS) program from \$105 million in FY 10 to \$102 million for the past four fiscal years (FY 14 to FY 17).

Additionally, the LT-LCR could potentially impact the funding from the Drinking Water State Revolving Loan Fund (DWSRF) as more water systems move forward with the installation of corrosion control treatment (CCT) and lead service line replacement (LSLR). The funding for this additional treatment and construction needs to be considered in EPA’s Drinking Water Needs Survey, and the funding for the DWSRF increased accordingly.

Phasing in some of the regulatory requirements based on system size will likely be necessary, such as staggered compliance deadlines, which would be comparable to the implementation approach for other drinking water regulations in the past.

On behalf of the 57 states, territories and tribes we represent and the 150,000 drinking water systems they oversee, which serve 300 million Americans, we thank you for the opportunity to provide this input on the LT-LCR. If you have any questions about these comments, please feel free to contact me at ldaniels@pa.gov or Alan Roberson, ASDWA’s Executive Director at aroberson@asdwa.org.

Sincerely,



Lisa Daniels, ASDWA President

cc: Andrew Hanson – EPA OCIR
Peter Grevatt – EPA OGWDW
Eric Burneson – EPA OGWDW

**Comments by the Association of State Drinking Water Administrators (ASDWA)
For the Lead and Copper Rule (LCR) Federalism Consultation
Docket ID No. EPA-HQ-OW-2018-0007**

General

The Association of State Drinking Water Administrators (ASDWA) appreciates the opportunity to provide additional input on potential Long-Term Revisions to the Lead and Copper Rule (LT-LCR). ASDWA is the professional association that serves the 57 men and women (and their staff) who lead and implement 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 state primacy agencies with Congress, the Environmental Protection Agency (EPA), and other professional organizations. ASDWA's members are co-regulators with EPA for the National Primary Drinking Water Regulations (NPDWRs), so our recommendations for the LT-LCR are based on many years of implementation experience.

ASDWA's members have been implementing the current 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. 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 LT-LCR. ASDWA's members have recently gained additional regulatory experience post-Flint by taking actions such as reviewing materials 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. As rule development continues, ASDWA, as co-regulators with EPA, would like to continue to collaborate with EPA. These comments contain several important recommendations (such as the "bins" regulatory framework detailed below) that EPA needs to thoughtfully consider during its discussions and deliberations on potential regulatory options for the final LT-LCR.

The goal for the LT-LCR 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 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 should be recognized and the lead regulation strengthened to minimize the potential for additional outliers. While everyone can agree on the above goal, the optimal processes to achieve that goal vary, depending on perspective.

From the perspective of state primacy agencies, ASDWA's goal for the LT-LCR is to continue to protect public health by

- Targeting more stringent regulatory requirements where they are needed most;
- Closing the "loopholes" in the current LCR; and

- Simplifying the regulatory requirements, so that water systems, state primacy agencies, consulting engineers, technical assistance providers, contract operators, and anyone else working to provide safe drinking water can read and understand them.

The current LCR is one of the most complex drinking water regulation with lots of moving parts, and many potential regulatory changes have been discussed and debated for the past 15-20 years. One method for simplification is to keep as many components of the existing LCR as possible (if they are protective of public health) for the monitoring and sampling site selection framework that water systems, state primacy agencies, consulting engineers, technical assistance providers, and contract operators already know. Any change to the LCR will require substantial training and technical assistance, so minimizing unnecessary changes should be a goal for the LT-LCR.

ASDWA's recommendations and comments on the LT-LCR go beyond the questions in the five categories presented at the January 8th Federalism Consultation Meeting. ASDWA's comments provide an overall regulatory approach using "bins" (detailed below) with a progressively more stringent regulatory framework based on increasing levels of the 90th percentile of lead samples for 1-liter first draw tap samples. Additionally, these comments should be the starting point for additional dialogue between ASDWA's members (as co-regulators) and EPA, with additional discussions on the LT-LCR between March 8th and the publication of the proposed rule.

ASDWA recommends that EPA take a holistic regulatory approach for the LT-LCR 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 wastewater dischargers, the addition of a phosphate-based corrosion control inhibitor could result in a 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. It would be prudent for EPA to consider making a realistic assessment of Clean Water Act (CWA) implications if the agency considers mandating the addition of phosphate-based corrosion inhibitors in the LT-LCR.

EPA should take the lead with all federal agencies in reducing total lead exposure, not just from drinking water, as part of this holistic approach. EPA Administrator Pruitt's recent invitation to members of the President's Task Force on Environmental Health Risks and Safety Risks to Children to participate in a Principals Meeting to discuss next steps in developing a federal strategy to reduce childhood lead exposure and eliminate associated health impacts is a step in the right direction. Consistent and timely follow-up actions to this initial meeting are needed. As part of the LT-LCR, EPA should consider what actions the Centers for Disease Control and Prevention (CDC) and other agencies are taking to reduce exposure to lead so that all involved are sending a consistent message. All federal agencies must agree on what actions homeowners and tenants should be taking.

Additionally, expecting the LT-LCR to single-handedly address lead exposure through a more stringent drinking water regulation is unrealistic. Considerable progress in reducing total

exposure to lead has been made through the lead ban in gasoline, mitigation in homes with lead paint, the ban of lead solder, corrosion control in drinking water and the further reduction of allowable lead in plumbing materials from the Reduction of Lead in Drinking Water Act of 2011 (P.L. 111-380). Consistent and timely actions are needed for all routes of exposure – lead in paint, lead in dust and lead in drinking water. Some routes of exposure, such as paint and dust, can be effectively addressed through EPA offices outside of the Office of Water (OW) and through the expansion of healthy homes initiatives and lead reduction initiatives in other federal agencies. Again, EPA needs to take the lead with all federal agencies in reducing total lead exposure.

The public plays a key role in reducing total lead exposure, as, dependent on the local situation, homeowners and tenants can take actions to reduce their lead exposure. For homes with lead service lines, addressing lead is a shared responsibility between customers and public water systems since lead service lines exist on both public property (rights-of-way or easements) and private property. The LT-LCR should adequately support appropriate actions by both the customers and public water systems.

It is critical that all entities involved are fully transparent and deliver consistent information to the public. Educational materials must provide consistent and precise guidelines so that customers take the appropriate actions. A significant effort will be needed by EPA to develop the appropriate educational and outreach materials as part of the LT-LCR.

Balancing regulatory flexibility and ease of implementation is always challenging in the 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 LT-LCR for a limited number of strategic regulatory components. Too much flexibility in the LT-LCR would be problematic for states.

No matter what regulatory option is ultimately selected, the LT-LCR will lead to an increased workload for states. States’ actions will include the tracking and oversight of new monitoring and reporting requirements, review and approval of new or updated plans and reports, additional follow-up actions, additional training and technical assistance, and compliance and enforcement. ASDWA has developed a detailed Costs of States’ Transaction Study (CoSTS) that estimates that the national total hours for state staff time during the first cycle (the first 5 years) of implementation of the LT-LCR will be in the range of 3.7-4.9 million hours, or 730,000-970,000 hours of labor annually for 49 states (Wyoming doesn’t have primacy). Assuming a loaded (direct and indirect costs) hourly rate of \$100 for a staff engineer, this translates to an additional burden of \$73-\$97 million annually for states. Given the states’ ongoing challenges in meeting EPA’s requirements for the existing drinking water regulations, this is a significant increase. This potential increase exacerbates the gradual erosion of federal funding from the Public Water System Supervision (PWSS) program from \$105 million in FY 10 to \$102 million for the past four fiscal years (FY 14 to FY 17). Inflation over the past decade further exacerbates the funding

gap. A narrative on the development of these estimated costs and the detailed spreadsheets for CoSTS are attached as Appendix A to these comments.

State drinking water programs have been chronically underfunded, on top of this gradual erosion of PWSS funding. ASDWA's 2013 state drinking water resource needs report estimated the funding gap of \$240 million for a minimum based program, and \$308 million for a comprehensive program that includes additional activities undertaken by states to achieve the public health protection vision and goals established by the SDWA. This report was a collaboration between EPA and ASDWA, using EPA's contractor (Cadmus) to collect the data (that was then validated by the states) and then generate the report. The summary recommendations from this report are enclosed as Appendix B to these comments.

Regardless of the regulatory option selected, the LT-LCR will have a high initial workload for states for developing their primacy package, tracking and reviewing materials and lead service line inventories, tracking and reviewing monitoring plans, training and technical assistance for water systems and technical assistance providers, etc. Each component of the LT-LCR will require a significant increase in state staff time.

