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Peter Grevatt
Director, Office of Ground Water and Drinking Water
1200 Pennsylvania Avenue, N. W.
Mail Code: 4601M
Washington, DC 20460

RE: Long-Term Lead and Copper Rule Federalism Consultation (Docket ID No. EPA-HQ-OW-2018-0007)

Dear Mr. Grevatt,

The Detroit Water and Sewerage Department (DWSD) of Detroit, Michigan appreciates the opportunity to offer comments to the U.S. Environmental Protection Agency as part of its federalism consultation on potential long-term revisions to the Lead and Copper Rule (LCR). Our system is a member of the American Water Works Association, a participating association in this federalism consultation, hence our submittal.

DWSD's service area has an estimated 2,700 miles of water mains serving a population of approximately 680,000, of whom over 35 percent have incomes below the U.S. federal poverty line. Detroit has an estimated 125,000 lead service lines (LSLs), aged and historically under-maintained water and sewer pipe networks, and high incidences of water and sewer line breaks.

The Great Lakes Water Authority (GLWA) – DWSD system, like all urban water suppliers, is complex. Public health protection is achieved through an array of functions (e.g., water treatment, transmission and distribution system operation) of which lead risk mitigation is but one aspect. Like many older U.S. cities, DWSD requires major system reinvestments to ensure its facilities can continue to deliver high quality potable water and provide adequate fire protection.

Water affordability is an acute issue in Detroit. Median residential monthly water, wastewater and drainage service costs are \$71.94 per month or 3.3 percent¹ of Detroiters' Median Household Income, and already represent a high burden.² Further rate increases will be required to both pay for GLWA

¹ Median monthly service bills as listed on DWSD website, Explanation of Residential Charges:

<http://www.detroitmi.gov/Portals/0/docs/DWSD/Explanation%20of%20Charges%20-%20Residential%20Customers-%202017%20FINAL.pdf?ver=2017-08-04-104826-767>, accessed January 17, 2018; Detroit Median Household Income in 2016 dollars based on U.S Census data:

<https://www.census.gov/quickfacts/fact/table/detroitcitymichigan/PST045217>, accessed January 17, 2018

² Bill amounts are based on average monthly residential water usage of 5 CCF. The "High Burden" designation is based on EPA financial capability assessment guidance that uses utility costs as a percentage of Median Household Income to determine levels of economic burden. See United States Environmental Protection Agency, "Combined Sewer Overflows — Guidance for Financial Capability Assessment and Schedule Development," EPA 832-B-97-004,

services and support reinvestments in DWSD's infrastructure systems. Though DWSD has among the nation's most comprehensive and compassionate customer assistance programs, there are limits to the extent these programs can insulate low-income users from burdens of system-wide rate increases. It is through this context of water affordability that DWSD must consider revisions to both the state and federal Lead and Copper Rules (LCR).

DWSD is committed to a program to minimize lead risks in drinking water, including full lead service line replacements (FLSLRs), as expeditiously as practicable. We anticipate effecting 1,000 to 3,000 FLSLRs per year in conjunction with our repair or replacement of 30 miles or more of non-lead water mains in our distribution system. We hope to increase the pace of these replacements in the event that appropriate funding is made available given that the total cost for lead service line replacements in Detroit is estimated at \$438 million to \$625 million.³ In the interest of minimizing near-term lead exposure risk, we are also implementing a variety of public communication and education measures, as well as changing operational protocols. DWSD is already advancing the intent of the proposed revisions to the Michigan LCR, and DWSD would like to see similar proactive measures become the norm across the water industry as part of the federal LCR.

The following sections present DWSD's responses to specific questions EPA presented at the Federalism Consultation Meeting.

What are the opportunities and challenges to state and local governments if EPA were to modify the LCR to:

– Require systems to create an inventory of lead service lines

The Detroit Water and Sewerage Department (DWSD) has made a proactive decision to begin a FLSLR program as a part of DWSD's comprehensive asset management-based infrastructure replacement program. Detroit has an estimated 125,000 of Michigan's 500,000 lead services. A critical starting point for an asset management program is an accurate inventory of assets and the condition of those assets. DWSD supports a requirement for water systems to create an inventory of lead service lines so they can notify customers of the risk of lead exposure and effectively design a lead service line replacement plan. An accurate inventory of lead service lines is the fundamental starting point for mitigating lead risks from drinking water systems.

