


Update on Lead in Drinking Water

Presentation to the Mass. Water Resources
Commission on 7/12/18

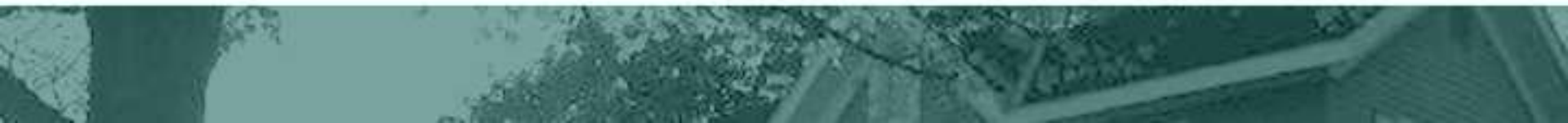
Terry Howard, MDPH
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Childhood
Lead
Poisoning
Prevention
Program

CLPPP Overview

- Introductions
- Lead Poisoning
- Lead Law 101
- CLPPP Case Management
- Data
 - Water Sampling
 - Water Service Line



Why Preventive Measures are Important



- Lead is neurotoxin
- Young children are more vulnerable to the effects of lead because they are less developed
- Lead poisoning can cause brain damage, coma, and even death
- Lead poisoning makes it difficult for kids to learn, causes deficits in IQ, and increases the chance that kids won't finish school
- Young children are most often exposed to lead from their home environment

How Children are Exposed to Lead

- Lead paint in the child's environment is the primary way a child is exposed.
 - Old leaded windows (usually in poor condition)
 - Loose and peeling lead paint (interior and/or exterior)
 - Renovations
- Lead dust gets on hands and toys when children play.
- Children put their hands and toys in their mouths.
- Children can also breathe in lead during renovations.



Deleading is the Key



- The damages from lead poisoning are permanent
 - Chelation helps but does not reverse damage
- To protect children from lead poisoning, their homes must be delead
 - Prevents increased exposure or re-exposure
 - Protects siblings
 - Protects future occupants

Do not use a child like a canary in a coalmine.

Barebones of the MA Lead Law

The MA Lead Law is one of the most protective and comprehensive statutes in the US:

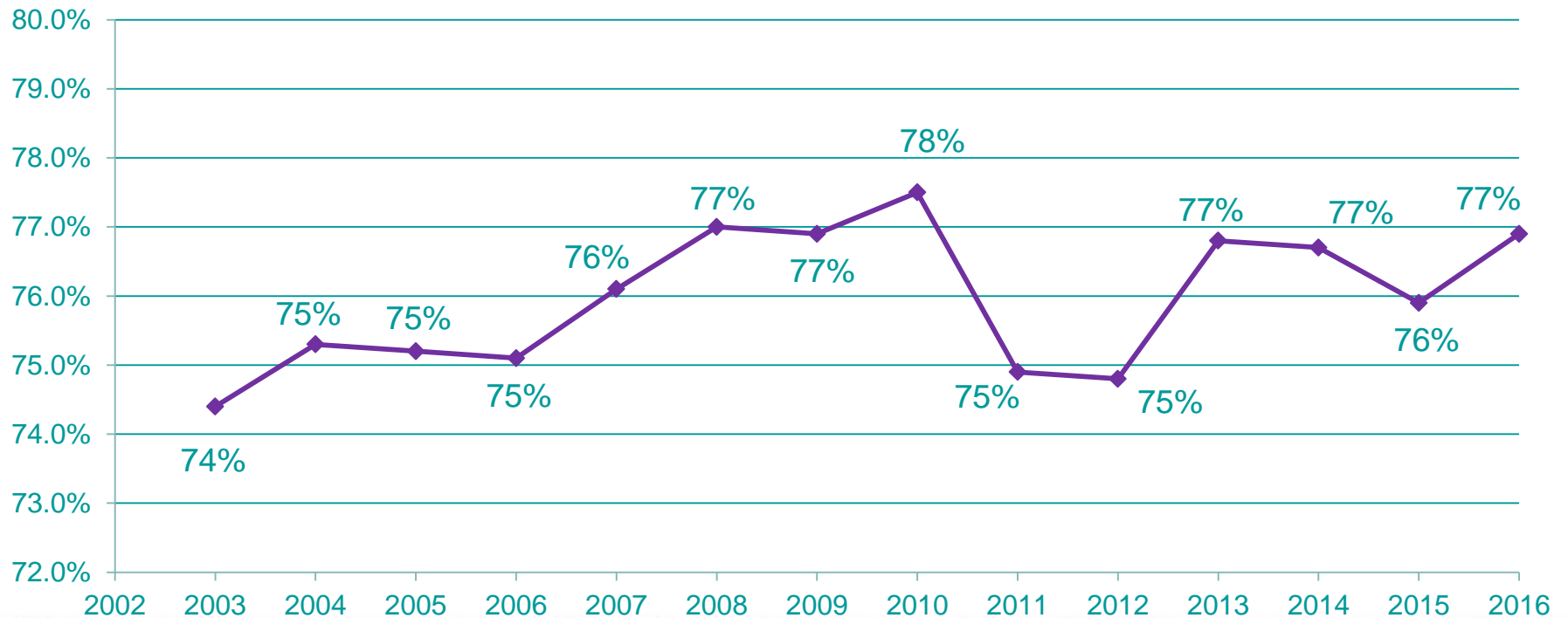
- Child under the age of six
- Residing in a home built before 1978
- The home must be in compliance with the Lead Law, which means free from lead hazards
 - Applies to owner occupied home as well as rental units
 - Applies regardless of a child's blood lead level
- Requires universal screening for children at ages 1, 2, 3, and at age 4 for high risk communities