One component ("regulatory start-up") can be validated by comparing the LT-LCR to the 2013 Revised Total Coliform Rule. The workload from the RTCR "regulatory start-up" was significant. ASDWA's estimate for the LT-LCR start-up effort is more than 500,000 hours of state staff time, which is in the range of the estimated start-up for the 2013 RTCR that was developed for ASDWA's 2013 national estimate of the resources needed for state staff time for all components of their drinking water programs.

Training is another regulatory component that warrants some additional discussion, as the drinking water community does not have technical capacity to implement a revised LCR. Technical capacity for determining and maintaining Corrosion Control Treatment (CCT) and developing appropriate monitoring plans for water quality parameters (WQP) ramped up after the 1991 LCR but has since decreased due to state staff turnover/retirements and a lack of funding. There is simply not enough capacity with the states, water systems, consulting engineers, academics, and technical assistance providers to meet all potential regulatory needs for a revised LCR. The number of corrosion control experts in drinking water in the U.S. can be counted on both hands. A joint effort between EPA, ASDWA, and other water associations such as the American Water Works Association (AWWA) will be needed to support the rebuilding of this technical capacity and close coordination on training materials and delivery will be needed. Adequate funding will be needed for the development and delivery of training on the LT-LCR.

Adequate funding for research will also be needed. Many technical issues, such as which corrosion indices to use and/or consider for CCT and when to use coupon testing versus pipe loop studies, will need immediate research funding for successful implementation of the LT-LCR. In this current climate of constrained federal funding, finding the additional funding isn't going to be easy, but it's critical for successful rule implementation and public health protection.

Phasing in some of the regulatory requirements based on system size will likely be necessary, i.e., staggered compliance deadlines, comparable to the implementation approach for other

drinking water regulations. There is simply not enough capacity with the states, water systems, consulting engineers and technical assistance providers to meet all potential regulatory deadlines for all water systems at once.

Strengthened Regulatory Framework Using “Bins” Targets Additional Requirements

The LCR Federalism Consultation approach posed some challenges for ASDWA’s members (as co-regulators with EPA) in developing substantive comments. As previously mentioned, the current LCR is probably the most complex drinking water regulation with lots of moving parts, and many potential regulatory changes have been discussed and debated for the past 15-20 years.

EPA presented questions on five topics at the initial Federalism Consultation meeting on January 8, 2018. The challenge ASDWA faced was how to connect the topics together in a holistic regulatory framework that shows how each builds and integrates with the other. ASDWA’s Board of Directors met this challenge by developing a progressively more stringent regulatory framework based on increasing levels of the 90th percentile of lead samples for 1-liter first draw tap samples. The framework fits the pieces of the regulatory “jigsaw puzzle” together into a holistic approach and targets more stringent regulatory treatment technique requirements where they are needed most. The “bins” regulatory framework is detailed below.

Bin	Lead 90th percentile	Corrosion Control Treatment (CCT)	Lead Service Lines (LSLs)	Water Quality Parameters (WQPs)	PE and Outreach Materials	Tap Sampling
#1	0-5.0 µg/L	Retain current requirements for triggering installation of CCT	Retain current requirements for triggering LSL replacement (LSLR)	Retain current requirements for WQP monitoring for systems with CCT	Provide public education (PE) in Consumer Confidence Report (CCR) & other delivery channels	Retain frequency & triggers in current rule. Allow triennial monitoring
#2	5.0-10.0	Retain current requirements for triggering installation of CCT	Develop LSLR plan & pilot LSLR plan	WQP assessment to evaluate changes in water chemistry	Deliver targeted PE for homes with LSLs	Annual monitoring with standard number of sites. No triennial monitoring
#3	10.0-15.0	Require CCT study that identifies appropriate CCT if Action Level (AL) is exceeded – Implement distribution system find & fix protocol	Implement proactive voluntary LSLR	Increase frequency and number of sampling sites for WQP monitoring. Recommend optimal WQP ranges as part of CCT study	Deliver targeted PE to areas of distribution system based on find and fix	Monitor every six months
#4	>15.0 µg/L	Require CCT	Require implementation of LSLR plan	Require WQP monitoring based on CCT	Deliver broader PE and outreach materials for all	Monitor every six months

Each bin builds upon the previous bin. For example, a system in bin #2 must comply with the regulatory requirements in both bins #1 and #2. A system in bin #3 must comply with the regulatory requirements in bins #1, #2, and #3. A system in bin #4 must comply with all the requirements in all bins.

This framework eliminates several “loopholes” in the current rule. For example, water systems would not be able to sample repeatedly at sites with low lead levels to reduce their 90th percentile. Systems would not be able to sample from sub-optimal sites based on outdated information, i.e., for systems with a blend of LSL and non-LSL homes, all compliance sampling locations would need to be at LSL homes.

This framework also has some details that warrant further discussions and deliberations. For example, some of the above components will need an “anti-backsliding” approach, such as corrosion control treatment (CCT). Once CCT is initiated, it should be considered a permanent installation and not suspended when 90th percentiles decline. Further discussion between EPA and ASDWA (as co-regulators) is also needed on how much existing data (grandfathering) could be used for initial bin placement.

This regulatory framework parallels other NPDWRs, such as the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and prioritizes regulatory actions for systems that have higher 90th percentiles, thereby increasing public health protection in a timely manner. It also recognizes and allows water systems in the lowest bin (bin #1 with a 90th percentile of 0-5.0 µg/L) to maintain their present actions. Water systems in the lowest bin would not be required to make the investment to replace lead service lines (LSLs) when the inherent water chemistry or corrosion control is working and a sufficient scale inside the pipe has been formed to minimize lead exposure. The framework is proactive in that if a system is in bin #3 (10.0-15.0 µg/L), steps will be required that would hopefully prevent the systems from exceeding the 15 µg/L Action Level (AL). Finally, this framework encourages systems to strive for a lower bin with less regulatory requirements that would ultimately lead to increased public health protection.

The assessment in bin #2 should include an evaluation of more frequent lead and water quality parameter (WQP) monitoring, the WQP operational range, more representative locations, the potential need for additional WQP parameters such as dissolved inorganic carbon (DIC), etc. ASDWA would be willing to collaborate with EPA on the development of guidance on the details of this proposed assessment.

The broader public education and outreach effort in bin #4 should include increased frequency, targeted delivery, good faith effort to reach renters, and partnerships with schools and day care centers and local health agencies. Again, ASDWA would be willing to collaborate with EPA on the development of guidance on the details of this proposed outreach effort. The Lead Service Line Replacement Collaborative, of which ASDWA is a member, would provide a forum for development and distribution of the broader public education and outreach materials. Additionally, EPA needs to take the lead with all federal agencies in reducing total lead exposure and the distribution of such materials to others that need them besides states and water systems,

such as the Department of Education for schools and the Department of Health and Human Services (HHS) for childcare facilities and local health agencies.

Lead Service Lines (LSLs)

ASDWA believes that, as a goal, the only way that lead exposure can be eliminated in drinking water is if lead can be completely removed from contact with the water. This is our public health goal, and the LT-LCR should help us move in that direction. However, the TL-LCR must also be cost effective and have a reasonable expectation that water systems can comply. Setting unrealistic expectations, for example, considering the initial accuracy of lead service line (LSL) inventories, reaching 100% LSL removal of both the public and private sides within a short timeframe, regardless of the cost, just sets states and water systems up for failure and will continue to degrade public confidence in drinking water. The bin approach previously discussed should not prevent water systems or communities from proactively removing LSLs (both public and private sides) and ASDWA supports these voluntary efforts.

Lead service lines (LSLs) may be the largest contributor of lead in drinking water in systems with LSLs, but LSLs are not the only source of lead. Many water systems do not have (or don't currently think that they have) any LSLs. Therefore, the regulation can't focus exclusively on LSLs but must address other lead sources such as lead solder, plumbing fixtures, galvanized pipes, etc., that also contribute to the lead action level and lead exposure in general. The rule must also recognize that the largest lead contribution is probably not on the public side but likely originates in the customer's own lead service line (private side) and in their plumbing. ASDWA favors an approach, like our suggestion for using bins, to holistically address lead in drinking water under the rule. Lead service line replacement (LSLR) should be covered in LT-LCR but is also something for which EPA should seek collaboration with other federal agencies and interested groups outside government, especially for supporting LSLR on the private side.

ASDWA believes the cost of lead service line replacement (both public and private side) is too great to be mandated for water systems in the LT-LCR. Water systems can and should take steps to promote and facilitate full removal of lead service lines, as noted in our bin table, and appropriate rule requirements can make this happen. However, the only way to realistically remove the complete lead service line involves active home-owner participation. Many homeowners will not be able to pay for removing the portion of the line they own. Funding for this effort will need to be provided through a collaborative and cooperative approach involving a variety of stakeholders, both public and private. As previously mentioned, the Lead Service Line Replacement Collaborative provides a notable example of how groups can come together to help solve this problem. Also, some actions to reduce LSLs on the private side are outside the scope of the LCR, and EPA should be working with other agencies to encourage responsible actions by homeowners. This includes efforts such as notification to purchasers about lead pipes in homes at the point of sale, expanding access to lead remediation funding for LSL replacement, and other similar measures.

