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Andrew Wheeler, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

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The American Society of Civil Engineers (ASCE) is pleased to offer the following comments on the *Lead and Copper Proposed Rule*. The U.S. Environmental Protection Agency (EPA) announced the proposal on October 10, 2019 and published the *Lead and Copper Proposed Rule* in the Federal Register for comment on November 13, 2019, with the comment period closing on February 12, 2020. This is the first major update to the Lead and Copper Rule since 1991. This letter contains the comments of ASCE for the record.

## Introduction

Founded in 1852, ASCE is the country's oldest civil engineering organization. Representing more than 150,000 civil engineers from private practice, government, industry, and academia, ASCE is dedicated to the advancement of the science and practice of engineering. ASCE members represent the profession that plans, designs, and builds much of the nation's infrastructure. As a result, civil engineers are keenly aware of and often most affected by regulations that either facilitate or impede expeditious, cost efficient, and environmentally effective infrastructure development to support our modern society.

Every four years, ASCE publishes the *Infrastructure Report Card,* which grades the nation's 16 major infrastructure categories using a simple A to F school report card format. The Report Card examines the current infrastructure needs and conditions, assigning grades and making recommendations to raise them. ASCE's *2017 Infrastructure Report Card* gave our nation's drinking water infrastructure a grade of "D," while our nation's wastewater infrastructure grade did not fare much better with a grade of "D+."

According to ASCE Policy Statement 361 (Safe Drinking Water) the Society "recommends specific programs and funding for water quality improvements for removal of lead in water systems prioritizing lead line, service line, and/or plumbing removal or replacement, targeting systems with the highest concentration exceedances of lead and copper."

## ASCE Comments on the Lead and Copper Proposed Rule

The quality of our nation's water supply is one the most important achievements of the civil engineering profession in the 20th century. In 1997, *Life* magazine said that the filtration and

disinfection of drinking water represents "probably the most significant public health advance of the millennium." In 2000, the National Academy of Engineering included safe water supply and treatment among the greatest engineering achievements of the 20th century. In the United States, the vast majority of our public water systems routinely meets or exceeds all federal standards for drinking water.

However, our nation's drinking water systems face staggering public investment needs over the next several decades. According to the American Water Works Association[1], $1 trillion will be needed to maintain and expand drinking water service demands during the next 25 years. Failures in drinking water infrastructure can result in water disruptions, impediments to emergency response, and damage to other types of essential infrastructure. Every day, nearly six billion gallons of treated water is lost due to leaking pipes, with an estimated 240,000 water main breaks occurring each year[2]. In fact, it is estimated that leaky, aging pipes waste 14 to 18% of each day's treated drinking water – enough to support 15 million households[3].

Since the mid-1970s, money from local and state governments has represented an increasing percentage – nearly 95 percent – of public drinking water and wastewater investment[4]. Cities and towns across the country report that complying with federal drinking water and wastewater regulations represent some of their costliest capital infrastructure projects. Yet of the major infrastructure categories the federal government funds, water services receive less than 5 percent. While the Flint, Michigan and Newark, New Jersey water crises have been in the headlines recently, there remains a potential for exposure to lead and copper from existing infrastructure. Many of the pipes that deliver drinking water in the nation were laid in the early to mid-20th century with a lifespan of 75 – 100 years. Lead was common in pipes and fixtures through the mid-20th century. In fact, lead service lines between the public water mains and residences and businesses remain in service in many of our nation's oldest cities.

This proposed rule attempts to tackle a complex issue with elements related to public health, environmental justice, public-private aspects of water distribution, and cost and cost incidences. It is widely recognized that any level of exposure to lead can be detrimental to the development of young children, and low income populations are more likely to be exposed to lead in their residences due to housing age and the greater potential for existing lead service lines in low income housing. The potential for lead exposure is complicated by the possible presence of lead lines and solder in the lines leading from the mains to the meter or house and the internal premise plumbing. Furthermore, widespread replacement of lead-containing elements of the distribution system undoubtedly will result in significant costs. The question of who should bear these costs (government, water utilities, private owners) must be addressed in an equitable manner.

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[1] American Water Works Association, Buried No Longer: Confronting Americas Water Infrastructure Challenge, February 2012

[2] Environmental Protection Agency, Information About Public Water Systems. https://www.epa.gov/dwreginfo/information-about-public-water-systems

[3] Center for Neighborhood Technology, The Case for Fixing the Leaks: Protecting people and saving water while supporting economic growth in the Great Lakes region, November 2013

[4] Congressional Budget Office, Public Spending on Transportation and Water Infrastructure, 1956 to 2014, March 2015

ASCE thanks the EPA for its attempt to update the Lead and Copper Rule, and thus, to limit the public's exposure to these contaminants. We are, however, concerned this proposed rule could result in an undue financial hardship for low income and/or elderly communities whose populations are at a higher risk for negative health impacts from lead in drinking water. We want to ensure that these communities are not left behind as lead service line replacements are made. It is our duty as civil engineers to protect the public health and welfare, and as such, we support funding and programs for economically disadvantaged communities to assist with customer-owned lead service line replacements. We urge Congress to identify new funding streams for water utilities, private owners, and government entities; more fully appropriate existing funding streams; and make the funding process less burdensome for recipients.

**Lead Service Line Inventory**

ASCE appreciates the need to develop a complete national inventory of lead service lines. However, many utilities, especially smaller to mid-size systems, face both economic and jurisdictional issues in accomplishing this inventory. Many systems do not have accurate records of service line materials or even of when these service lines were installed. Even where utilities have completed a GIS system and mapped water meters, this is often only for purposes of ensuring that meters and physical addresses are correlated for billing and modeling purposes. Many systems will have to inventory every service line in the system, unless a portion of the system is known to have been constructed after lead in public water systems was banned. Excavation will be required both upstream and downstream of each meter so that the actual service line material, as well as the meter yoke, can be checked. In many cases, these service lines are in pavement, or under sidewalks, further increasing the cost and complexity of completing the inventory.

