



**Get the Lead Out
The Challenge of Removing
Lead Service Lines**

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Why Are We Concerned About Lead

- Lead is harmful to human health if ingested or inhaled
- Lead accumulates in the body over time, resulting in damage to the brain, nervous system, red blood cells and kidneys
- Young children, infants, and fetuses are particularly vulnerable
 - Behavior and learning problems
 - Lower IQ and hyperactivity
 - Slowed growth



Sources of Lead

- Lead-based paint
- Food (contaminated by lead in the air or in food containers)
 - Greatest single source of lead for the average adult
- Soil and dust (which has been contaminated by lead)
- Outside air from vehicle emissions and other sources
- Drinking water (from the corrosion of plumbing systems)
 - Estimate drinking water can make up 20% or more of a person's total exposure to lead

From Wisconsin Department of Natural Resources Bureau of Drinking Water & Groundwater, PUB-DG-015 2017



Lead in Drinking Water

- Water within a plumbing system will continuously dissolve the lead it contacts
- Rate of corrosion can vary greatly based on water quality and the age of the plumbing system
- Most water in Wisconsin is corrosive enough to dissolve some amount of lead



Lead Pipes

- Until 1940s, lead piping often used for the service lines that join buildings to street water mains
- Lead solder banned in WI in 1984, but nationally laws weren't implemented until 1988
- Some drinking water fixtures were manufactured with lead until 1996



How Many Lead Service Lines

- Milwaukee estimated to have 70,000
 - Racine has 10,437
 - West Allis reported 8,133
 - Manitowoc counted 6,579
 - Kenosha counted 7,326
 - Green Bay estimated 1,900
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- Flint estimated to have 8,000 lead services



Safe Drinking Water Law

- Federal Safe Drinking Water Act
 - 42 U.S.C. §§ 300f to 300j-26
- Wisconsin's State Program
 - Wis. Stat. § 281.17(8). DNR to establish, administer and maintain a safe drinking water program no less stringent than federal requirements



Lead and Copper Rule

- Federal Lead and Copper Rule
 - 40 CFR §§ 141.80 to 141.91
- State Lead and Copper Rule
 - Wis. Admin. Code §§ NR 809.54 to 809.55



Uniqueness of Lead Rule

- Focus on potential for contamination from pipes and plumbing
- Sampling required at customer taps
- Samples usually gathered by customers
- No maximum contaminant level set
- Action required if lead concentrations exceed an action level of 15 ppb in more than 10% of customer taps sampled



Sampling

- First draw samples at customer taps
 - Taps regularly used for human consumption
 - Water to have stood motionless for at least six hours
- Sampling plan required to focus on sites that have a higher likelihood to release elevated levels of lead
- Consistency in sampling locations required
- Sampling every 6 months unless system qualifies for reduced sampling



Number of Samples

Public Water System Size (# People Served)	# of sites (Standard Monitoring)	# of sites (Reduced Monitoring)
>100,000	100	50
10,001–100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤ 100	5	5



Reduced Monitoring

Table 2: Criteria for Reduced Pb/Cu Tap Monitoring

Annual	1. PWS serves ≤ 50,000 people and is ≤ both ALs for 2 consecutive 6-month monitoring periods; or 2. Any PWS that meets optimal WQPs (OWQPs) and is < Pb AL for 2 consecutive 6-month monitoring periods.
Triennial	1. PWS serves ≤ 50,000 people and is ≤ both ALs for 3 consecutive years of monitoring; or 2. Any PWS that meets OWQP specifications and is ≤ Pb AL for 3 consecutive years of monitoring; or 3. Any PWS with 90 th percentile Pb and Cu levels ≤ 0.005 mg/L and ≤ 0.65 mg/L, respectively, for 2 consecutive 6-month monitoring periods (i.e., accelerated reduced Pb/Cu tap monitoring).
Every 9 years	PWS serves ≤ 3,300 people and meets monitoring waiver criteria found at 40 CFR 141.86(g).



Triggering the Action Level

- Action level triggered if lead concentrations exceed an action level of 15 ppb in more than 10% of customer taps sampled
- Exceeding the action level is not a violation of the regulation but triggers additional action
- If action level is reached, the system must:
 - Increase monitoring
 - Undertake additional efforts to control corrosion, which may include lead service line replacement
 - Inform the public



Optimizing Corrosion Control

- When Required
 - Large systems (> 50,000) required to optimize corrosion control regardless of sampling results
 - Medium and small systems required to take steps to optimize corrosion control if the action level exceeded
- Types of Corrosion Control
 - Chemical addition to promote the formation of a coating on the pipes to separate water from the pipe material
- Continuation of Corrosion Control
 - DNR sets water quality parameters to ensure corrosion control continues to be optimized