A complete inventory of lead in the water system (outside the home) is essential to support lead service line replacement (LSLR) and is also critical information for determining appropriate sample locations and advising the customer on how to reduce lead exposure. The data in the materials inventory also helps drive the decisions in our bin approach. The rule should require

the water system to develop a complete materials inventory of the entire distribution system and submit the inventory to states for review and approval. The inventory must address both public and private side LSLs, as well as lead goosenecks used to connect the service line to the water main, to provide adequate information to drive action. This inventory will have to evolve over time, as more data and information about the distribution system becomes available through water main replacement and LSLR.

For compliance with the 1991 LCR, many systems only conducted a partial materials inventory to find the required number of tier 1 sample sites. This level of effort was not sufficient to prepare them to identify replacement sites as customers dropped out. A new or updated materials inventory under the LT-LCR must be completed. It was not clear under the current rule whether the materials inventory had to be submitted to the state, so therefore, most were not. Under the revised rule, states will expect to receive, review and approve all materials inventories for completeness. ASDWA recognizes that this will be a significant effort for both water systems and states, but the effort needs to be undertaken. ASDWA recommends that failure to complete an appropriate inventory be a violation.

Developing the inventory will be challenging. A completely accurate inventory is nearly impossible to create since local records are incomplete or non-existent. Research is underway to develop more tools, but at this point, systems will need to use the best information that can be found. Where reliable data is not available, estimates may need to be made for both private and public lines using housing age, local ordinances, and other relevant factors. The homeowners can play a role in documenting private side service lines, and water systems should reach out to the homeowners to determine if they have more information about their service line. EPA should provide detailed guidance for developing the inventories.

Plumbers can play a role if they are provided with training and guidance on identifying lead service lines. Information for plumbers should be a part of the basic educational material that EPA develops for the LT-LCR. EPA should develop estimated costs for plumbers to conduct a lead service line evaluation, so educational material for customers can include these costs should a homeowner want to know with some certainty if they have a LSL (or not).

ASDWA recognizes that any materials inventory is going to evolve, and that the data for some locations (or many locations) will initially be based on best professional judgement, using the history of lead service line installation or other local records. It will be difficult to document, or field verify, all lead service line locations. As such, the inventory will be fluid over time as additional information becomes available from newly discovered records or work in the distribution system. The Lead Service Line Replacement Collaborative has already started collecting best practices for developing inventories, and these best practices need to continue be updated as implementation of the LT-LCR unfolds.

ASDWA recommends that the materials inventory be updated periodically, and the associated compliance monitoring plan adjusted accordingly. The updated inventory could be required to be submitted, reviewed and approved on a mandated frequency, and the frequency could depend on the complexity of the water system, the inventory, and the resources needed for periodic updates. Another option might be to update the inventory along with the monitoring plan before each

monitoring cycle begins for the water system.

Preparing a materials inventory, especially one that covers the entire distribution system and includes information for both the private side and the public side will be a significant task for water systems. The review and approval of the inventories will be a significant burden for states. ASDWA recommends some phase-in of this regulatory requirement, starting with large systems and moving to medium and then to small systems over time. States should have the option of accelerating the compliance schedule at their discretion.

In summary, more attention is needed on the materials inventory and compliance monitoring plans by water systems and states, so that states (and the public) can be assured the data are accurate and further actions by water systems based on these data are appropriate. Both are key factors since the “bin” approach relies on 90th percentile values of first draw 1-liter samples.

The LT-LCR should require systems to update their compliance monitoring plans based on the updated materials inventory. The two are linked and one of the failings of the current rule is not fully recognizing the importance of this pairing. Additionally, since ASDWA’s goal is total removal of lead, the “testing out” provision for LSLR in the current LCR should be eliminated, regardless of what LSLR regulatory requirements are selected for the LT-LCR.

Distribution of pitcher filters at the time of LSL replacement should not be mandated, although water systems could decide to offer them as an option, in which case, they should be required to make a recommendation on the use of filters in their public education materials. Alternatively, appropriate flushing is effective at reducing lead exposure. A standard flushing protocol should be developed for inclusion in public education and other outreach materials.

Partial LSL replacements are inevitable due to main breaks and emergency repairs. While they can’t be totally banned, the rule should encourage water systems to do complete replacement whenever possible and any LSL replacement plan should address this issue. The AWWA Standard C810-17 (Replacement and Flushing for Lead Service Lines) can offer consistency for LSL replacement.

Corrosion Control Treatment (CCT)

Corrosion control plays a key role in the implementation of the LCR, regardless of whether there are lead service lines present or any active LSL replacement program. CCT has significantly reduced lead levels in communities across the U.S. as shown by declining 90th percentile values as detailed in Figure 1 of the Brown, et al, paper (Jour. AWWA 105:5:62). ASDWA does not recommend that wholesale changes be made to the CCT requirements, but some CCT requirements can be tweaked and strengthened to make maximum use of this effective tool for reducing lead exposure.

ASDWA recommends that existing CCT be maintained where it is in place, but ASDWA does not support mandating treatment for all water systems. Even under the “bin” approach, water systems with existing CCT must continue CCT. However, adding CCT is a major challenge, especially for small systems and for systems with multiple sources and multiple entry points to the distribution system.

Simultaneous compliance issues must be considered. Installing CCT in small systems where there is no preexisting treatment beyond disinfection may require an operator certification upgrade, additional operational monitoring, and possibly impact compliance with other rule requirements and even influence the community's wastewater discharge. Corrosion control should be installed where it is needed but not where existing water quality is already adequately managing lead. The "bin" approach factors this concept into the "bin" categories, where every size system could require CCT and systems will be increasing their efforts even before there is an Action Level Exceedance (ALE). The approach increases reliance on CCT when it is appropriate to control lead.

A vast amount of data has already been collected under the existing LCR and this information should be used to help determine appropriate CCT for individual systems. Water quality parameter data, 90th percentile lead levels, and individual lead values from homes that have been sampled multiple times, can all contribute to an understanding of the quality of the water and the propensity to leach lead into the drinking water. These data will all be useful when assigning bins and taking the required actions to meet bin requirements under our suggested approach. This is one reason ASDWA is not recommending major changes in monitoring locations for the LT-LCR, so that valuable historical information remains useful.

Existing requirements for review of CCT for new sources and treatment changes should remain. Effective CCT by water systems, as well as appropriate state oversight of CCT, is critical. This includes monitoring water quality parameters and reviewing the CCT process when sources or other treatment processes change.

ASDWA recommends that regulatory requirements for water quality parameter (WQPs) monitoring be strengthened, based on the latest science on corrosion control and improved guidance for setting WQPs. ASDWA recommends increasing the number and frequency of WQP monitoring to better manage CCT. Adequate numbers of WQP samples, routinely collected at representative sites in the distribution system, provide an ongoing means of assuring that water systems maintain CCT. Sampling for WQPs at RTCR and DBP sites may be used to help manage the potential PWS burden for an increase in WQP monitoring. In addition, an expanded suite of WQPs may be monitored for a time to support the water quality assessment proposed in the "bins" approach. To support this recommendation for enhanced WQP monitoring, EPA should include adequate WQP tracking capabilities in the new SDWIS Prime data system currently under development.

In finalizing the LT-LCR, ASDWA recommends that EPA carefully consider the most appropriate method to address CCT in non-transient non-community systems (NTNCs). In NTNCs, the water is delivered through premise plumbing rather than a more traditional community water system distribution system. If a different approach to corrosion control is needed for these systems, then the rule should allow flexibility for NTNCs to take a different approach. A new rule also needs to consider the changes in water quality that can take place in consecutive systems. Long residence times can change water quality for pH, corrosion inhibitors and other parameters that can impact water corrosion. This is another area where EPA can share their corrosion control expertise and develop the appropriate guidance.