Screening Rates in MA

MA has one of the highest screening rates in the US (77% state-wide in 2016) and a steadily declining incidence of lead poisoning since 2000.

**Lead Screening Rate in Massachusetts
Children 9-47 months**



So Why Are We Still Talking?

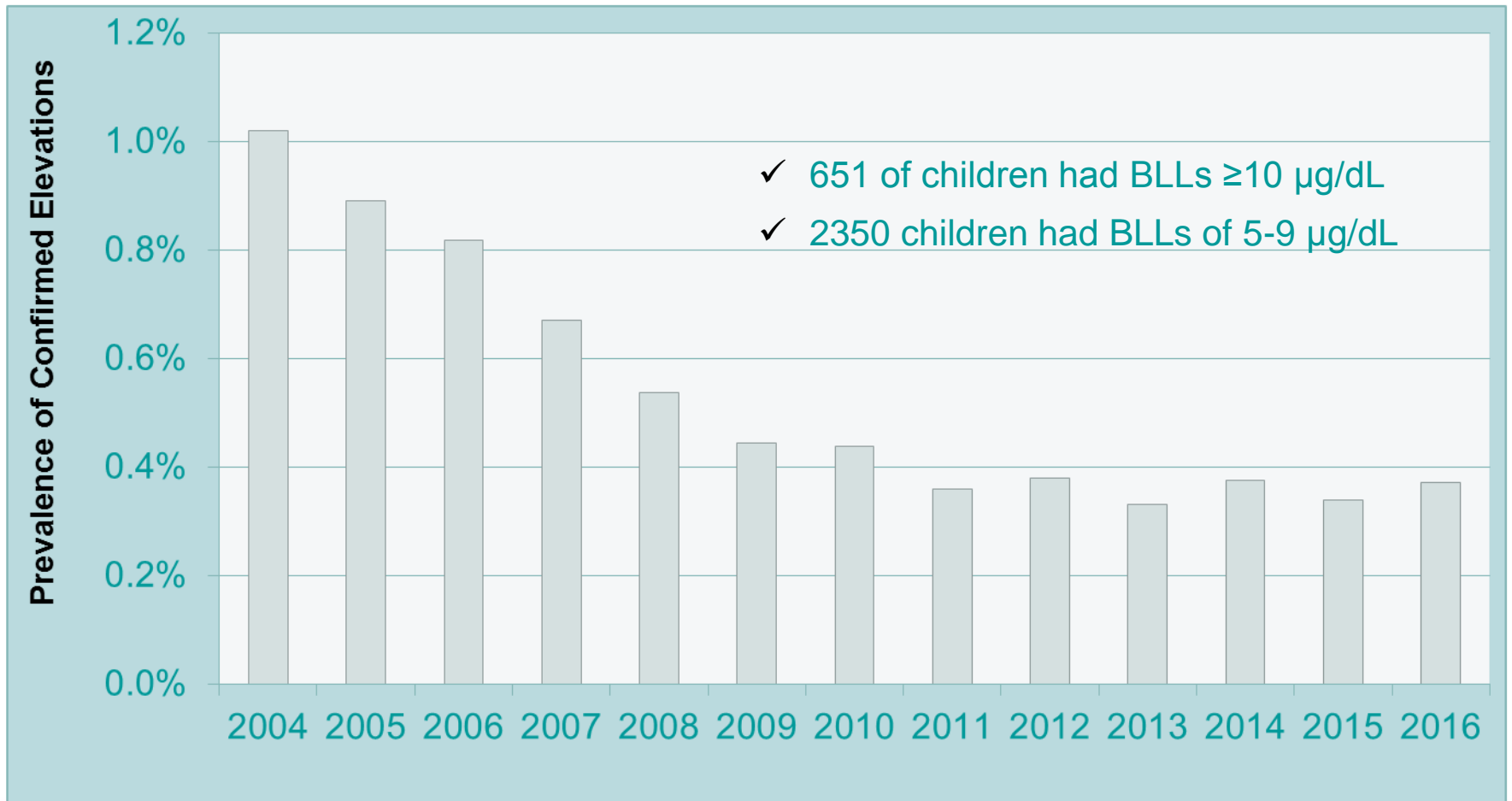


- We are still not screening 100% of children.
- Over 70% of housing units in the state are built prior to 1978.
 - Only 10% of housing has been inspected/deleaded
- Recent scientific evidence has demonstrated the harmful effects of long-term low-level lead exposure.
- Wide variation in screening and prevalence of lead poisoning at the community level.
- While lead continues to affect children across all communities in MA, it disproportionately impacts gateway and lower income communities with higher minority populations.

MA Definition of Lead Poisoning

- In MA a child is considered legally lead poisoned with a venous blood lead test result of 10 $\mu\text{g}/\text{dL}$ or greater
 - Mandatory code enforcement
 - Owner is held strictly liable
- Children with a venous blood lead level between 5-9 $\mu\text{g}/\text{dL}$ have a blood lead level of concern
 - Education and outreach
 - Local BOH for tenants, private lead inspection for owner occupied

2016 Statewide Prevalence and Number of Children with Blood Lead Levels ≥ 10 $\mu\text{g}/\text{dL}$ (9-48 months)



Enforcement of the MA Lead Law

- Enforced through:
 - Mandatory reporting of blood lead test results
