

**“Water, Water
Everywhere — Nor
Any Drop to Drink.”**

Alderman James Bohl, Jr., Common Council 5th District

Aaron Szopinski, Office of Mayor Tom Barrett



WHAT IS LEAD?

» A toxic, heavy metal found widely in the environment.

- Used since ancient times due to its workability, low melting point, and resistance to corrosion.

Past and current uses include:

- Paint pigments
- Water pipes, solder, fixtures
- Fuel additives
- Electronics
- Lead-acid batteries
- Projectiles



LEAD EFFECTS ON HUMAN HEALTH

Rate of uptake $>$ Rate of excretion, due to accumulation in bone.

» Health Impacts include

- Neurological effects (Diminished IQ, Behavioral issues)
- Peripheral neuropathy
- Renal system
- Blood system/Increased blood pressure





LEAD POISONING:

The most serious environmental health threat to young children in the U.S.

Children are more susceptible based upon having more small intestine receptors (40% more) that absorb lead, as well as having a developing brain/body and lower body weight.

*

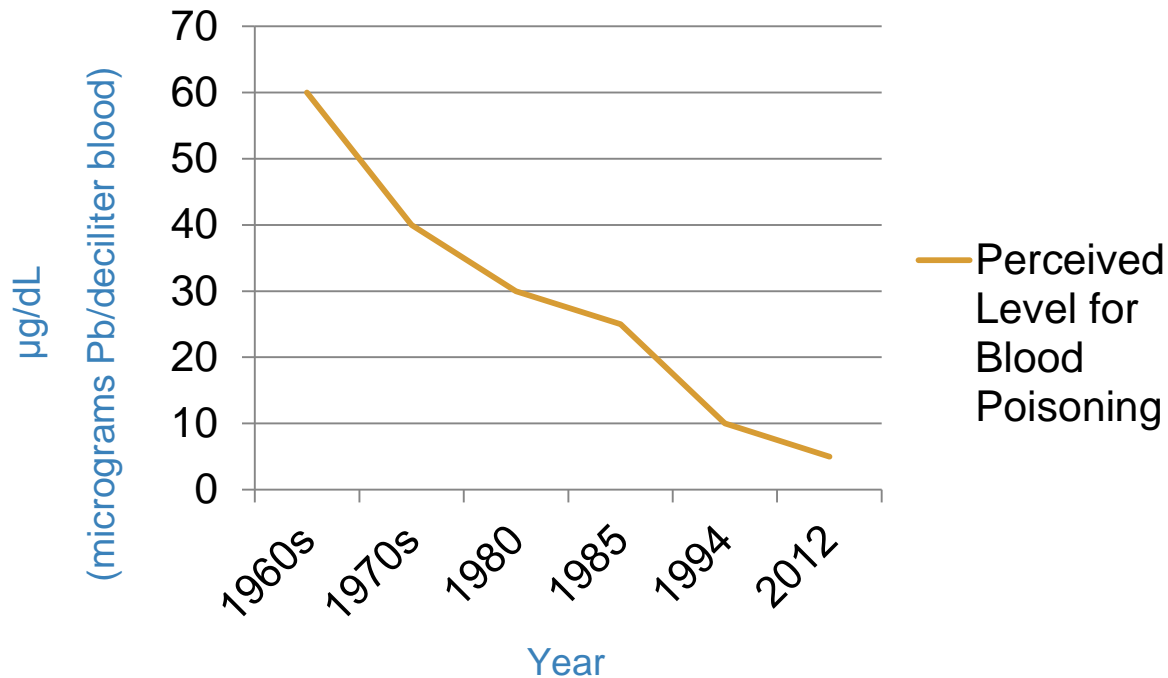
- » Interferes with normal brain development.
- » 2-4 IQ point deficit for each microgram of lead per deciliter of blood increase above 5 micrograms per deciliter.