Wastewater issues resulting from phosphate addition are a serious concern that must be considered in the LT-LCR, especially if phosphate addition is proposed to be the default CCT. In any CCT approach, simultaneous compliance with all regulations must be appropriately considered. Treatment changes for one rule can easily impact compliance with other rules. As previously discussed, the Washington, DC crisis in the early 2000's is probably the most obvious example, noting that the crisis resulted from a treatment change to comply with Disinfection By-Product (DBP) regulations. It's easy to overlook the impact on the wastewater discharges when considering simultaneous compliance, but when phosphate addition is the corrosion control choice, the impact on wastewater must be examined. Increasingly restrictive wastewater effluent limits for phosphates are being put in place to control nutrients in streams and lakes. The phosphate contribution from drinking water, even if small, could cause the wastewater system to exceed its discharge limits and require installation of expensive nutrient removal treatment. The regulatory frameworks of both the Clean Water Act (CWA) and the SDWA must be integrated into the final LT-LCR. These wastewater impacts must be considered when water systems are evaluating CCT, when states are reviewing CCT proposals, and EPA needs to include those considerations in guidance for the LT-LCR. Failure to make a realistic assessment for CWA implications for mandated addition of phosphate-based corrosion inhibitors in the LT-LCR would be a mistake.

One of the opportunities and challenges EPA requested comment on is a potential default CCT. There could be some advantages with a default CCT in terms of reduced time for system planning and state review. If EPA can develop a science-based default treatment that can be easily applied to many water systems, then states could support this option. However, the preceding discussion shows how a default, at least one using phosphate addition, has challenges. Even though a default eases the process of selecting corrosion control, the treatment process must still be properly operated and maintained and WQPs set at appropriate levels. EPA should suggest, but not mandate, a default treatment and leave it to states to determine where it might be used.

Another question posed by EPA is related to plumbed-in point-of-use (POU) devices. These devices could be employed to reduce lead exposure in situations where LSLs are in place. These devices can reduce lead in the taps where they are installed. ASDWA recognizes this value and there can be situations where plumbed-in POU devices could be used, especially if that is the customer's choice. POU devices should be included in any public education material as an option for customers to reduce lead exposure. However, it should not be mandated by the LCR. It's too complicated for water systems, at least if existing POU guidance is followed, to manage POU devices. POU devices may be feasible for very small systems, but not universally. In fact, some states do not allow use of these devices for compliance. POU devices should only be considered in very limited circumstances, if at all, and should not be mandated but left to state discretion.

Corrosion control, taken in concert with other lead reduction approaches, will be a significant tool in the LT-LCR. There are opportunities to make improvements to the current rule by placing more emphasis on WQPs and using a binning process to help determine when CCT and other corrective measures are appropriate. It also offers another opportunity for EPA to provide

improved guidance to assist systems and states to maximize the effectiveness of CCT. One size doesn't fit all water systems, and states will need guidance from EPA on selecting and implementing the correct approach.

Transparency and Public Education

The 1991 LCR provides a good starting point for public outreach and education. The Water Infrastructure Improvements for the Nation (WIIN) Act enhances the transparency of lead results and lead action levels. ASDWA recommends building on these existing regulatory requirements. Water systems should continue the existing consumer notifications, Consumer Confidence Report (CCR) messages, and PE distributions and continue to certify to the state what they have done. The revised rule should tighten the timelines rather than making wholesale changes in this part of the existing LCR requirements. Whenever possible, using a consistent timeframe for response would also help simplify the rule and make it easier for water systems to comply. A more uniform process will also make it easier for the states to track compliance and ease their burden as well. For the LT-LCR, EPA should develop the model language, formats, and forms that can be used nationally.

Finding customers in high-risk homes who are willing to volunteer for lead sampling is a constant challenge. Since ASDWA recommends keeping most of the existing tap sampling regime, this challenge will continue. Public information materials must inform customers about lead and encourage them to become part of the sampling pool and continue to participate, even if their own data on lead levels are fine.

The use of flushing, pitcher filters, POU devices, and other measures to reduce personal risk should be included in any informational material for the public. EPA should develop these materials based on the latest scientific studies on the effectiveness of each tool. As part of the bin approach, ASDWA is recommending more targeted outreach to those with lead service lines. This group is at a higher risk and should be taking more action to reduce that risk. This includes more specific recommendations for flushing, filters or other means to reduce short term lead exposure and proactive lead service line replacement to reduce long term risk.

Any educational materials developed for the public, and especially for homeowners, must emphasize the shared responsibility between the homeowner and the public water system, and describe what the expectations are for each party. The materials must specifically outline steps customers can take to reduce their own lead risk, especially the unique situation of customers with lead service lines – specific actions that the customers can take must be clear. In addition, because sampling high-risk sites may concentrate monitoring in certain parts of the community, any public information should explain why locations are chosen and how those in other sections of town can also determine their lead exposure.

Another important group that should be included in this outreach is the plumbing industry. Plumbers are often the first party homeowners will contact with questions about lead. Plumbers may be asked to check for lead service lines and other lead in the home. Obviously, plumbers will be involved in lead service line replacement. EPA needs to reach out to national plumbing groups and develop information and training material about lead that can be shared nationally and locally. Public education material also needs to include information to help customers talk to

their plumber about managing lead in their home.

Completely resolving the problem of lead in drinking water is a long-term process that will likely take many years to complete. It is imperative that EPA develop curriculum and other educational materials for schools at all grade levels. Getting students involved at an early age will prepare them for their own response as adults but also can influence their parents to take more aggressive action now to reduce exposure to lead. Also, on the education side, schools and child care facilities need special attention. The facility or maintenance managers responsible for lead control may not be very familiar with lead issues and must be educated and re-educated on how to manage these risks. The existing 3-Ts guidance is a good start but EPA needs to examine what more may be needed to reach this audience.

Much of the information provided about lead is targeted in some way – individual home sample results; lead service line owners; schools; child care facilities; and local health agencies. However, EPA also needs to develop public service announcements and other broadly distributed material to be a constant reminder of the hazards of lead in water and what citizens can do to be better informed and reduce their risk.

The burden associated with tracking the 24-hour notice required by WIIN Act can be significant for states. This is an area where EPA needs to provide practical guidance on how to interpret the requirement. It should also allow states some flexibility in managing the process when conditions create delays that are beyond the control of the public water system.

Making tap sample results available to consumers beyond the individual homeowner is an important part of transparency. Water systems need to make good faith efforts to reach renters with individual lead results. In a broader context, the public needs to know about 90th percentile levels and the range of lead results being found in the community. Posting data on the internet is a much more available option now than it was when the original rule was developed. Many more water systems have publicly accessible websites where these data could be shared. Many states also have public facing websites where sample results from public water systems are displayed. If the state chooses to share lead results on their website, this state posting should be allowed to cover water systems that have a public posting requirement or option.

Tap Sampling

Tap sampling is one approach under the 1991 LCR to verify that CCT is effective in controlling lead releases in the drinking water. ASDWA supports the continuation of tap sampling for that purpose under the revised rule. ASDWA recommends that the site selection criteria remain the same for the new rule. Our bin approach is based on continued use of high-risk sites and our recommendations for an improved materials inventory support identifying the Tier 1 sites. It is important to note that evaluating lead exposure should not be confused with CCT evaluation and should have its own monitoring framework outside the LT-LCR.

ASDWA believes that every customer should know the lead levels in their own drinking water and encourages voluntary lead testing of homes by customers and water systems. However, ASDWA also believes that using only customer requested samples for compliance has the potential to dilute the sampling pool and would not provide as useful information about the

performance of CCT as using the existing high-risk selection criteria. Much valuable information about the effectiveness of corrosion control can be gained by review of trends in historical sample results, especially when the same sites are sampled repeatedly. Sampling conducted outside the monitoring plan may be used effectively for other purposes, but not to determine the 90th percentile and rule compliance.

ASDWA also believes that the existing sampling protocol of first draw samples (after stagnation) is the best single approach to sampling and will provide the most consistent results for compliance purposes. Sequential sampling and other approaches may be useful to determine the location or influence of lead service lines and leaded materials, or for other special studies, but not as the compliance approach.

As noted earlier, the selection of the sample sites is critical, and states expect to closely monitor both the materials inventory and the LT-LCR monitoring plan. ASDWA recommends using sites with lead service lines first, and going to other tier 1 sites, only when no more LSL sites are available. To assure continuing sampling at high-risk sites, systems should identify additional sites above the number required for initial monitoring. This makes it easier to move to another site when a homeowner drops out of the sampling pool. Close monitoring of this process will take a significant increase in resources compared to what has been invested under the current rule. These costs are reflected in our CoSTS model.

Systems should not be able to test multiple times at a low-lead sampling location at the end of monitoring period to lower their 90th percentile. Sampling multiple times at the same location in the same compliance period goes against the goals of both the existing LCR and the LT-LCR.