 - Proof of screening for entrance into daycare, pre-k, & kindergarten
 - Case management of exposed children
 - Primary prevention with local BOH's
- Other preventative regulations/requirements:
 - Duty of owner - liability concerns of rental property owners
 - ~8,000 private inspections each year
 - Blood Lead Level of Concern/Education and Outreach
 - Property Transfer and Rental Notification

MA - Not a Lead Free Standard



A *Lead Hazard* is paint or other coating, which contains a dangerous level of lead, and is:

1. Loose (chipping, peeling)
2. Moveable/Impacted Parts of Windows
3. Friction Surfaces – door and stair systems
4. Accessible/Mouthable Surfaces – Window sills, handrails, and railing caps

Lead paint on a flat wall is not considered a lead hazard so long as it doesn't become loose.

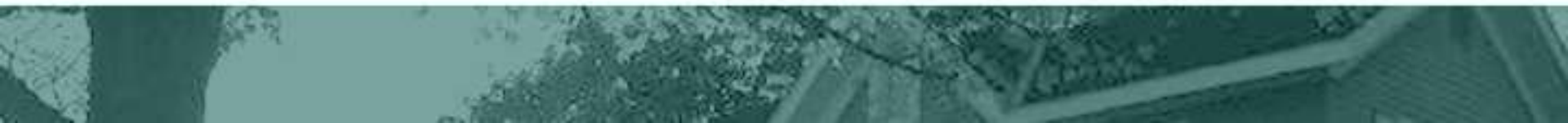
MA CLPPP



- **Case management of lead poisoned children**
 - Case management includes clinical case management, environmental services (code enforcement), and family advocacy.
- **Training and licensure Lead Inspectors and Risk Assessors**
 - Currently approx. 79 private lead inspectors and 25 fully licensed code enforcement inspectors and 79 risk assessors
 - 260 Licensed code enforcement determinators
 - Fall/Spring schedule for trainings
- **Oversight of owner/agent deleading authorization**
 - Over 18,000 authorized owners/agents
- **Education and Outreach**
 - Mass.gov/orgs/childhood-lead-poisoning-prevention-program
 - heohhs.ehs.state.ma.us/leadsafehomes/default.aspx
 - 1-800-532-9571

