

Lead In Drinking Water: A Public Health Threat Revisited



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American Public Health Association
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- **The Water Council**
- **University of Wisconsin – Milwaukee School of Freshwater Sciences**
- **Growing hub of water related industry and technologies**
- **Ground zero for 1993 Cryptosporidium Outbreak (lessons learned)**
- **Great Lakes Water Compact (historic water diversion request)**



The City of Milwaukee – “A Fresh Coast City”

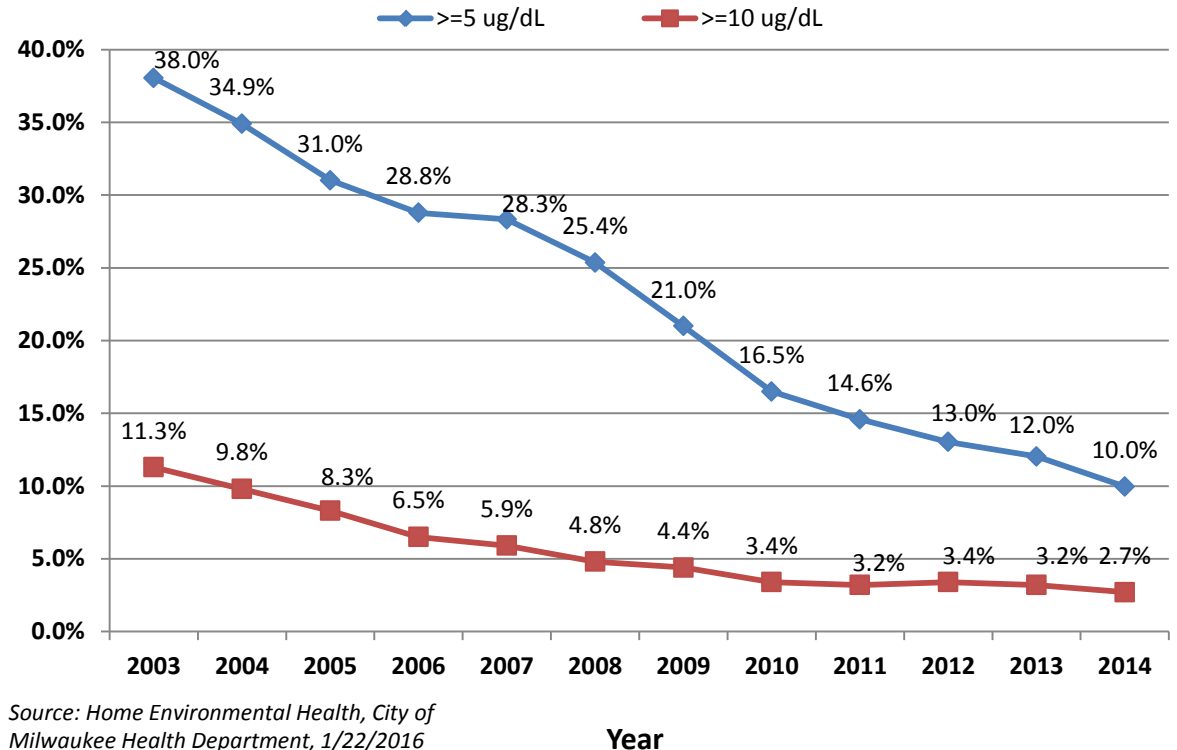
Need for:

- Active public health oversight of drinking water quality
- Reinforcement of environmental health in public health practice
- Strategies to address environmental inequities
- Improved transparency, accountability & coordination across all levels of government
- Health in All Policies



Flint, MI – A teachable moment?

City of Milwaukee Health Department Prevalence of Elevated Blood Lead Levels for Children Under 6 Years Olds, 2003-2014

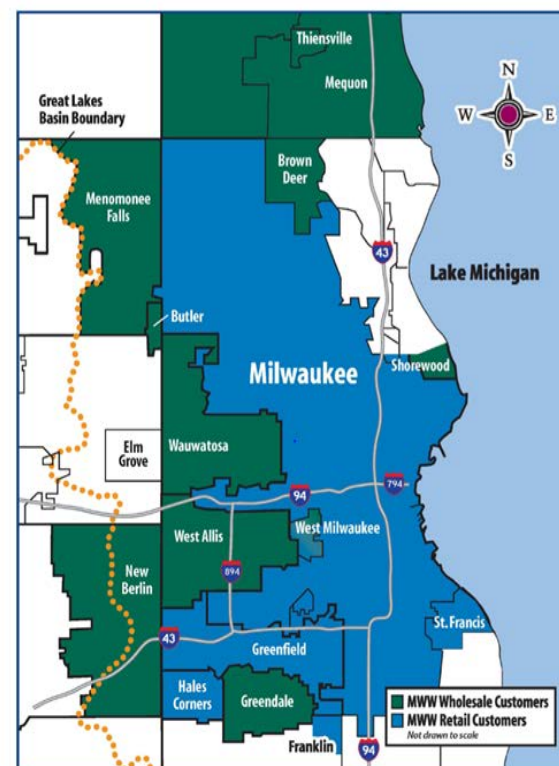


Background (Public Health)