**WI Dept. Health Services. 2008. Report of Childhood Lead Poisoning in Wisconsin. PPH 45109 (5/08)*

** New England Journal of Medicine. 348;16 www.nejm.org April 17, 2003*

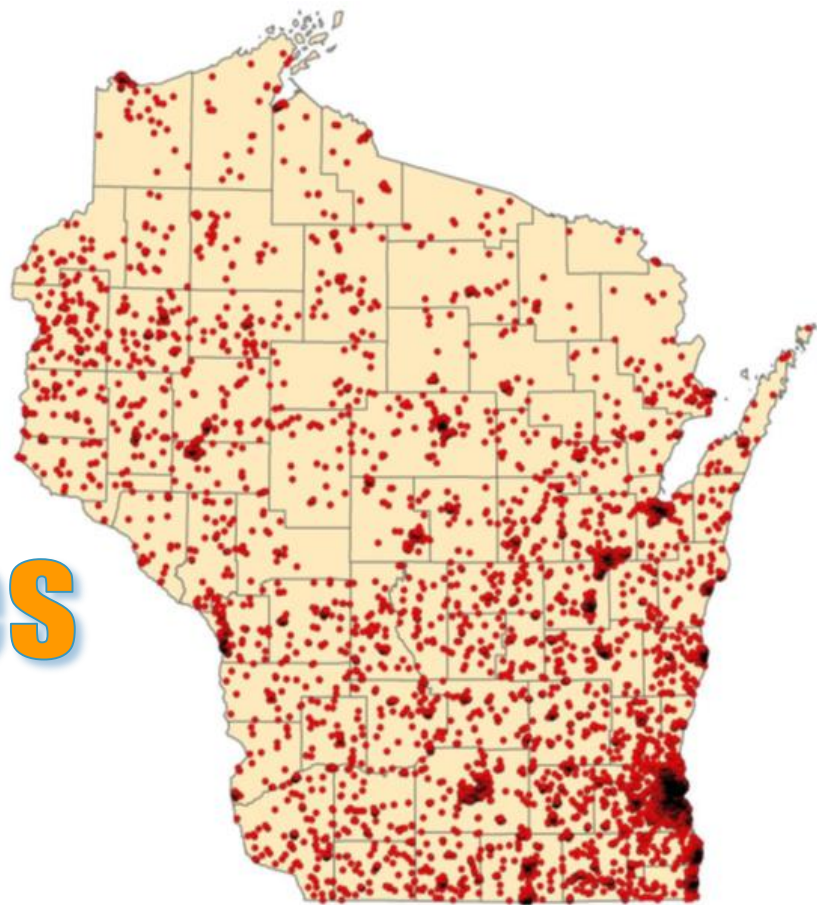
The CDC blood lead “Reference Value”... the perceived level for blood poisoning has decreased over time.





Wisconsin Reported Lead Poisoning Cases

1996 - 2006



Lead poisoning in Wisconsin is a statewide problem...but Milwaukee is most affected.

» More than 44,000 state children reported above acceptable Reference Value from 1996-2006.

Old lead paint reported as the most significant cause of exposure.#

» In 2016, 8.6% of Milwaukee children screened for lead had high blood-lead levels.

This is down from

38%

in 2005.

» By comparison, Flint, Michigan reported 5% of children screened in 2016 reported elevated blood-lead levels.*

