

# Proposed Lead and Copper Rule Revisions

Version: October 25, 2019



# Agenda



- Proposed Revisions Highlights
- Background
- Overview of the Proposed Rule
- Key Requirements and Proposed Revisions
- Additional Information
- Questions

# Proposed Revisions: Highlights



- Takes a proactive and holistic approach to improving the current rule—from testing to treatment to telling the public about the levels and risks of lead in drinking water
- Requires earlier action to reduce risks and better protect families
- Includes efforts to improve transparency and communication to help protect children from lead exposure where they live, learn and play



**Background**

# Overview: Current Lead and Copper Rule (LCR)



- Lead is not naturally found in water
- Lead from lead pipes, faucets, and fixtures can dissolve into water or sometimes can enter as flakes or small particles
- To keep lead from entering the water, EPA requires some systems to treat water using certain chemicals that keep the lead in place by reducing corrosion
- When corrosion control alone is not sufficient to control lead exposure, EPA requires systems to educate the public about risks of lead in drinking water and to replace lead service lines

# Overview: Current LCR



- LCR was promulgated 1991, revised in 2000 and 2007
- Applies to 68,000 community (CWS) and non-transient non-community (NTNCWS) public water systems serving ~300 million people
- EPA is continuously working with primacy agencies to ensure that the LCR is being properly implemented

# Overview: Current LCR



- Maximum Contaminant Level Goals (MCLG)
  - Lead – 0  $\mu\text{g/L}$
  - Copper – 1.3  $\text{mg/L}$
- 90<sup>th</sup> percentile tap sampling results are compared to an action level (AL)
  - Lead - 15  $\mu\text{g/L}$  (ppb)
  - Copper - 1.3  $\text{mg/L}$  (ppm)

# Proposed Revisions: Development



- EPA has conducted extensive consultations regarding potential LCR revisions including:
  - Science Advisory Board
  - National Drinking Water Advisory Council
  - State, Local and Tribal officials
- Based upon this input and experience implementing the LCR, EPA has developed revisions that target actions to reduce lead exposure where it is needed most
- The proposed rule will identify the most at-risk communities and ensure systems have plans in place to rapidly respond by taking actions to reduce elevated levels of lead in drinking water



# Proposed Revisions: Summary



- The proposed LCR maintains the current MCLG of zero and AL of 15 ppb but requires a more comprehensive response at the action level and introduces a trigger level of 10 ppb
- The trigger level is a new flexible provision designed to compel water systems to take progressive, tailored actions to plan upgrades to aging infrastructure and reduce levels of lead in drinking water
- This approach focuses on six key areas

# Proposed Revisions: Key Areas



1. Identifying areas most impacted
2. Strengthening treatment requirements
3. Replacing lead service lines
4. Increasing sampling reliability
5. Improving risk communication
6. Protecting children in schools

# Proposed Revisions: Key Area 1



## Identifying Areas Most Impacted

- The EPA will for the first time require systems to develop a public lead service line inventory and create a plan for removing lead service lines
- Unlike now, systems will have to pay attention to individual locations with elevated levels of lead by identifying the cause and mitigating the problem (find & fix)

# Proposed Revisions: Key Area 2



## Strengthening treatment requirements

- Based on sampling results, systems with elevated lead levels will reevaluate their existing corrosion control treatment or conduct a treatment study so that they are prepared to respond quickly when necessary
- Flexibility is important for small systems so that they can protect public health by taking the action that makes sense for their community

# Proposed Revisions: Key Area 3



## Replacing Lead Service Lines

- Systems above the trigger level of 10 parts per billion would be required to work with their state to set an annual goal for replacing lead service lines
- Water systems above 15 parts per billion would be required to fully replace a minimum of three percent of the number of known or potential lead service lines annually

# Proposed Revisions: Key Area 3



## Replacing Lead Service Lines, continued

- Importantly, the proposal prohibits “test-outs” to avoid replacing lead service lines – an allowed practice under the current rule that has significantly slowed national progress in removing this significant source of lead from our homes
- Partial lead service line replacements will no longer be allowed except in certain situations (e.g., emergency repair) because science has recently shown us that partial lead service line replacement may increase short-term lead exposure

# Proposed Revisions: Key Area 4



## Increasing Sampling Reliability

- Water systems will follow new, improved sampling procedures, will adjust sampling sites to better target locations with higher lead levels, and systems with higher levels will sample more frequently