EPA should consider the requirements for the lead service line inventory as in the proposed Michigan LCR. This includes a preliminary and verified lead service line inventory, assumes service lines of unknown material are lead until proven otherwise, and requires notifying the resident within 30 days of confirming a lead service line serving the home. The inventory must be updated every 5 years.

February 1997. USEPA Memorandum: "Assessing Financial Capability for Municipal Clean Water Act Requirements"; from Nancy Stoner and Cynthia Giles to EPA Regional Administrators, Regional Water Division Directors and Enforcement Division Directors; January 18, 2013, pp. 2.

³ Based on estimated independent full LSLR unit costs of \$3,500 to \$5,000 per service line times an estimated 125,000 service line inventory. These costs may be moderated through integration of full LSLR replacements into DWSD's asset management based water main replacement program. Preliminary estimates suggest that the incremental cost of full LSLR under the proposed Michigan LCR (that would require replacement of all lead service lines within 20 years) is approximately \$444 million.

– Require proactive full lead service line replacement on a specified schedule (e.g., 10, 15, 25, 35 years from promulgation)

DWSD supports the full replacement of lead service lines as part of an overall asset management strategy as the most effective and efficient means of reducing lead risks in drinking water systems. All public water systems with lead service lines should develop a plan for replacing all lead service lines, and full lead service line replacement should be a standard practice in everyday operations. DWSD believes that a one size fits all schedule is not appropriate. Lead service line replacement schedules must accommodate the size and population served by the water system, the number of service lines, and balance other public health risks faced at the water supply.

Detroit faces daunting challenges in addressing the pernicious legacy of lead service lines and leaded plumbing in our community. We have by far the largest number of lead services among Michigan communities, roughly estimated at 125,000, and supply water to a residential population where over 35 percent of citizens live below the U.S. federal poverty line.⁴ Nevertheless, DWSD is committed to a program to minimize lead risks in drinking water, including FLSLRs, as expeditiously as practicable. As mentioned previously, we anticipate completing 1,000 to 3,000 FLSLRs per year in conjunction with our repair or replacement of 30 miles or more of non-lead water mains in our distribution system through our asset management program.

Given the historical decline in residential property values and the acute poverty rates in our community, we recognize that full responsibility for funding FLSLRs cannot practically be laid on residential property owners.⁵ We are investigating utility supplier measures to broaden funding responsibility and are evaluating potential service rate revenue constraints and impacts.

– Allow partial LSLR only for emergency repair or “unwilling or unable customers” when conducting infrastructure replacement (e.g., main replacement)

DWSD would like to see the revised LCR focus on achieving four outcomes: 1) Economic Prosperity, 2) Healthy Environment; 3) Reliable High-Quality Service, and 4) Value for Investment. A revised LCR that continues to allow and condone PLSLRs works against each of these outcomes. PLSLR is expensive, produces high lead release, leaves old high-risk service lines in place that are even more expensive to replace at a later date, and pushes complete removal further into the future leaving the cost to be borne by both the resident and the water utility in the future.

DWSD is working to limit partial lead service line replacements (PLSLRs) to temporary emergency situations when residents cannot be contacted prior to replacement of the LSLs. PLSLRs are happening every day in Detroit and in cities across the United States. Even though PLSLRs occur at significant cost, lead pipes must be repaired, replaced and reconnected for continuation of service. The practice of PLSLR creates a large documented, preventable release of lead to drinking water. The fact that trenches and pipes are already exposed for PLSLR means that the incremental cost for FLSLR at the time of PLSLR is

⁴ This is more than twice the average Michigan poverty rate of 15 percent. Data from the U.S. Census Reporter. <https://censusreporter.org/profiles/16000US2622000-detroit-mi/> — accessed December 29, 2017.

⁵ Residential property owners were not historically apprised of the risks of lead service lines with the purchase of their homes, and in some cases, LSL replacement costs would represent a disproportionately large share of property value.

the smallest it will ever be. Water supplies need support from the LCR to remove the entire lead service line risk so that both cost and risk can be minimized.