- Highly successful childhood lead poisoning prevention program focusing on lead-based paint hazards
- Lead in water generally considered a secondary source exposure
- Change in CDC reference level to >5 ug/dL (2012)
- No “safe level” of lead

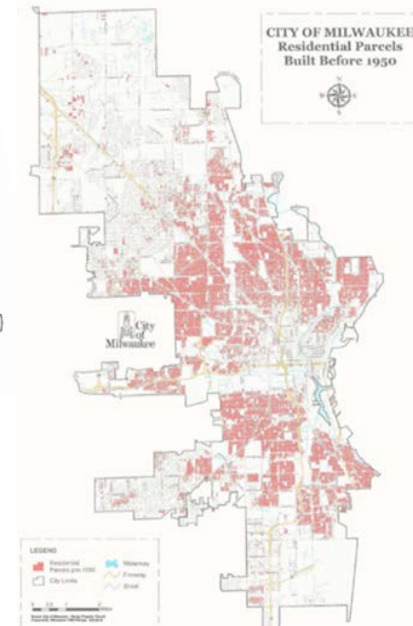
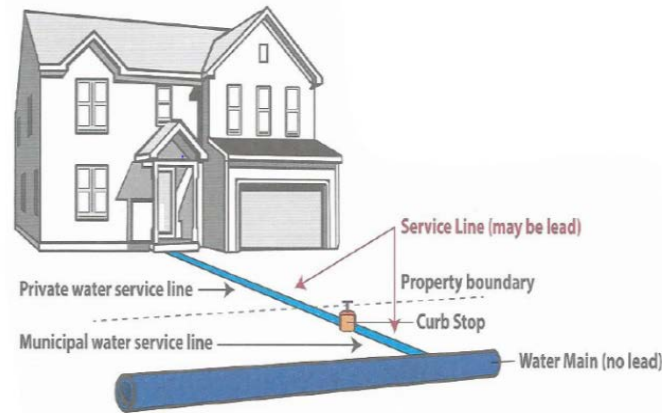
- City of Milwaukee source water derived from Lake Michigan (<2 ppb lead)
- Orthophosphate addition to drinking water in 1996 for corrosion control
- Milwaukee Water Works in full compliance with USEPA Lead and Copper Rule (LCR)
- City undergoing replacement of water distribution mains in coming decade (>100 miles)
- Partial LSL replacement standard operating practice by other regional municipal water utilities

Milwaukee Water Works Service Area
Safe, Abundant Drinking Water.



Background (Water Utility)

- Studies suggesting partial lead service lateral (LSL) replacement association with increases of lead in drinking water
- Estimated 70-80K residential properties with lead service lines in City (built before 1951)
- Current water utility protocols not calibrated against health risks and LSL disturbance
- Pilot water testing results by water utility showing transient increase in lead levels after water main work



City of Milwaukee Water Works

Considerations

- **Federal, State and Local Advisory Workgroup formation**
- **Mayoral moratorium on non-emergency water main replacement involving LSLs**
- **Joint PH and Water utility emergency repair protocols addressing:**
 - **Notification of residents**
 - **Vulnerable populations**
 - **Water testing**
 - **Flushing instructions**
 - **Filter and bottled water distribution**



City of Milwaukee

City of Milwaukee & Lead Laterals

- **City, Health Department, Water utility citizen hotlines**
- **Development of public educational packet and door hangers**
- **Meetings with policymakers and citizens**
- **Integration of other City departments (Neighborhood Services, Budget Office, City Attorney)**
- **National survey of other water utilities and practices (risk messaging, funding mechanisms, protocols, field data)**

Lead Awareness and Drinking Water Safety

Lead is not found in Milwaukee's source water, Lake Michigan, and it is not found in our treated drinking water. Our water meets all federal guidelines for safety and we regularly test to ensure this.

Years ago, lead was used in paint, plumbing, and other products. Lead can cause health problems if it accumulates in your body. Infants, small children under the age of 6 and women who are pregnant and breastfeeding are at special risk. The most common source of lead is from paint in buildings built before 1978.