Wisconsin Dept. of Health Services

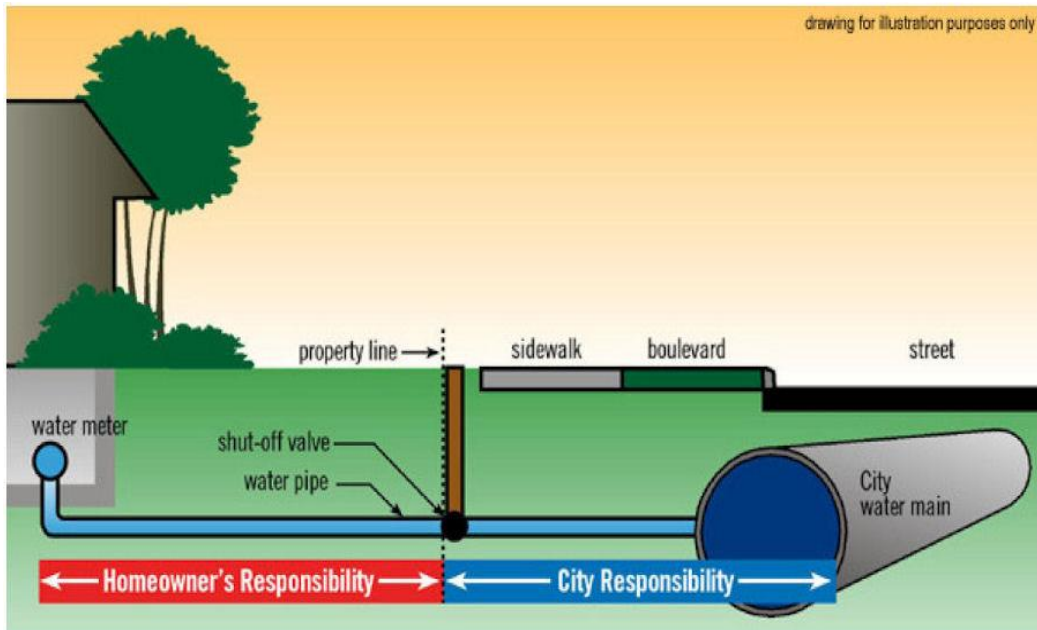
* Reuters/City of Milwaukee Legislative Reference Bureau

LEAD IN WATER?

- » Historically managed as a *secondary* source of exposure.
 - CDC claims 10-20% of collective U.S. lead contamination comes from drinking water.
- » Many communities are now paying extra attention to water as a source of exposure after Washington D.C. (2001) and more recently Flint, MI (2014).
 - Lake Michigan water & city water mains are lead free. Issues arise with leaded water-service laterals and/or with interior sources of lead (flux, solder, pipes, brass fixtures).
- » There are several methods for managing lead in water, but **full removal** is the only permanent solution.

*Study by Monty C. Dozier/Mark L McFarland, University of Texas.

LEAD-WATER ISSUES IN MILWAUKEE



- » Roughly 70k leaded service lines in the city of Milwaukee...maybe more?
- » Lead laterals represent roughly 60-70% of the lead in drinking water sources as a composite average, though this can be deceiving.
- » Concerns about the city's policy of replacement of utility portion of erupted water service line disrupting lead pipes and dislodging lead flakes.



COMPLICATING ISSUES

» Interior Plumbing as a Source of Lead

Testing done in MPS schools showed 16% of the interior faucets or water sources to exceed EPA safe levels for lead, even though not one school tested had a lead service lateral (all were cast iron).

» Galvanized Steel Pipes

Rusted interior plumbing holds lead in its rust for years and provides slow release of lead for many years...even after lead service line is replaced.

» Galvanic Effect

Electrochemical process where presence of one metal increases corrosion of another in presence of an electrolyte. Issue found where copper service lines/plumbing precedes connected leaded lines/plumbing. This increases lead concentration leached into the water.

Water Quality Task Force

» Representing the City of Milwaukee



Ald. James Bohl, Jr., Chair
Common Council, 5th District



Ald. Cavalier Johnson
Common Council, 2nd District



Bevan Baker
Commissioner of Health



Ghassan Korban
Commissioner of Public Works



Carrie Lewis
Superintendent of Milwaukee Water Works



Ald. Jose Perez
Common Council, 12th District

» Representing the Private Sector



Ben Gramling
Sixteenth Street Community Health Center



Dr. Patricia McManus
Black Health Coalition of Wisconsin

- Created by Common Council File 160438, and adopted July 26, 2016.
- Major emphasis of city— replace water service laterals as the primary source of lead in water.
- WQTF has met seven times between September and March with 3 more planned meetings before April 28, 2017.