ASDWA supports the NDWAC recommendation to establish a household action level. A household action level can help states, water systems, local health agencies, and individual customers determine how significant the lead risk is and how quickly they must respond. It will also help determine what follow-up action is appropriate and when that action should be taken. ASDWA recognizes that EPA is taking a deliberate approach to developing this number and using the best available science. ASDWA supports this process and encourages EPA to complete its evaluation as soon as possible so the proposed LT-LCR can request comment on a possible household action level value. If this level is exceeded, it should be the water system's responsibility to inform the local health department. Responses to the household action level should be handled at the local level as much as possible. The process will be much faster, and the action better coordinated at the local level. However, states should be informed when the level is exceeded, and advised by the water system of the follow up actions they have taken. This can be done after the fact, to avoid slowing down the response. The ultimate response to any household action level exceedance is a determination by the local health department, where they can do more specific testing and gather additional data. State drinking water programs do not need to be involved in these actions unless requested by the local agency.

The "Find and Fix" approach should be better defined. It could be used to identify issues with a sampling location or reveal CCT issues affecting a portion (or all) of the distribution system. Using the "find and fix" approach to evaluate overall CCT throughout the distribution system may be a better use of the process under the LT-LCR. A similar approach could be used for

identifying specific monitoring problems or for supporting the household action level response by the local health agencies, but these would be secondary uses of the tool and may not fit as well in the LT-LCR.

The LT-LCR is not the appropriate vehicle, and public water systems are not the appropriate parties, for accomplishing school/day care center monitoring or a specific response by a school/day care center to high lead levels. This monitoring should be part of a separate program run by education and health agencies. EPA can play a significant role by bringing appropriate agencies together at the federal level and by continuing to provide educational material like the 3-Ts. EPA should also help identify funding for school testing and response. If there is not enough funding to correct problems, schools will be unable to respond to lead issues and may be reluctant to conducting testing at all.

Copper

Copper corrosion is fundamentally different than lead corrosion. Therefore, a high-risk sampling location for lead versus copper is different. Copper monitoring should be decoupled from lead. ASDWA recommends that systems that have corrosive water (as detailed below) identify separate copper compliance monitoring locations. ASDWA's CoSTS assumes that the number of copper compliance monitoring locations will be ½ of the required number of lead sampling locations. Simply doubling the number of sample sites is too great of a financial burden for both water systems and states. There is already a greater understanding of copper compared to lead. Therefore, fewer compliance sampling sites is acceptable.

The drinking water community already knows the differences between high-risk sample sites for copper versus lead. The LT-LCR should contain a waiver provision for water systems' tap sampling where sites with new copper aren't available as many small water systems don't have ongoing new construction. How would systems with no new construction comply with copper sampling requirements? The LT-LCR needs to recognize the lack of new construction, and EPA needs to provide guidance on selecting copper sampling sites.

ASDWA recommends that the LT-LCR use a binning for copper based on pH and alkalinity for aggressive water, per Figure 1 in the Roth, et al, paper (*Jour. AWWA*, 108:4:56, April 2016). ASDWA's CoSTS assumes that 50% of waters will be classified as non-corrosive using this binning approach. Water quality parameter (WQP) monitoring will be required to determine and maintain bin classifications.

Public education materials, as well as other regulatory requirements, will need to be revised in the LT-LCR to reflect the decoupling of lead and copper monitoring. This decoupling is necessary to reflect the fundamental technical differences between copper corrosion and lead corrosion.

Summary

ASDWA has provided detailed comments on the questions in the five categories presented at the January 8th Federalism Consultation Meeting, as well as providing an overall regulatory framework using "bins" that uses a progressively more stringent regulatory framework based on increasing levels of the 90th percentile of lead samples for 1-liter first draw tap samples. But much more work is needed, as there are many issues that warrant additional discussions. These

comments should be the starting point for additional dialogue between ASDWA's members (as co-regulators) and EPA. ASDWA anticipates additional discussions on the LCR Long-Term Revisions between March 8th and the publication of the proposed rule on the development of guidance for the proposed water quality assessment, and for the broader outreach effort, in the "bins" regulatory framework, as well as other issues that are key to the successful development and implementation of the LCR Long-Term Revisions.

Appendix A

Costs of States' Transactions Study (CoSTS) For Potential Lead and Copper Rule (LCR) Long-Term Revisions

Costs of States' Transaction Study (CoSTS) For Potential Long-Term Revisions to the Lead and Copper Rule (LT-LCR)

The Environmental Protection Agency (EPA) is in the process of evaluating several options for potential Long-Term Revisions to the Lead and Copper Rule (LT-LCR). EPA initially presented several options at a Federalism Consultation briefing on January 8, 2018 and requested comments by March 8, 2018. The Association of State Drinking Water Administrators (ASDWA) conducted this Costs of States' Transactions Study (CoSTS) as part of its comment development process for these regulatory options. The detailed spreadsheets included in this study calculate the estimated hours by the category of regulatory option presented at the January 8th meeting.

Any LT-LCR option that's selected by EPA will lead to increased workloads for the states – from tracking what is submitted to reviewing to ensure that it's correct 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 four most recent drinking water regulations have more treatment technique based regulatory frameworks than in the past. These newer regulations have been more complex for states to implement versus the traditional numerical Maximum Contaminant Levels (MCLs) in the older regulations:

- Stage 2 Disinfection By-Products Rule (DBPR) and Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR)
- Groundwater Rule (GWR); and
- Revised Total Coliform Rule (RTCR).

Each of these regulations requires states to investigate and/or review an investigation or assessment by a water system or consultant. The RTCR is probably the most comparable regulation to the options being considered for the LT-LCR due to its regulatory framework that has the water system or state personnel, or qualified assessor analyze the water system to determine what created the problem. The RTCR workload for the states is significant due to the complexities of the regulation and the need to conduct/review distribution system assessments. 8,306 Level 1 and Level 2 assessments were estimated to be conducted in 2015 (the first year of these corrective actions) by EPA's contractor (Cadmus), in cooperation with state representatives, for 49 states (Wyoming doesn't have primacy). The combined national RTCR workload for 49 states was estimated by Cadmus to be 784,218 hours for 2018 – this estimate includes these assessments but also includes several other RTCR implementation activities. These RTCR hours can be used to validate our estimates for the LT-LCR.

The total estimated increased workload for the states for the LT-LCR ranges from 3.6 million hours to 4.9 million hours for the first five years of the final revised LCR, depending on the Corrosion Control Treatment (CCT) option selected as detailed in the table below (the range of

CCT options is shown as Low (L) and High (H) Hours). These estimated hours need to be converted to an annual basis to better facilitate a comparison with EPA’s economic analysis, which leads to a range from 728,172 to 972,152 hours annually (note that this range brackets the RTCR hours for 2018 previously discussed). Assuming a loaded (direct and indirect costs) hourly rate of \$100 per hour for a state engineer, this translates to additional burden of \$73 million to \$97 million annually to states for the LT-LCR. Given the states’ ongoing challenges in meeting EPA’s requirements for the existing drinking water regulations, this is a significant increase. This potential increase exacerbates the gradual erosion of federal funding from the Public Water System Supervision (PWSS) program from \$105 million in FY 10 to \$102 million annually for the past four fiscal years (FY 14 to FY 17). This flat funding also doesn’t take inflation into account.

Summary of Estimated Hours for Potential Options for the LT-LCR

Category	Hours(L)	Hours(H)
Regulatory Start-Up	582,100	582,100
Lead Service Line Replacement (LSLR)	813,114	813,114
Corrosion Control Treatment (CCT)	10,430	1,230,328
Public Education & Transparency	555,102	555,102
Tap Sampling	1,479,457	1,479,457
Copper	581,487	581,487
Total from LCR Long-Term Revisions	4,021,690	5,241,588
<i>Current LCR Hours (2018)</i>	<i>380,830</i>	<i>380,830</i>
Increased Workload from LCR Revisions	3,640,860	4,860,758

A similar set of activities by state staff was used to develop the detailed estimate of hours for each of the above categories. The activities are:

- 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 above set of activities were repeated in the spreadsheets for the five categories, plus an additional category for “Regulatory Start-Up”, that were presented at EPA’s January 8th Federalism Consultation Meeting. The percentages for the different water system sizes, as well as the hours for each activity, were adjusted depending on the relative complexity of the specific regulatory requirements in each category.

The percentages and the hours for each activity in each category were developed by ASDWA staff (in consultation with some state staff) and then vetted with the ASDWA Board of Directors in February 2018. For example, the estimated hours per review for tap sampling plans compare to EPA's contractor (Cadmus) estimates for reviews of RTCR sampling plans. Estimates were also compared to the model developed for ASDWA's 2013 state drinking water resource needs report.

Some of ASDWA's members have taken actions such as reviewing materials 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, based on the 2016 Joel Beauvais' letters to governors and state environment and public health commissioners. However, these actions are strictly voluntary for the states that can take such actions. Many states have constitutional amendments or state-level policies such that their regulations must exactly match the federal regulations and are no more stringent than the federal regulations.