Lead Service Line Replacement

- If lead action level is exceeded after corrosion control is optimized, the system must begin to replace its lead service lines
- Must annually replace at least 7% of the lead service lines in the distribution system
 - Can stop if monitoring shows system is below action level for 2 consecutive sampling rounds
- System must replace the lines it owns. Not required to bear the cost of replacing the building owner's portion of the line

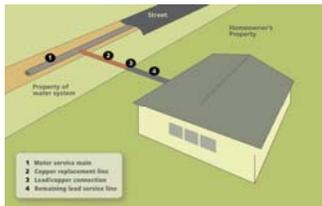


EPA Lead and Copper Rule Revisions White Paper

- October 2017 white paper
- EPA considering proposing full LSLR programs
- Evaluating issues such as:
 - How to provide full LSLR when utility does not own the line
 - Addressing equity concerns and ability to pay
 - Addressing LSLR in rental properties
 - Prohibiting or limiting partial LSLR
- Rule revisions expected in early 2018



Ownership of Lead Service Line



Issues with Divided Ownership of Lead Service Laterals

- Increased lead levels (in the short term) if only the utility's portion of the lead service lateral is replaced
- Reluctance to mandate private replacement
- Limited authority to offer assistance
 - Municipality's inability to work on private property
 - Risks related to work on private property
 - No utility funding of work on private property



Limitation on Working on Private Property

- Municipality may not use its own workforce to perform a construction project for which a private person is financially responsible
- Sec. 66.0901(11)(b), Stats.



No Utility Funding for Replacing Private Lines

- From PSC Decision on Madison case
- Madison proposed a lead pipe replacement program as an alternative to adding corrosion chemicals to water
- EPA/DNR agreed if both the public and private side of the lead lateral are replaced
- In 2000, Madison adopts an ordinance requiring property owners to replace their side of a lead water service



What did Madison request?

- City agrees to reimburse the owner for half the cost of replacement up to \$1,000
- Madison proposes to fund private replacement program from utility reserves and a surcharge of 5.5 cent/hundred cubic feet on water sales
- Surcharge approximately = \$5.10 per customer per year



Arguments Offered in Support of Proposal

- The cost of chemical addition would be borne by all ratepayers
- Adding chemical would have an adverse affect on lake vegetation and algae growth
- Chemical addition would continue indefinitely
- The estimated annual cost of replacement would be less than that of chemical treatment



But PSC Rejects Funding Proposal

- Acknowledges that the record supported Madison’s decision that replacement was better than chemical addition
- But rejects funding proposal as an “unwise precedent”
- Utility charges should not be put towards a “subsidy” which clearly and directly benefits a specific group of private property owners
 - 3280-WR-106; 205 P.U.R.4th 461



PSC’s Rationale for Decision

- Property owner is responsible for repair and replacement of customer portion of lateral
- Laterals are old and have little life left
- Property owners should have known of lead lateral liability and potential need for lateral replacement
- City passed the ordinance requiring lead lateral replacement
- City should be responsible for the funding of the subsidy



PSC Decision Upheld on Appeal

- City appeals and Dane County Circuit Court reverses
- But – Court of Appeals upholds PSC decision (2002 WI App 102)
 - Madison presents a rational basis for approving its application but that does not mean that the PSC’s decision lacks a rational basis.
 - “We are to review for reasonableness the decision the PSC did make, not a decision it did not make.”
 - Concludes the decision of the PSC is reasonable



How Madison Completed its Lead Service Line Replacement Program

- Utility owned portion of laterals funded from utility rates
- Customer owned portion of laterals funded by property owner with a 50% rebate up to \$1,000
- Reimbursements to property owners funded by City



Dealing with Lead in Drinking Water Today

- Chemical addition for corrosion control is the norm
- Utility owned lead services will be replaced during normal construction
- But concerns that partial lead lateral replacement increases lead levels
- EPA/DNR discourages partial lead service line replacement



Replacement of Lead Service Lines Today

- Utilities recommend that property owner replace their portion of the lead service line at the same time as utility portion is replaced
- Ordinances mandating private lead service line replacement are still not common
- Reluctance to mandate private lead service line replacement without being able to provide financial incentives



Limited Funding Available from DNR

- Private LSL Replacement Funding Program
 - Under the State’s Safe Drinking Water Revolving Loan Program
 - Funding only available for SFY 2017 and SFY 2018
 - Provides municipalities with “principal forgiveness” funding that they can use to assist individuals in replacing private LSL
 - Municipalities create their own programs; 3 years to use funds
 - <http://dnr.wi.gov/Aid/documents/EIF/leadServiceLineFunding.html>



Legislation Being Considered

- SB 48/AB 78 would allow water utility rates to be used to provide partial funding for private lead service line replacement
- PSC would have to approve utility program
- Rebate provided could not exceed 50% of cost
- Cost of program must be borne by customer class eligible for program



Thank You

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