Drinking Water Sampling Program

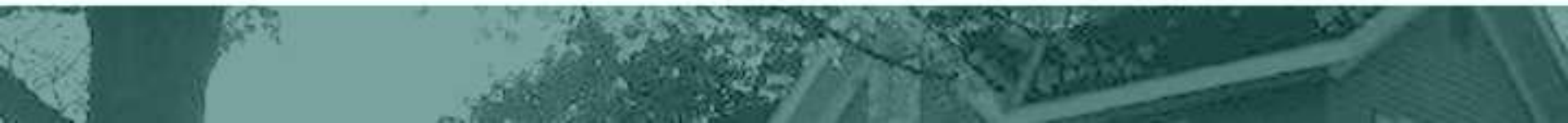
- Since October 2016, CHW's have collected water samples for 259 families.
 - We are behind in our data entry (mid-Feb 2018)
 - 7 cases had exceedances
 - 6 were exceedance on the first draw only
 - 1 case first draw was fine second draw was high (two sets of samples)



Water Sampling Program (continued)

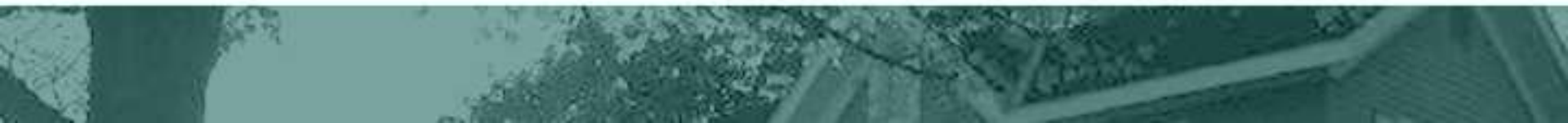
Details about the 7 cases:

- 4 of these cases also had lead paint hazards
- 3 cases
 - Child just back from Bangladesh and using turmeric
 - Child mouthed leaded fishing sinker
 - Mom identified friends home as possible source (also mom and uncle reported doing renovation work as a side-job)



Water Service Line Testing

- CLPPP inspectors began testing water service lines if there was access in 2017
- December 1, 2017, we trained private inspectors to test and added to the reports and database.
 - 125 service lines tested (almost all CLPPP, 29 private)
 - Since 12/1/17– 1,175 initial inspections
 - Of the 125 screened 29 service lines were positive



Contact Information

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MassDEP Update on Lead in Drinking Water

Frank Niles, MassDEP, Drinking Water Program



MassDEP Update on Lead in DW

- ▶ Overview of Lead & Copper Rule (LCR)
 - ▶ Lead Service Line Replacement
 - ▶ Assistance Program for Lead in School Drinking Water
 - ▶ Potential Future Changes to Federal Rules
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Overview of the Lead and Copper Rule (June 7, 1991)

Purpose:

- ▶ Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity.
- ▶ Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

Overview of LCR

- ▶ Action Level (AL) of 0.015 mg/L for Pb and 1.3 mg/L for Cu based on 90th percentile level of tap water samples.
- ▶ AL exceedance is not a violation, but triggers other requirements including: water quality parameter (WQP) monitoring, corrosion control treatment (CCT), source water monitoring/treatment, public education, and lead service line replacement (LSLR).
- ▶ All community water systems (CWSs) and non-transient non-community water systems (NTNCs) are subject to the LCR requirements.

Major Provisions of LCR

▶ Monitoring:

- Sampling required from residential taps (100 taps @ largest systems, down to 5 taps for smallest systems).
- Monitoring every 6 months, with provisions for reduced sampling (annual or triennial).
- Sampling cannot determine lead exposure to the population

▶ Consumer Notification:

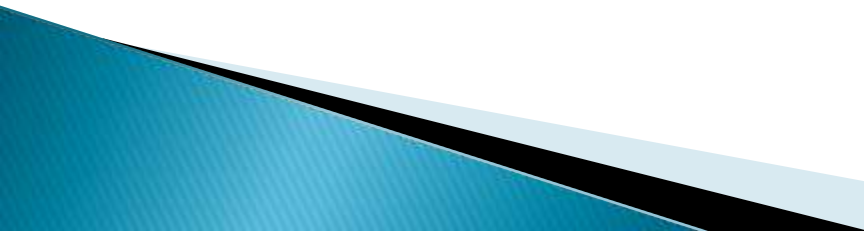
- Consumer Notice: All systems must provide individual Pb and Cu tap results from sites that were sampled.
- Consumer Confidence Report: All “Community Water Systems” must provide an educational statement about lead in drinking water as well as the 90th percentile values from the most recent round of sampling and the number of sites exceeding the AL.