Given this restriction for many states, EPA should use the baseline hours and costs from the 1991 LCR and not consider any post-Flint actions by states. The current LCR hours in 2018, shown in italics in the above table, came from ASDWA's 2013 state drinking water resource needs report. This report estimated the hours for each regulation for 2012-2021, so this report provides us with an accurate estimate of the current LCR hours in 2018 based on the 1991 LCR. These baseline hours should be used as the starting point for the economic impact analysis for the LT-LCR.

The estimated number of hours above doesn't consider every potential regulatory component of the final LT-LCR. For example, additional hours needed by states to determine the initial "bin" placement from ASDWA's suggested "bins" regulatory option, or any progression down in "bins" based on a lower 90th percentile, were not included in the above estimate. Reviewing the data from water systems for an initial "bin" assignment, and then reviewing them on an ongoing basis, could be a sizeable number of hours that would likely increase the states' costs for the LT-LCR above the Public Water System Supervision (PWSS) program funding of \$102 million annually for the past four fiscal years (FY 14 to FY 17). If EPA is interested in continuing additional discussions with ASDWA on the "bin" regulatory option, then ASDWA would consider developing an estimate of those additional hours at some point in the future.

Obviously, the final estimated hours for the LT-LCR will depend on many factors, such as the regulatory option ultimately selected as well as how the compliance deadlines might be staggered during the regulatory start-up period. However, as previously discussed, any LT-LCR option that's ultimately selected by EPA will almost certainly lead to an increased workload for the states – it's just a question of how big the increase will be.

Funding options for states are limited, as funding for the states' ability to fulfill their mission of overseeing safe drinking water comes from four sources. Two primary sources are from EPA's Public Water System Supervision Program (PWSS) and the set-asides from EPA's Drinking Water State Revolving Loan Fund (DWSRF). The DWSRF funding has been essentially flat for the past decade, so that inflation has resulted in a significant funding decline from the DWSRF set-asides over the past decade. Some states have been able to compensate by raising

the dollars received from the DWSRF, but others already take the maximum percentage and must reduce expenditures. PWSS funding has gradually eroded for the past decade between inflation and a slight decline from \$105 million in FY 10 to \$102 million annually for the past four fiscal years (FY 14 to FY 17). The other two funding sources vary considerably from state to state and include funding from the state's general fund and fees from water systems for plan review, inspections, etc.

State drinking water programs have been chronically underfunded, on top of this gradual erosion of the DWSRF set-asides and the PWSS funding. ASDWA's 2013 state drinking water resource needs report estimated the funding gap of \$240 million for a minimum base program, and \$308 million for a comprehensive program that includes additional activities undertaken by states to achieve the public health protection vision and goals established by the SDWA. This report was a collaboration between EPA and ASDWA, using EPA's contractor (Cadmus) to collect the data (that was then validated by the states) and then generate the report. In an ideal world, funding for the PWSS program would be double what it is today (not including the final LT-LCR). This doubling of funding would need to be ramped up over a period of five to ten years to allow states and water systems to increase capacity for the appropriate activities that achieve the public health goals envisioned by the SDWA.

ASDWA estimates that the costs of states' staff time for the LT-LCR would be in the range of 72%-95% of the current PWSS funding. Given the uncertainties surrounding what the final LT-LCR will look like, this percentage could easily reach 100% of the current PWSS funding. Given the likely increased workload and the additional hours for state staff from the LT-LCR, states could be facing tough choices for their drinking water program – what NOT to do given these new regulatory mandates. ASDWA supports moving forward with the LT-LCR to update and modernize the 1991 LCR but additional funding should be part of the final LT-LCR. Otherwise, the final LT-LCR will be an unfunded mandate for states.

**Summary of Estimated Hours for Options for Potential Long-Term Revisions to the Lead and Copper Rule (LT-LCR)
 Costs of States Transactions Survey (CoSTS)
 Association of State Drinking Water Administrators (ASDWA)**

3/8/18 Version

The below is based on the five categories of options from EPA's Federal Consultation briefing on 1/8/18, plus an additional category for regulatory start-up

The total hours are estimated for the first five years of the LT-LCR

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

The total hours don't include any estimates from the "bins" regulatory framework that are part of ASDWA's written comments

Estimated hours for Corrosion Control Treatment (CCT) are shown as a range (low-high), given the number of potential CCT options

Regulatory Start-Up	582,100	
Lead Service Line Replacment (LSLR)	813,114	
	Low	High
Corrosion Control Treatment (CCT)	10,430	1,230,328
Public Education & Transparency	555,102	
Tap Sampling	1,479,457	
Copper	581,487	
Totals	4,021,690	5,241,588
Current LCR Hours (2018)	76,166	times 5 Years 380,830
Increased Hours from the LT-LCR (Total from first five years)	3,640,860	4,860,758
Annual Increased Hours (Each year for the first five years)	728,172	972,152

Regulatory Start-Up

Model Inputs
Model Outputs

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

Adoption of Long-Term Revisions to Lead and Copper Rule (LT-LCR)

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

Modify State Data Management System

Unclear how SDWIS Prime might accommodate LT-LCR 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 LT-LCR

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

Hours Ea. Total Hours

	Hours Ea.	Total Hours
Large	9	2,000
Medium	20	1,000
Small	20	500
Total	49	48,000

Not Wyoming or DC

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

Total Regulatory Start-Up 582,100

Lead Service Line Replacement (LSLR)

	# of systems
Large systems >50,000	943
Medium 3,301-50,000	8,296
Small 25-3,300	70,657
Total number of systems	79,896

	Systems with LSL
Complex LSL Inventories & LSLR Plans	700
Moderate LSL Inventories & LSLR Plans	5,000
Simpler LSL Inventories & LSLR Plans	5,500
Total number of systems with LSL	11,200

	Systems without LSL
	243
	3,296
	65,157
Total no. of systems without LSL	68,696

Model Inputs Model Outputs

Initial tracking, review and follow-up for LSL inventories - complexity of inventories based on system size and whether system has LSL 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 30% of LSLR inventories 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

	Large Systems with LSL	Hours Ea.	Total Hours
Tracking	700	2	1,400
Review	700	16	11,200
Follow-up	15%	4	420
Reporting	700	0.5	350
Violations	2%	4	56
Return to Compliance	14	4	56
Periodic LSL	210	8	1,680
Inv. Re-eval.	30%	15,162	4,548.6
Total			15,162

	Medium Sys. with LSL	Hours Ea.	Total Hours
Tracking	5,000	2	10,000
Review	5,000	8	40,000
Follow-up	25%	4	5,000
Reporting	5,000	0.5	2,500
Violations	20%	4	4,000
Return to Compliance	1,000	4	4,000
Periodic LSLR	1,500	6	9,000
Plan Re-eval.	30%	74,500	22,350
Subtotal			74,500
Total			89,662

	Small Sys. with LSL	Hours Ea.	Total Hours
Tracking	5,500	2	11,000
Review	5,500	4	22,000
Follow-up	40%	4	8,800
Reporting	5,500	0.5	2,750
Violations	33%	4	7,260
Return to Compliance	1,815	4	7,260
Periodic LSLR	1,650	3	4,950
Plan Re-eval.	30%	64,020	19,206
Subtotal			74,500
Total			153,682

	Large Systems without LSL	Hours Ea.	Total Hours
Tracking	243	2	486
Review	243	4	972
Follow-up	10%	4	97
Reporting	243	0.5	122
Violations	2%	4	19
Return to Compliance	5	4	19

	Medium Sys. without LSL	Hours Ea.	Total Hours
Tracking	3,296	2	6,592
Review	3,296	3	9,888
Follow-up	10%	4	1,318
Reporting	3,296	0.5	1,648
Violations	10%	4	1,318
Return to Compliance	330	4	1,318

	Small Sys. without LSL	Hours Ea.	Total Hours
Tracking	65,157	2	130,314
Review	65,157	2	130,314
Follow-up	20%	4	52,126
Reporting	65,157	0.5	32,579
Violations	20%	4	52,126
Return to Compliance	13,031	4	52,126

Total 1,716

Subtotal 22,083

Total 23,799

30%

Subtotal 1,716

Total 23,799

Total 1,716

Subtotal 22,083

Total 473,382

Subtotal 449,583

Total 473,382

Assume 30% of LSLR plans would need to be re-evaluated periodically (same as for inventories)
 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.