# Proposed Revisions: Key Area 5



## Improving Risk Communication

- Homeowners will learn about elevated levels of lead in their system sooner
- They will also understand where lead services lines are in their community and how to protect their family from exposure to lead



# Proposed Revisions: Key Area 6



## Protecting Children in Schools

- For the first time, systems will be required to test school and child care facilities
- The system would be required to provide the results and information about the actions the school or child care facility can take to reduce lead in drinking water



# **Proposed Revisions Details**

# Current LCR: Action Level

- Maximum Contaminant Level Goals (MCLG)
  - Lead – 0  $\mu\text{g/L}$
  - Copper – 1.3  $\text{mg/L}$
- 90<sup>th</sup> percentile tap sampling results are compared to an action level (AL)
  - Lead - 15  $\mu\text{g/L}$
  - Copper - 1.3  $\text{mg/L}$

# Proposed Revisions: Lead Trigger Level



- Propose a new Lead Trigger Level (TL) of 10  $\mu\text{g}/\text{L}$
- TL is in addition to the lead action level (AL) of 15  $\mu\text{g}/\text{L}$
- Water systems that exceed the TL but not the AL:
  - No reduced tap sampling, annual at standard number of sites
  - Implement goal based LSLR program
  - Annual outreach to LSL customers
  - CCT study if CCT not installed
  - Re-optimize if CCT is installed

# Current LCR: Tap Sampling

- All community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) are subject to monitoring requirements
- Systems must collect first-draw samples at taps in homes/buildings that are at high risk of lead and copper contamination



# Current LCR: Tap Sampling, continued



- The number of required samples varies by the size of the population served by the system, from 100 samples for large systems serving over 100K people down to 5 samples for systems serving 100 or fewer people
- Systems must conduct monitoring every 6 months unless they qualify for reduced monitoring
- The number of required samples and sampling frequency may be reduced if systems meet certain requirements
- Systems were required to perform a materials evaluation to identify a pool of targeted sampling sites

# Proposed Revisions: Tap Sampling



- Lead Service Line Inventory: Require all water systems to create an inventory of lead service lines and update it annually
- Tap sample site selection criteria (tiering)
  - Revise the tap sample site tiering criteria to emphasize sampling from LSL sites
  - Recategorize all copper pipe with lead solder sites regardless of age
- 90<sup>th</sup> percentile calculation for lead
  - Water systems with LSLs would use 100% tap samples from LSL sites
  - Water systems with insufficient numbers of LSLs collect samples from LSL and non-LSL sites would use the highest non-LSL tap samples
  - Water systems without LSLs would use all tap samples collected

# Proposed Revisions: Tap Sampling, continued



- Tap sample collection protocol
  - Prohibit systems from including sampling instructions to remove and clean aerators or to conduct pre-stagnation flushing prior to the start of the required stagnation period
  - Systems must supply samplers/consumers with wide-mouth bottles to collect a tap sample
- Monitoring
  - Systems above the Trigger Level must monitor at least annually (not eligible for reduced triennial monitoring)



# Current LCR: Corrosion Control Treatment



- Systems serving  $> 50,000$  people required to begin optimized corrosion control (OCCT) 1994-1998
- Systems serving  $\leq 50,000$  people must begin OCCT process when the system exceeds an AL
  - Systems make optimal corrosion control recommendation to State
  - State approves or designates alternative
  - Follow-up monitoring conducted for one-year

# Current LCR: Corrosion Control Treatment, continued



- Systems serving  $\leq 50,000$  people must begin OCCT process when the system exceeds an AL, continued
  - State reviews data and designates optimal water quality parameters (OWQP)
  - Systems maintain OWQP
  - Systems compliance with the treatment technique is based on OWQP AL is exceeded
  - Small/medium systems can discontinue if they meet AL in two consecutive monitoring periods

# Proposed Revisions: Corrosion Control Treatment



- Require water systems with OCCT to re-optimize if the 90<sup>th</sup> percentile lead level exceeds the TL or AL
- Require water systems without OCCT to study OCCT if the 90<sup>th</sup> percentile exceeds the TL and implement OCCT if the AL is exceeded
- Revise sanitary survey requirements for water systems to include CCT review and WQP assessment, including relevant updated guidance that has been issued by the EPA