Action Level Exceedences

Activities required following an “Action Level Exceedance” (ALE) at 90th percentile:

- Public Education (Pb ALE only)
- Water Quality Parameter (WQP) monitoring
- Source Water Monitoring and Source Water Treatment
- Corrosion Control Treatment (CCT)
- Lead Service Line Replacement, if CCT already in place

Lead Service Line Replacement (LSLR)

- ▶ If Action Level Exceedences (ALE) occur after installing corrosion control treatment, then lead service line replacement (LSLR) is required.
 - ▶ PWS must submit a LSLR Program to MassDEP for approval.
 - ▶ PWS must replace at least 7 % of LSLs annually.
 - ▶ If only portion of LSL is replaced, PWS must notify customers, collect samples, and provide sample results.
 - ▶ Some MA PWSs have removed all their LSLs, many more have removal programs.
 - ▶ Some communities have good public info on LSLs for each property.
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Funding for Lead Service Line Replacement (LSLR)

- ▶ Drinking Water State Revolving Fund (DWSRF) low interest loans give highest priority to LSLR projects.
- ▶ New DWSRF incentive for water utilities to remove the private portion of LSLs:
 - Communities getting DWSRF loans for water main replacement or LSL related projects can replace private portions of LSLs at no additional cost to the community and at no cost to the homeowner.
- ▶ Communities have used a variety of incentive programs for customers to remove the *private portion* of the LSL.

Lead Service Line (LSL) Removal Activities in Other States


- ▶ Many states provide loans to communities to remove LSLs.
- ▶ Some states have passed legislation:
 - Requiring the removal of LSLs on private property
 - Allowing communities to pass ordinances requiring LSL removal
 - Allowing utilities to fold the LSLR cost into water rates

Assistance Program for Lead in School Drinking Water

- ▶ Massachusetts program launched in 2016 (\$2.75m).
 - ▶ Voluntary program – open to public schools and early education / childcare facilities.
 - ▶ Provides tech assistance and free lab analysis for one sample round.
 - ▶ Administered by MassDEP in partnership with MWRA, UMass Amherst, MDPH, local PWS, and others.
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Assistance Program for Lead in School Drinking Water

▶ 2016–2017 school year results:

- 818 facilities from 153 different communities
 - More than 55,000 samples were analyzed
 - 72 % of participating school buildings had one or more fixtures exceeding an AL
 - School actions included removing and replacing fixtures, and implementing flushing programs
 - Individual school testing results, and '16–'17 report, are available on MassDEP website
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Assistance Program for Lead in School Drinking Water

Round Two – 2017–2018 school year program:

- ▶ Approx. \$600k in funds remaining from Round 1.
- ▶ Round 2 open to any school not in Round 1, including Head Start and Special Education.
- ▶ 239 facilities from 81 communities signed up.
- ▶ Enhanced self-help materials on MassDEP website.
- ▶ Note:
 - Many other schools have tested on their own (often with help from MWRA or other PWS)
 - USEPA FFY18 budget includes \$20 million nationally for Pb testing in schools and childcare facilities, and \$10 million to reduce Pb in drinking water – awaiting details from USEPA.

Potential Future Updates to LCR

- ▶ The USEPA is in the process of proposing a revision to LCR.

Topics being reviewed include:

- ❖ Transparency and public education
 - ❖ Monitoring practices
 - ❖ Corrosion control treatment
 - ❖ Lead service line replacement, and how copper is regulated.
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- ▶ USEPA is currently targeting, later in 2018, for issuing proposed changes to LCR.