Large Systems	Hours Ea.	Total Hours	Medium Systems	Hours Ea.	Total Hours	Small Systems	Hours Ea.	Total Hours
Tracking			Tracking			Tracking		
# of systems	712	2 1,424	# of systems	5,165	2 10,330	# of systems	8,758	2 17,516
Review			Review			Review		
	712	16 11,394		5,165	8 41,318		8,758	4 35,031
Follow-up			Follow-up			Follow-up		
10%	71	4 285	10%	516	4 2,066	25%	2,189	4 8,758
Reporting			Reporting			Reporting		
	712	0.5 356		5,165	0.5 2,582		8,758	0.5 4,379
Violations			Violations			Violations		
2%	14	4 57	20%	1,033	4 4,132	33%	2,890	4 11,560
Return to			Return to			Return to		
Compliance	14	4 57	Compliance	1,033	4 4,132	Compliance	2,890	4 11,560
Periodic LSLR			Periodic LSLR			Periodic LSLR		
Plan Re-eval.	214	8 1,709	Plan Re-eval.	1,549	6 9,297	Plan Re-eval.	2,627	3 7,882
30%	Total	15,283	30%	Subtotal	73,857	30%	Subtotal	96,687
				Total	15,283		Total	73,857
								15,283
								185,826

Initial tracking, review and follow up for pitcher filter distribution plans

Systems with LSLs	Hours Ea.	Total Hours
Tracking		
# of systems	11,200	2 22,400
Review		
	11,200	2 22,400
Follow-up		
10%	1,120	1 1,120
Reporting		
	11,200	0.5 5,600
Violations		
2%	224	1 224
Return to		
Compliance	224	1 224
	Total	51,968

Total Lead Service Line Replacement 813,114

Corrosion Control Treatment

	# of systems
Large systems >50,000	943
Medium 3,301-50,000	8,296
Small 25-3,300	70,657
Total number of systems	79,896

Complex CCT
Moderate CCT
Simple CCT

Model Inputs Model Outputs

Initial tracking, review and follow-up based on different regulatory triggers
Assume 10% of CCT plans would need to be re-evaluated periodically

	# of systems
Option 1 >50,000	943
Option 2 >10,000	8,296
Option 3 >3,300	70,657
Option 4 w LSLs	11,200

	Option 1	Option 2	Option 3	Option 4	Total
Tracking	943	943	943	11,200	11,200
# of systems	943	943	943	11,200	11,200
Review	40	4	4	16	16
Follow-up	40	4	4	16	16
25% Reporting	236	2,074	35,329	2,800	2,800
Violations	943	8,296	70,657	11,200	11,200
2% Return to Compliance	19	1,659	23,317	2,240	2,240
Periodic CCT Re-eval.	19	1,659	23,317	2,240	2,240
10% Total	94	830	7,066	1,120	1,120
Hours Ea.	40	4	4	16	16
Total Hours	37,720	8,296	16,592	132,736	141,314
Hours Ea.	4	4	4	16	4
Total Hours	472	6,637	4,148	35,329	48,186
Violations	19	1,659	23,317	2,240	2,240
Return to Compliance	19	1,659	23,317	2,240	2,240
Periodic CCT Re-eval.	94	830	7,066	1,120	1,120
10% Total	94	830	7,066	1,120	1,120
Hours Ea.	40	4	4	16	40
Total Hours	44,943	188,319	188,319	44,943	1,048,644

In-line POU Option for Systems with LSLs

Tracking	11,200	2	22,400
# of systems	11,200	6	67,200
Review	11,200	4	11,200
25% Reporting	2,800	0.5	5,600
Violations	11,200	4	8,960
20% Return to Compliance	2,240	4	8,960
10% Total	2,240	4	8,960
Hours Ea.	4	4	115,360
Total Hours	2,240	4	115,360

Default CCT Option

Assume no state review of default CCT - only review of system-demonstrated equivalence
Assume same system size triggers as above, with an assumed percentage (20%) using system-demonstrated equivalence
Assume 10% of CCT plans would need to be re-evaluated periodically

Option 1	Hours Ea.	Total Hours	Option 2	Hours Ea.	Total Hours	Option 3	Hours Ea.	Total Hours
Tracking	943	2	8,296	2	16,592	70,657	2	141,314
# of systems	189	20	1,659	8	13,274	14,131	4	56,526
Review	47	8	415	4	1,659	7,066	2	14,131
Follow-up	20%	3,772	20%	8	13,274	20%	4	56,526
Reporting	25%	377	25%	4	1,659	50%	2	14,131
Violations	943	0.5	8,296	0.5	4,148	70,657	0.5	35,329
Return to	19	4	1,659	4	6,637	23,317	4	93,267
Compliance	19	4	1,659	4	6,637	23,317	4	93,267
Periodic CCT	94	40	830	16	13,274	7,066	4	28,263
Re-eval.	10%	10,430	10%	16	55,583	10%	4	462,097
Total			Subtotal		10,430	Subtotal		55,583
			Total		66,013	Total		10,430
								528,110

Find-and-fix Option, with an assumed % of systems to find and fix exceedances of AL

of system: 79,896 % to fix: 30% 23,969

Option 1	Hours Ea.	Total Hours	Option 2	Hours Ea.	Total Hours	Option 3	Hours Ea.	Total Hours
Tracking	23,969	2	47,938					
# of systems	23,969	4	95,875					
Review	5,992	4	23,969					
Follow-up	23,969	0.5	11,984					
Reporting	2%	479	4	1,918				
Violations	479	4	1,918					
Return to	479	4	1,918					
Compliance	479	4	1,918					
Total			181,684					

Total Corrosion Control Treatment	Standard	Default	Find-and-Fix	Std. & FF	Default & FF
Option 1	44,943	10,430	181,684	226,627	192,113
Option 2	233,263	66,013	181,684	414,946	247,696
Option 3	1,043,644	528,110	181,684	1,230,328	705,793
Option 4	254,240		181,684	435,924	
In-Line POU		115,360			

Public Education and Transparency

	# of systems
Large systems >50,000	943
Medium 3,301-50,000	8,296
Small 25-3,300	70,657
Total number of systems	79,896

Initial tracking, review and follow-up on water systems' public education and transparency plans
 Assume systems with lead service lines (11,200) will have ongoing outreach with emphasis on homeowners with LSLs
 Assume systems will provide notification to customers within 24 hours of exceedance of lead action level
 Assume a small percentage of systems (20%) won't complete notifications and states will have to notify
 Assume systems will make information accessible to customers on results of all tap samples and WQP sampling

Large Systems	Hours Ea.	Total Hours	Medium Systems	Hours Ea.	Total Hours	Small Systems	Hours Ea.	Total Hours
Tracking			Tracking			Tracking		
# of system	943	2 1,886	# of system	8,296	2 16,592	# of system	70,657	2 141,314
Review			Review			Review		
	943	4 3,772		8,296	3 24,888		70,657	2 141,314
Follow-up			Follow-up			Follow-up		
10%	94	4 377	10%	830	2 1,659	10%	7,066	2 14,131
Reporting			Reporting			Reporting		
	943	0.5 472		8,296	0.5 4,148		70,657	0.5 35,329
Violations			Violations			Violations		
2%	19	4 75	5%	415	4 1,659	10%	7,066	4 28,263
Return to			Return to			Return to		
Complianc	19	4 75	Complianc	415	4 1,659	Complianc	7,066	4 28,263
Periodic Plan			Periodic Plan			Periodic CCT		
Re-eval.	94	40 3,772	Re-eval.	830	16 13,274	Re-eval.	7,066	4 28,263
10%		Total 10,430	10%		Subtotal 63,879	10%		Subtotal 416,876
					10,430			63,879
			Total		74,309	Total		10,430
								491,185

WIIN Notifications

Assume states will make 20% of WIIN Notifications

Large Systems Notifications	Hours Ea.	Total Hours
# of system	189	4 754

20%

Medium Systems Notifications	Hours Ea.	Total Hours
# of system	1,659	4 6,637

Small Systems Notifications	Hours Ea.	Total Hours
# of system	14,131	4 56,526
		Total
		63,917

Total for Public Education & Transparency 555,102

Tap Sampling

	# of systems
Large systems >50,000	943
Medium 3,301-50,000	8,296
Small 25-3,300	70,657
Total number of systems	79,896

Complex Sampling Plans
Moderate Sampling Plans
Simple Sampling Plans

Model Inputs Model Outputs

Initial tracking, review and follow-up on sampling plans

Assume 10% of sampling plans would need to be re-evaluated periodically

Large Systems Tracking	Hours Ea.	Total Hours
# of systems	943	2 1,886
Review	943	16 15,088
Follow-up		
15%	141	4 566
Reporting	943	0.5 472
Violations		
2%	19	4 75
Return to Compliance	19	4 75
Periodic Plan Re-eval.	830	8 6,637
10%	Total	24,799

Medium Systems Tracking	Hours Ea.	Total Hours
# of systems	8,296	2 16,592
Review	8,296	8 66,368
Follow-up		
25%	2,074	4 8,296
Reporting	8,296	0.5 4,148
Violations		
20%	1,659	4 6,637
Return to Compliance	1,659	4 6,637
Periodic Plan Re-eval.	830	6 4,978
10%	Subtotal	113,655
	Total	24,799
	Total	138,454