# Proposed Revisions: Corrosion Control Treatment, continued



- Specify that systems should evaluate an orthophosphate-based inhibitor as CCT (instead of a phosphate-based inhibitor) as part of the CCT study
- Establish additional specifications for water systems to study alternative CCT
- Require systems to conduct “find-and-fix” for individual sites that exceed the AL (See next slide)

# Proposed Revisions: Find-and-Fix



- Require all systems to collect a follow-up sample for each lead tap sample site that exceeds 15  $\mu\text{g}/\text{L}$  and require systems to subsequently implement a “find-and-fix” approach
- Systems must collect follow-up tap samples within 30 days of learning the results
- Systems would be required to report the results to the state, but the results would not be included in lead 90<sup>th</sup> percentile calculations

# Proposed Revisions: Find-and-Fix, continued



- Systems with CCT would be required to collect an additional WQP sample at or near the site where the high lead sample was collected within 5 days of learning of the lead results
- Systems must determine if a CCT “fix” is needed (e.g., localized CCT change and/or a systemwide CCT change, spot flushing, distribution system operation improvements, system looping and other strategies to reduce dead ends)
- Systems that identify a fix that is out of their control, such as a customer that does not want an old brass faucet replaced, must provide documentation to their state

# Current LCR: Notifications & Public Education



- The annual Consumer Confidence Report (CCR) sent to all consumers must include lead sampling results and an informational statement about the health effects of lead and actions to reduce exposure
- Public Notification sent to all consumers if water system has a violation of the treatment technique within 30 days; and notice of violation for failure to monitor or report results within one year

# Current LCR: Notifications & Public Education, continued



- Systems that exceed the lead action level must begin public education within 60 days after the end of monitoring period:
  - Educational materials must include information on health effects of lead, sources of lead, and steps consumers can take to reduce exposure to lead in drinking water
- Water systems send lead consumer notice with tap sample result to homes where a tap sample is collected within 30 days
- Note that the 2016 Water Infrastructure Improvement for the Nation Act (WIIN) requires notice of a 90<sup>th</sup> percentile lead level exceeding the AL within 24 hours



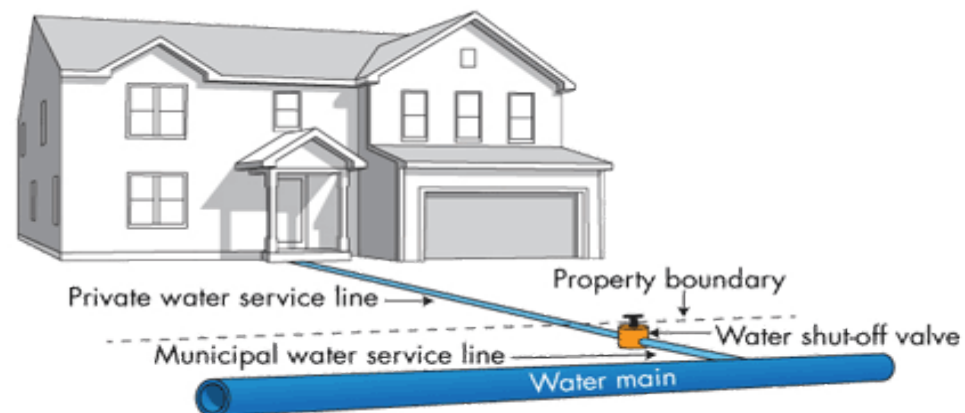
# Proposed Revisions: Notification and Public Education



- Revise CCR mandatory health effects language and require reporting of the range of tap sample levels in addition to the 90<sup>th</sup>% and number of samples greater than the lead AL
- Water systems must conduct public notification to consumers within 24 hours of a 90<sup>th</sup> percentile lead level > AL (WIIN Act)
- Provide notice to customers whose individual tap sample is > 15 µg/L within 24 hours
- Require water systems with LSLs that exceed the TL to conduct annual outreach to LSL customers
- Deliver Public Education (PE) to impacted consumers during water-related work that may disturb LSLs
- Provide public access to LSL inventory

# Current LCR: Lead Service Line Replacement

- Systems that exceed the lead Action Level (AL) after installing corrosion control treatment (CCT) must replace 7% of lead service lines per year
- Systems are only required to replace the portion of the LSL owned by the PWS
- Systems may consider an LSL replaced if a sample from that line is below the AL
- Systems must offer to replace customer owned portion at customer cost
- LSLR can stop when lead  $\leq$  AL for 2 consecutive monitoring periods