Massachusetts Water Resources Authority

Presentation to the

Water Resources Commission

MWRA Lead Update

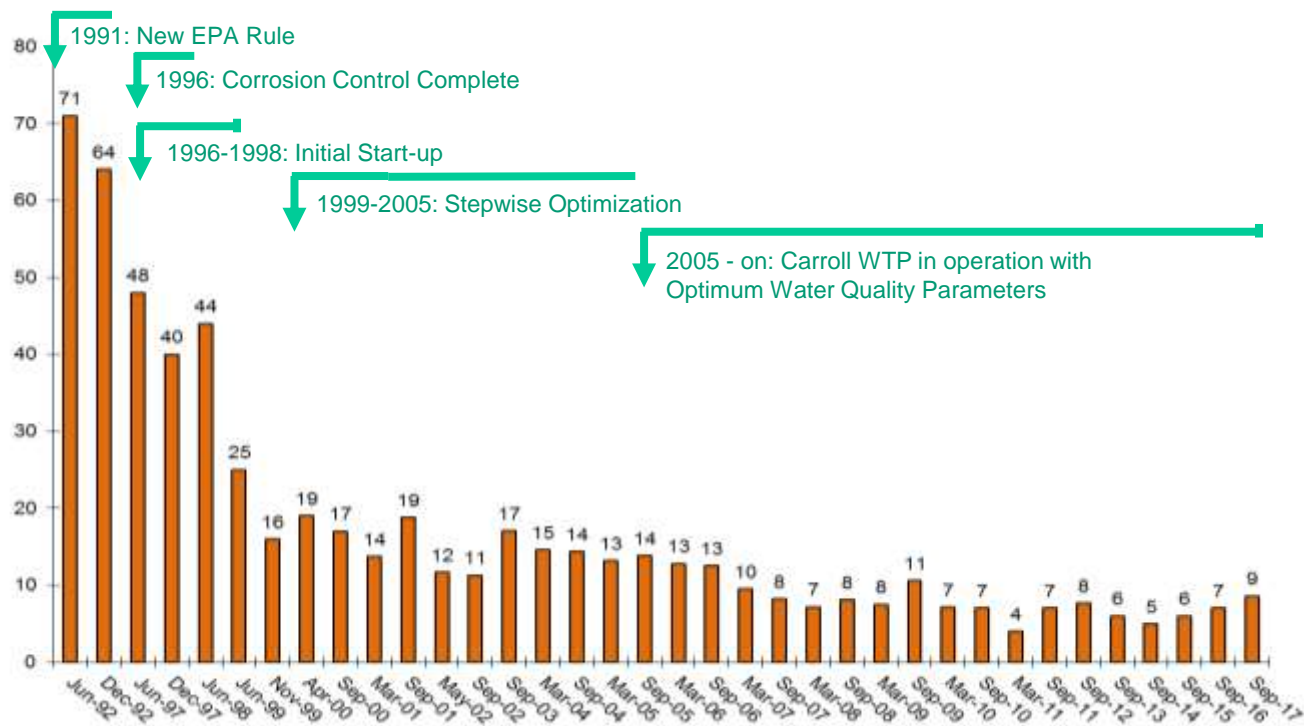
Stephen Estes-Smargiassi
Director of Planning and Sustainability

July 12, 2018



Over 90% Reduction In Lead Levels

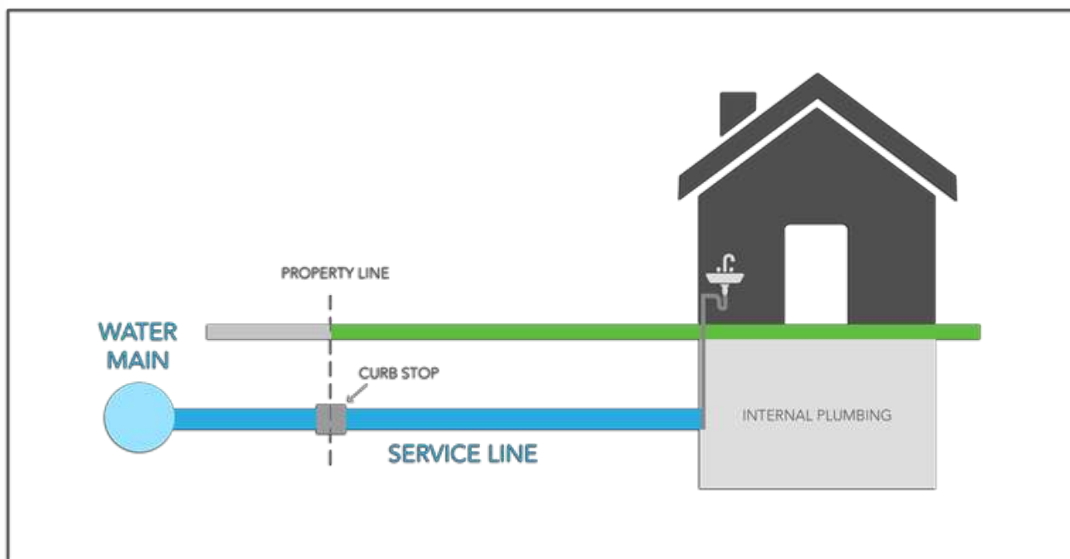
- Effective corrosion control can reduce lead leaching