However, water can dissolve lead from your home or building's water service line and internal plumbing, especially when water sits unused for several hours. Homes and buildings built before 1951 may have service lines made of lead. The service line connects the water main in the street to your home or building. Lead pipes are dull gray in color and are soft enough to be easily scratched with a house key. Also, a magnet will not stick to a lead pipe. A licensed plumber can determine if your household plumbing may be made of lead.



Other steps to consider:

- **Purchase a home filtration system.** Home drinking water filtration systems or pour-through filters can reduce or eliminate lead. Look for products certified by NSF/ANSI under Standard 53 for removal of lead and follow manufacturer's guidelines on installation and maintenance. Find a list of products at milwaukee.gov/water or call (414) 286-2830.
- **Replace your lead service line or interior plumbing.** A licensed plumber can help you assess the cost and feasibility of replacing your lead service line or interior plumbing.
- **The Milwaukee Water Works and the Milwaukee Health Department do not offer water testing.** Find a list of laboratories where you can have your water tested for lead at milwaukee.gov/water or call (414) 286-2830.

Consider a test for lead in the blood of young children

You may wish to consider having children under the age of six tested for lead in their blood. No level of lead has been determined to be safe in the body. As a best practice, the City of Milwaukee Health Department continues to recommend that children are tested three times before turning three (around 12 months, around 18 months, and around 24 months). Children up to age six should have a blood lead test if there is no record of a previous test, if they live in housing built before 1978 with recent or ongoing renovation, or if they have a sibling or playmate who has lead poisoning.

Milwaukee Water Works

Safe. Abundant. Drinking Water.

Please flush your household plumbing as soon as possible after repairs are completed.

Dear Customer:

The service line pipe that carries water from the water main in the street to your meter may be made of lead. After we have completed our work, please thoroughly flush your plumbing to clear pipes of any particles that may have come loose during work.

Remove screens and aerators from the end of all faucets. Starting in the lowest level (basement) and working to the top floor, run the cold water.

After the water runs for 5-10 minutes, start on the top floor and turn off the water, finishing in the basement. Rinse and re-attach the screens and aerators to the faucets.

Learn more about lead in drinking water at milwaukee.gov/water or call Customer Service, (414) 286-2830.

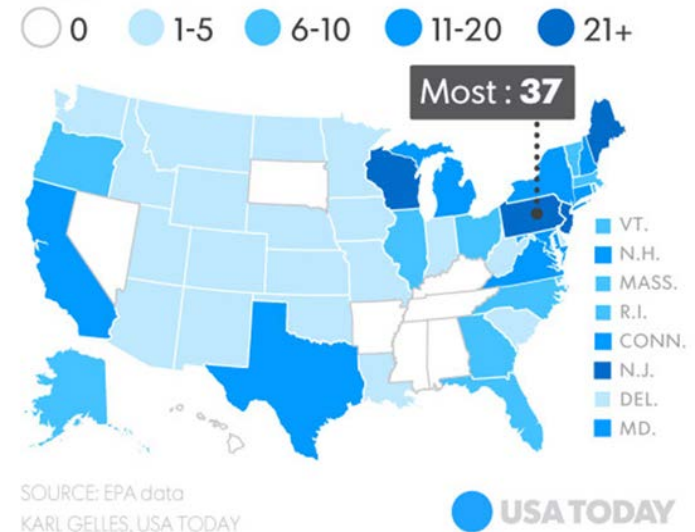
Milwaukee Plumbing 02/14/16

City of Milwaukee & Lead Laterals

- Development of Public Outreach Campaign (Lead Safe Milwaukee)
- Funding and incentives for LSL replacement on private property
- Establish monitoring & response algorithms for:
 - Other utility and public works construction activities
 - Schools and Daycares
 - Restaurants and Food Service
- Public website with LSL database
- Increase water testing capacity

LEAD EXPOSURE IN SCHOOLS, DAYCARES

Number of times water supplied to schools and daycares tested for high levels of lead between 2012-2015.



Next Steps

- **Public Health and Water Utility collaboration essential on all fronts!**
- **Immediately engage public, community and policymakers**
- **Involve federal, state and local agencies in discussions and problem-solving**
- **Do not wait for media to contact you**



Lessons Learned

- **Share information with other regional LHDs and Water Utilities**
- **Notify and engage commercial and industrial water utility customers**
- **Integrate strategies with LHD Childhood Lead Poisoning Prevention Program**
- **Involve local community leadership and networks**
- **Public transparency at all times!**



More Lessons Learned

Acknowledgements

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Thank you!



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Commissioner of Health

www.milwaukee.gov/health

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