# Proposed Revisions: Lead Service Line Replacement (LSLR)



- Water systems with LSLs would prepare an LSLR program plan and establish an LSLR goal rate with state approval
- Water systems must replace public portion of LSL when customer notifies them of replacement of private portion
- Water systems that exceed the lead TL, but not the AL, would implement the goal based LSLR program
  - Water systems can stop goal based LSLR when system is below the TL for 2 consecutive monitoring periods

# Proposed Revisions: Lead Service Line Replacement (LSLR), continued



- Water systems that exceed the lead AL would replace annually 3% of LSLs
  - Water systems can stop 3% annual LSLR when system is below the AL for 4 consecutive monitoring periods
- All LSLR will be full replacements
  - Partial LSLR only for emergency repair or “unwilling or unable customers” when conducting infrastructure replacement (e.g., main replacement)
- Removes the “test out” provision
- Require pitcher filters to be distributed and replacement cartridges by the PWS for three months immediately following lead service replacement

# Proposed Revisions: Lead Service Line Replacement (LSLR)



## **Proposed LCRR:**

**Requires 3% annual LSLR when lead action level is exceeded**

- The entire LSL must be replaced to count towards 3% annual LSLR
- LSLR can stop after **4** monitoring rounds  $\leq$  AL

## **Trigger Level:**

- The entire LSL must be replaced to count towards goal LSLR rate approved by the state

## **Current LCR:**

**Requires 7% annual LSLR when lead action level is exceeded**

- Allows system to replace only the water system portion of the LSL
- Allows systems to test LSLs and count as replaced if samples are  $\leq$  15 ppb
- Both of the above allow systems to meet 7% annual LSLR while leaving portions or entire LSLs in place
- LSLR can stop after **2** monitoring rounds  $\leq$  AL

**There is no trigger level requiring LSLR**

# Proposed Revisions: Small System Flexibility



- Applies to CWSs serving 10,000 or fewer persons and all NTNCWS
- Compliance alternatives for small CWSs:
  - full lead service line replacement
  - installation and maintenance of optimized corrosion control treatment, and
  - installation and maintenance of point-of-use (POU) devices

# Proposed Revisions: Small System Flexibility, continued



- Compliance alternatives for NTNCWSs:
  - same alternatives as above, and
  - replacement of all lead bearing plumbing fixtures at every tap where water could be used for human consumption
- Water systems with a lead TL would recommend a compliance option and obtain Primacy Agency approval
- If a water system subsequently exceeds the lead AL it must implement the approved option

# Proposed Revisions: Sampling and Education at Schools & Child Care Facilities



## Community Water Systems would

- Develop a list of customers or service connections that provide water to schools or licensed child care providers and verify this list every five years
- Each year, a CWS would collect samples at 20 percent of schools and 20 percent of child care facilities from the list. Therefore, a CWS would collect samples at each facility once every five years
- For each child care facility: collect two samples
- For each school: collect five samples



# Proposed Revisions: Sampling and Education at Schools & Child Care Facilities



## **Community Water Systems would, continued**

- Provide the EPA's 3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: A Training, Testing, and Taking Action Approach
- Provide sampling results to the sampled facility, Primacy Agency, and state and local health departments
- Annually certify to the Primacy Agency that it met the notification and sampling requirements



# **Additional Information**

# Comparison of Incremental Costs and Benefits for the Proposed Revisions



	3% Discount Rate (2016\$)	7% Discount Rate (2016\$)
Annualized Incremental Costs	\$131 - 270 Million	\$130 – 286 Million
Annualized Incremental Benefits	\$211 - 521 Million	\$36 – 97 Million
<b>Annual Net Benefits</b>	<b>\$79 - 251 Million</b>	<b>-\$93 – 189 Million</b>

## Next Steps

- Pre-publication version and other materials available at: <https://www.epa.gov/safewater/lcrproposal>
- Publication in the Federal Register
- 60 day comment period following **publication**
  - Submit your comments at <http://www.regulations.gov>
  - Docket ID No. EPA-HQ-OW-2017-0300
- Review and evaluate public comments
- Promulgate Final LCR Revisions in 2020



**Questions?**