Lead Service Lines Can be A Significant Source

- Where present, lead service lines are the largest source of lead in contact with water
- Partial replacement (i.e. only public portion) can result in increased lead levels







MWRA Lead Service Line Loan Program

- \$100 Million in 10-Year Zero Interest Loans
- Approved in March 2016
- Requires Full Replacement of LSL
- Locally Developed Programs
- \$9 Million in Loans to 7 Communities





Several Communities Now Have On-Line Inventories

 Boston Water and Sewer Commission **Lead Service** 

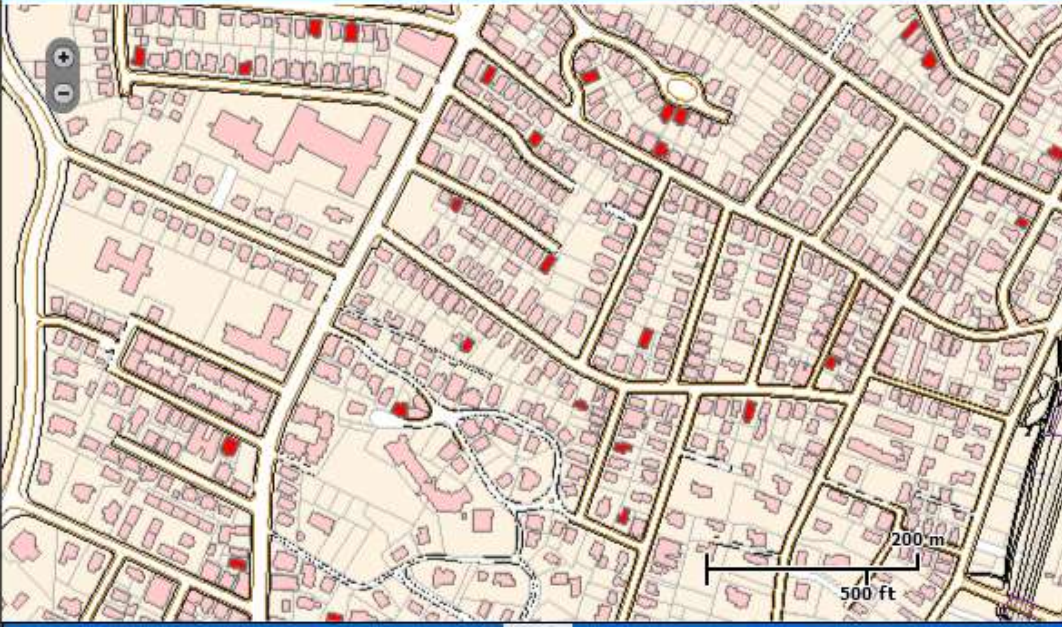


Table Options ▼

Address	Lead Service
41 OAKVIEW TER Jamaica Plain	YES ▲
73 PERSHING RD Jamaica Plain	YES
99-105 SHERIDAN ST Jamaica Plain	YES
24 BOYLSTON ST Jamaica Plain	YES ▼



Collaborative School Testing Program

- Developed collaboratively with DEP
- MWRA laboratory added staff and equipment for fast turnaround
- 328 schools in 37 different MWRA communities
- 35,142 tests
- Approximately 4.7 % above the lead Action Level
- 125 of the 328 schools had one or more samples over
- On-going, reaching out to childcare facilities now



- Partnership with MDPH on testing
- Research on Detection of Lead Service Lines
- Lead Service Line Replacement Collaborative
- EPA's Efforts to Revise the Lead and Copper Rule



For more information

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 - ▶ Steve Estes-Smargiassi, MWRA (617-788-4303)
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