– Require pitcher filters to be distributed and regularly maintained by the PWS for three months immediately following lead service replacement

After a comprehensive review of DWSD’s lead service line replacement procedures, DWSD began distributing pitcher filters to all homes with lead service line replacements during construction and providing replacement cartridges to last six months. Based on DWSD’s lead sampling results this is a necessary step to protect residents in the home from lead exposure during and following the replacement, and it is an appropriate step for all water systems that replace lead service lines. DWSD relies on pitcher style filters that do not require in-home installation. DWSD provides all the instructions for maintaining the filter provided by the manufacturer, as well as aerator cleaning and flushing instructions to be used during construction and following replacement. DWSD believes this provides customers with the resources necessary to protect themselves while not placing an undue and administratively problematic burden on DWSD for maintaining the filters during this period.

What are the opportunities and challenges to state and local governments if the LCR was modified to:

– Target systems required to install CCT differently:

- **Change the current system size threshold (50,000 people served), or**
- **Require systems with lead service lines (regardless of population served) to install and maintain CCT?**

DWSD believes that all water systems with lead service lines should be required to provide corrosion control treatment and this requirement should not be dependent upon the population served by the public water system. DWSD believes that revising the sampling protocol under the LCR and lowering the action level will provide critical incentives for public water systems to further evaluate and optimize corrosion control, resulting in reduced risk of lead exposure for all customers during the period when lead service lines are being permanently removed from service. This expanded focus on corrosion control treatment will require enhanced oversight from state public water system supervision programs to realize the greatest public health benefit.

The following revisions will also improve the reliability of corrosion control and public health protection provided by the LCR:

- The LCR should require a corrosion control study by default in anticipation of all source water and treatment changes, with sufficient time for states to evaluate and approve the appropriate treatment modifications necessary to maintain safe drinking water.
- There must be requirements for all water systems that exceed the action level to complete a corrosion control optimization study.
- All small and medium water systems applying corrosion control treatment must maintain treatment even after they drop below the action level. Ceasing the use of corrosion control treatment as soon as a water supply meets the lead action level does not result in reliable public health protection.
- If any water system exceeds the lead action level again after applying optimal corrosion control, they must re-evaluate their corrosion control treatment.

– **Change the requirements for designating optimal CCT to:**

- **Prescribe a default CCT that must be maintained unless a system can demonstrate equivalent CCT to the state, or**
- **Require the system to conduct a periodic re-evaluation of CCT to be reviewed by the state?**
- **Require system to find and fix problems in corrosion control treatment if a tap sample exceeds an action level?**

DWSD does not believe that a default CCT for all water systems will adequately address variability in source water quality and treatment; this strategy will result in unnecessary expenses for public water systems that do not contribute toward the goal of minimizing lead exposure for the entire community served by the water supply. Corrosion control treatment should only be used that is appropriate for a water systems' source water, treatment, and distribution system materials.

DWSD believes that corrosion control treatment decisions should be reviewed by the state. States should have the authority to require a system to conduct a re-evaluation of CCT at any time. Any system-wide action level exceedance should trigger an evaluation of corrosion control effectiveness to find whether issues with corrosion control treatment are the cause of the exceedance so that the appropriate fix can be made to minimize exposure to lead in drinking water system wide.

In addition, water quality parameters (WQPs) should be used only for monitoring corrosion control treatment; WQPs are not reliable indicators of lead release, so public water systems should not be issued violations when they exceed the designated WQP ranges for their system. States should be able to add relevant WQPs as appropriate based on PWS water quality and treatment, including chloride, sulfate, manganese, iron, aluminum, and others.

What do state and local governments think are the most effective ways for water systems to deliver educational information to consumers? What opportunities and challenges would state and local governments face if the LCR was revised to require:

- **Water systems to provide on-going targeted outreach with a special emphasis on all customers with lead service lines?**
- **Water systems to provide notification to consumers within 24 hours of exceeding an action level (as required by the 2016 WIIN Act)?**
- **Water Systems to make information accessible to consumers on results of all tap sampling, results of water quality parameter (WQP) monitoring and the number and locations of LSLs?**

DWSD believes that strategies for delivering educational information to consumers should be updated to reflect modern ways that we receive information. Modern technology should be used to enhance traditional media outreach. Direct email and texts, Twitter, and Robocalls can be used to quickly notify customers of lead levels either at individual homes or of a system wide action level exceedance. Posting information on a website is not effective outreach unless it is widely shared via email messaging, messages in bills, and other regular contact water systems have with customers. Newspapers and radio no longer have the reach that they achieved in past decades prior to the explosion of online media, streaming radio, and social media platforms. Additional strategies are necessary to adequately share information about lead risks.