In older systems, portions of the service line are often not located in public rights-of-way or easements. This poses jurisdictional issues for accessing the service lines, and the utility may be unable to gain access to inventory, or replace, the line.

Even with the increased use of "soft dig" equipment, a significant amount of time and effort will be required to inventory service lines. Staffing is not usually sufficient to allow the utilities to do this work, so the work will have to be contracted – at an additional expense to the utility. Where roads or sidewalks are impacted, the costs will increase further. While funding is available through multiple sources for water system improvements, including replacement of lead service lines, this initial investigatory work is not typically covered. We urge Congress to identify new funding sources, and to allow ample time, for utilities to be able to inventory all service lines.

Furthermore, we request that the EPA clarify and define what constitutes a lead service line (i.e., does it include the lines from a street to a residential home, the lines between the meter and the home, or the premise plumbing itself?). Only if the entire service line – both the public and private portions – is included in the inventory will there be enough information to reduce exposure to lead.

## Strengthening Treatment Requirements

ASCE understands that the EPA will revise requirements for corrosion control treatment based on tap sampling results and will establish a new "trigger level" of 10 parts per billion (ppb). At this trigger level, systems that currently treat for corrosion would require proactive planning. Systems that do not currently treat for corrosion would be required to conduct a corrosion control study so that the system is prepared to respond quickly when necessary.

ASCE recognizes that proper corrosion control techniques have historically been very successful in reducing lead and copper concentrations at the tap. Techniques such as proper control of system pH, pre-chlorination removal of hydrogen sulfide, and use of orthophosphates have been common and highly effective tools in utilities' toolboxes. Proper treatment helps protect against potential leaching of lead and copper both from the portions of the water system under the utility's control and the plumbing system beyond the utility's control. Where there have been significant issues with lead and copper exceedances, it is typically because existing corrosion control treatment recommendations were not followed.

Given that corrosion control has proved effective, ASCE agrees that a continued focus on improving and maintaining optimal corrosion control techniques is appropriate. However, water chemistry differs widely across the country, and it is important that utilities have the flexibility to deal with both site-specific requirements, as well as potential changes in source water. Although the use of a "trigger level" may be beneficial, it is not clear what additional benefit will occur beyond that achieved by current optimal corrosion control techniques. The scientific basis for the 10 ppb level is not clear and should be identified and adjusted if required.

Where further corrosion control studies are required, some level of technical assistance will need to be provided. A utility may be very successful in meeting the 15 ppb current limit with a relatively simple treatment technique such as orthophosphates. Requiring re-optimization may require a significant amount of testing and engineering to identify other treatment techniques with a limited benefit in reduction of concentration.

## Public Education and Sampling at Schools and Child Care Facilities

ASCE appreciates that schools and child care facilities are included in the proposed Lead and Copper Rule and in a way consistent with the 3Ts for Reducing Lead in Drinking Water Toolkit. We understand that under the proposed rule, Community Water System (CWS) are required to conduct public education (PE) with school and child care facilities, which constitutes the first T (training), and collect water samples from all schools under that system, which constitutes the second T (testing). We understand that although the CWS is not required to provide remediation, which constitutes the third T (taking action), the PE portion of the CWS' duties would include information on remediation. ASCE also understands that resources are available for funding testing and remediation at schools and child care facilities.

Providing PE to both schools and licensed child care facilities is important, but the method of identifying licensed child care facilities may raise compliance issues, especially for smaller utilities. In most cases, schools are dedicated structures that have been present in the community and are well known to many residents. These will be relatively simple to identify and contact.

On the other hand, licensed child care facilities may be much smaller, with a minimal number of children, and may be located in residential structures without signs. Unless there is some communication process where the licensing agency for these child care facilities is required to routinely provide this information to the water utilities, it will be very difficult for a water utility of any size to identify and contact all child care facilities.

The EPA has specifically requested comments on whether the new rule should require that all schools be tested or whether samples should be collected only when requested by the school. ASCE believes that it is reasonable to allow the schools to request sampling, especially if all of them will receive PE by the CWS. With proper PE, schools should be able to evaluate their level of risk and request sampling as necessary. This option would also reduce the cost burden on CWSs when the risk of lead exposure at certain schools is minimal.

**Conclusion**

ASCE thanks the EPA for its efforts to update the nation's Lead and Copper Rule. We recognize that the treatment of drinking water for contaminants is complex, and the development and implementation of such regulations must be made with appropriate flexibility to accommodate regional risk variations and small water system challenges. Federal funding for drinking water infrastructure remains stagnant, yet federal drinking water regulations are growing, resulting in increasing compliance costs for utilities. Affordability and equity hurdles loom large, so consideration must be made as to how to balance the cost of lead service line replacements among government entities, water utilities, and private owners, with extra care taken to ensure that low income populations do not bear a disproportionate burden of the financial costs of lead service line replacements or the potential health impacts of inaction. As civil engineers, we can also make recommendations on more affordable pipe rehabilitation, inline replacement, and new line replacement methods.

To ensure the requirements of a new Lead and Copper Rule can be met– and to fully protect the public from these contaminants – ASCE urges Congress to identity new funding sources and grant programs and to fully appropriate existing funding streams. The engineers ASCE represents work daily to ensure our nation's infrastructure protects the public health and welfare. We urge the agency to take our recommendations and concerns into consideration, and we ask that you do not hesitate to contact us if we can be of any assistance to you.