Small Systems Tracking	Hours Ea.	Total Hours
# of systems	70,657	2 141,314
Review	70,657	4 282,628
Follow-up		
40%	28,263	4 113,051
Reporting	70,657	0.5 35,329
Violations		
33%	23,317	4 93,267
Return to Compliance	23,317	4 93,267
Periodic Plan Re-eval.	7,066	3 21,197
10%	Subtotal	780,053
	Subtotal	113,655
	Total	24,799
	Total	918,507

Notification(s) of household action level exceedance

Initial tracking, review and follow-up on notification plans

Assume 10% of notification plans would need to be re-evaluated periodically

Large Systems Tracking	Hours Ea.	Total Hours
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Medium Systems Tracking	Hours Ea.	Total Hours
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Small Systems Tracking	Hours Ea.	Total Hours
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# of systems	943	2	1,886
Review	943	4	3,772
Follow-up	236	2	472
Reporting	943	0.5	472
Violations	19	2	38
Return to	19	2	38
Compliance	94	2	189
Periodic Plan			
Re-eval.	94	2	189
10%			6,865
Total			6,865

# of systems	8,296	2	16,592
Review	8,296	3	24,888
Follow-up	2,074	2	4,148
Reporting	8,296	0.5	4,148
Violations	1,659	2	3,318
Return to	1,659	2	3,318
Compliance	830	2	1,659
Periodic Plan			
Re-eval.	830	2	1,659
10%			58,072
Subtotal			6,865
Total			64,937

# of systems	70,657	2	141,314
Review	70,657	2	141,314
Follow-up	35,329	2	70,657
Reporting	70,657	0.5	35,329
Violations	23,317	2	46,634
Return to	23,317	2	46,634
Compliance	7,066	2	14,131
Periodic CCT			
Re-eval.	7,066	2	14,131
10%			496,012
Subtotal			58,072
Total			6,865
Total			560,949

Total Tap Sampling 1,479,457

Copper

Model Inputs Model Outputs

of systems Non-Corrosive # of systems to sample for copper

Large systems >50,000	943	50%	472
Medium 3,301-50,000	8,296	50%	4,148
Small 25-3,300	70,657	50%	35,329
Total number of systems	79,896		

Initial tracking, review and follow-up on copper sampling plans

Assume the number of copper sampling sites would be half of lead sampling sites - state review time half of lead review
Assume 10% of sampling plans would need to be re-evaluated periodically

Large Systems Tracking	Hours Ea.	Total Hours	Medium Systems Tracking	Hours Ea.	Total Hours	Small Systems Tracking	Hours Ea.	Total Hours		
# of system	472	2	943	4,148	2	8,296	35,329	2	70,657	
Review	472	12	5,658	4,148	6	24,888	35,329	2	70,657	
Follow-up										
15%	71	4	283	622	4	2,489	25%	8,832	4	35,329
Reporting	472	0.5	236	4,148	0.5	2,074	Reporting	35,329	0.5	17,664
Violations							Violations			
2%	9	4	38	830	4	3,318	33%	11,658	4	46,634
Return to							Return to			
Complianc	9	4	38	830	4	3,318	Complianc	11,658	4	46,634
Periodic Plan							Periodic Plan			
Re-eval.	47	8	377	415	6	2,489	Re-eval.	3,533	3	10,599
10%							10%			
Total			7,572			46,872	Subtotal			298,173
						7,572				46,872
						54,445	Total			7,572
										352,617

Initial tracking, review (simple), and follow-up for the other half of systems with non-corrosive water

Large Systems Tracking	Hours Ea.	Total Hours	Medium Systems Tracking	Hours Ea.	Total Hours	Small Systems Tracking	Hours Ea.	Total Hours	
# of system	472	2	943	4,148	2	8,296	35,329	2	70,657
Review	472	2	943	4,148	2	8,296	35,329	2	70,657

Follow-up	71	2	141
15%			
Reporting	472	0.5	236
Violations			
2%	9	2	19
Return to			
Complianc	9	2	19
Periodic Plan			
Re-eval.	47	2	94
10%			
Total			2,395

Total for copper 581,487

Follow-up	622	2	1,244
15%			
Reporting	4,148	0.5	2,074
Violations			
5%	207	2	415
Return to			
Compliance	207	2	415
Periodic Plan			
Re-eval.	415	2	830
10%			
Subtotal			21,570
			2,395
Total			23,965

Follow-up	8,832	2	17,664
25%			
Reporting	35,329	0.5	17,664
Violations			
15%	5,299	2	10,599
Return to			
Complianc	5,299	2	10,599
Periodic CCT			
Re-eval.	3,533	2	7,066
10%			
Subtotal			204,905
			21,570
Total			228,870

Appendix B

Summary Recommendations from ASDWA Report On Insufficient Resources to Drinking Water Programs Threaten Public Health

The Corps of Engineers' renewed focus on risk-based decision making

February 20, 2018

Last June, James Dalton, Director of Civil Works with the Army Corps of Engineers, issued a [memorandum \(https://planning.erdcdren.mil/toolbox/library/MemosandLetters/17Jun21-AdvancingCWProjectDelivery.pdf\)](https://planning.erdcdren.mil/toolbox/library/MemosandLetters/17Jun21-AdvancingCWProjectDelivery.pdf) designed to help the Corps of Engineers streamline several processes. The focus of this memo was to encourage greater reliance on risk-based decision making and more focus on proper areas of decision making at levels within USACE. Specifically:

“The desired outcome is to identify opportunities for enhanced project delivery and increased organizational efficiency and effectiveness by reducing redundancies and delegating authority for decision making to the most practical and appropriate level.... I intend to operationalize risk-informed decision making at all levels....”

[Goals include:]

- “Embrace and operationalize risk-informed decision making”
- “Make, justify, and document decisions at the most appropriate levels”
- “Synchronize headquarters functions to support MSC and district project delivery”
- “Integrate and synchronize agency policy and guidance”

On January 18, I spoke to the California Marine Affairs and Navigation Conference (CMANC) about the issues raised in this memorandum. CMANC is a consortium of California harbors, ports and marine interest groups that advocates for projects often overseen by the Corps of Engineers.

The problem facing USACE is that too many issues were being elevated to Washington instead of being resolved at the District or even the Division levels. This was likely caused by a reliance on “Risk Avoidance” rather than “Risk Management” in decision making.

CMANC executive director James Haussener began by noting my recent Dawson [blog \(http://www.dawsonassociates.com/litigation-hits-the-corps-of-engineers-for-hurricane-harvey-controlled-releases-was-this-a-taking/\)](http://www.dawsonassociates.com/litigation-hits-the-corps-of-engineers-for-hurricane-harvey-controlled-releases-was-this-a-taking/) on Takings that I had 30 years experience as District Counsel for the Los Angeles District Army Corps of Engineers and wondered if my past experience differed. It certainly did. At CMANC, I presented several examples of how controversial decisions had been made at the lowest possible level, Corps Districts.

District Commanders are trained as Combat Engineers with the need to execute a Mission after analyzing alternatives and risks. Their goal is to choose the alternative with the lowest risk while still accomplishing the mission. Typically, risk avoidance is not an option.

Operating and Support Managers within the District supported that process by engaging in risk management decisions within their scope of responsibility and/or providing the District Commanders with risk based management alternatives, rather than utilizing risk avoidance. The common thread during my experience as District Counsel and since I retired are District Commanders. They were and are still trained to make risk based management decisions.

But during the past decade, several organization changes have occurred. Before, the District Counsel, Chief of Contracting, Resource Management Officer, and Human Resources worked FOR the Commander. Now, all of these organizations report to their Division counterparts – they work for them, not the Commander.

Also, in the past, District Commanders were our “Bosses.” They did the hiring and firing and rated our performance. Now these functions are performed at the Division level. That inherently requires coordinating much more closely with the Division and thus getting it involved in the decision making process.

Divisions in turn now apparently coordinate more closely with Headquarters getting it involved. As a result, in my opinion, the more fingerprints involved in the decision document process, the more likely such decisions will be made at a higher level. This causes delays and higher costs in project execution and is a major concern.

Mr. Dalton's intent to change this culture by using training and other methods both vertically and horizontally throughout the Corps organization should be applauded. But it remains to be seen whether civilian members will accept making risk based management decisions with solely their name on the document.

In my opinion, success for Mr. Dalton's initiative would be greatly enhanced by reorganizing back to the previous structure where the District/Division Commanders were the “Boss” rather than merely a “Client.” That system worked for decades and should be embraced again.



Stephen Temmel at CMANC

Steve Temmel
Senior Advisor