Frequently the populations at greatest risk of lead exposure are even more challenging to reach due to non-English speakers, low literacy rates, high poverty, and limited time for staying current with news. The revised LCR must include requirements for reaching and communicating effectively with these populations. Smart phone applications, videos, and graphics heavy materials can be used to communicate with customers and receive information from customers, including service line pictures.

DWSD strongly believes that customers must be notified of the presence of a lead service line delivering water to their home. Customers cannot take appropriate precautions if they do not know the risk present in their home. Transparency is critical for maintaining trust in public water systems. DWSD is working to make information accessible to consumers on the results of all tap sampling, and the number and location of LSLs. Withholding this critical information places customers at risk of exposure and raises suspicions that public water systems are not adequately protecting public health.

DWSD supports providing lead in water information to schools, childcares, assisted living, and doctor offices so those groups can push information to their target audiences and communicate more effectively about the risk of lead in drinking water.

Water quality parameter monitoring should also be available to the public, but requires adequate explanation and interpretation to allow customers to understand the data.

What are the opportunities and challenges for states and local governments if the rule changed sampling protocols, including:

– Changing where water systems are required to collect tap samples?

- **At sites based on customer request,**
- **At schools served by the system**

DWSD offers sampling at homes based on customer request, but these are in addition to lead sampling according to the sampling plan required under the LCR. Sampling at homes per customer request is prudent to maintain trust in public water systems. However, customer requested samples will not provide a scientific sampling design on which to make compliance determinations. DWSD recommends that the revised LCR allows for sampling based on customer request, but these samples should be collected in addition to required compliance samples. The only appropriate exception would be if a customer requested sample meets all criteria for a compliance sample site and appropriate documentation is available to include that site in the sampling pool.

Lead exposure assessment at schools and other large buildings requires an entirely different sampling strategy compared to compliance sampling designed to measure treatment effectiveness under the LCR. Schools that receive water from public water systems should be responsible for providing low lead or lead free water on campus, rather than the public water system. Schools should have clear requirements for providing very low lead or lead-free water; any sampling at schools should not take away from compliance sampling at individual homes per the construct of the LCR. A separate set of requirements for schools to assess lead in drinking water is appropriate and should consider whether provision of lead filtering stations with verification sampling can provide an alternative remediation strategy. This could provide safe drinking water while delaying capital improvements to a time when the entire school is being renovated. DWSD believes that public water systems should work collaboratively with the schools they serve to address any water quality issues faced at the school.

– Change the way samples are collected to be more representative of exposure?

- Increase the number of samples required
- Instruct consumers to sample when they are drawing water for drinking or cooking.

The sampling protocol in the proposed Michigan LCR requires two samples at each lead service line home for LCR compliance sampling: after a minimum of 6 hours of stagnation, the sampler collects the first liter and the sixth liter out of the tap. This sampling strategy greatly improves the detection of lead contributed by the lead service line and more accurately represents the risk of lead release from lead service lines. However, this continues the challenges of relying on homeowners to implement increasingly challenging sampling procedures.

While DWSD supports the improved quality of information from lead service line samples, DWSD recommends exploring alternative sampling strategies that can be more easily implemented by water utilities and provide better information for measuring lead release. A strategy relying on random daytime sampling would reduce the reliance on customers for maintaining stagnation time and proper sampling procedures, and it would allow public water system staff to collect proper samples to determine compliance with the rule. For example, EPA should consider the random daytime sampling approach used in the UK. EPA could explore pilot projects to evaluate and compare the effectiveness of different sampling constructs that could be used in a revised LCR. While this sampling approach would increase the total number of samples required under the LCR, it would allow public water systems to provide better quality control for sampling procedures and address some of the long-term challenges with maintaining a consistent sampling pool.

- EPA would appreciate any information, and specific data, state and local governments could provide on their experiences with:
 - lead service line replacement

DWSD is willing to share our full lead service line replacement program.

Sincerely



Gary Brown
Director/CEO of the Detroit Water and Sewerage Department