TASKED WITH:

Exploring the problem of lead in the City's drinking-water infrastructure.

Investigating and making recommendations regarding additional ways to ensure long-term health and safety to Milwaukee's drinking water.

Provide final findings and policy recommendations to the Common Council.



MAJOR FINDINGS

- » Washington DC & Flint, MI crises are **unrelated** to Milwaukee's situation.
- » Water testing mandated by EPA is merely done to test the effectiveness of corrosion control methods used by the water works.
- » Historic process of replacing utility side service repairs means that many in the community could be left with copper lines before lead (Galvanic Effect).
- » With limited resources...replacement of service lines should be prioritized around daycares and schools first. Water filters also prioritized for vulnerable populations (includes expecting mothers along with young children).



MAJOR FINDINGS (2)

- » **Adequate flushing** is the single greatest mass-community “lead reduction” method other than complete replacement of exterior and interior plumbing sources.
 - EPA/CDC recommendation for flushing after 6 hours stagnancy is woefully inadequate and does not reflect the science of lead leaching. Their standard is based upon a “worst case” lead or copper exposure period.

- » Policy of merely replacing service lines does not adequately address the issue of lead exposure through water.

- » High attention level to lead in water complicates actual sources of lead and leads to greater confusion surrounding the issues.
 - Blessing and curse of modern day social media.
 - Resources & attention diminished regarding lead paint & other sources.



MAJOR FINDINGS (3)

- » A robust media campaign addressing lead in paint as well as in water, and urging lead testing of young children is vital to stemming the severity of the lead poisoning issue.
- » Wisconsin state law is extremely rigid and does not currently provide enough flexibility for local governments to fund massive capital projects in any reasonable duration of time.
 - Prohibitions on local taxing sources and state imposed levy limits.
 - State law/PSC imposition from using water revenues to fund capital or health/safety expenditures.
- » Lead removal/remediation and mitigation (both for water and paint) will be a long-term effort.

MAJOR FINDINGS (4)

The City's determination of

70,000

lead service lines may **not be fully accurate**. That number could be too low.

- 1951 date for service lines reflects only city portion of service line and not private.
- Notch exists between 1951 and 1962 when lawful code mandate on private side of the line was enacted.

Madison's & Lansing, MI's Lead Service Line Replacement Programs Show Initial City Estimates May Be Inflated.



Madison

- 2001 to 2012.
- 8,000 water lines replaced.
- City covered ½ of cost for work up to \$2,000 for private side work (max \$1,000 rebate).
- Average private reimbursement of \$675.85 based upon \$1,350 in average private side replacement cost.



Lansing

- Work started in 2004.
- City owned entire line...no public/private side.
- PSC/State law allowed city to use water revenues to pay for replacement.
- Average cost was \$9,000 when started, but reduced to \$3,600 through innovated processes and economy of scale cost savings.

Legislation/Policies Enacted During WQTF's Inception

» City Budget (2017 -)

- \$3.4 million for lead service lines replacement at 385 daycares
- \$2.8 million for 300 emergency service line replacements
- Water Quality Chemist/Construction Supervisor Positions
- Funding for filters

» Free Community Filters/Reduced Cost Filters Through Community Partnership with A.O. Smith

» CC File 160742 from Dec. 13, 2016

- Mandates the replacement of lead water-service lines under certain circumstances
- Establishes a Special Assessment Policy for Private-side work
 - Reimburse 2/3 cost up to \$1,600 max for property owner.
- 10-year payment on special assessments at low interest rate



Legislation/Policies Enacted During WQTF's Inception (2)

- » “Lead Safe Milwaukee” Public Service Campaign Starts (February)

The flyer features a blue header with the text "Lead-Safe Milwaukee" and "SAFE PAINT SAFE WATER SAFE KIDS It's Easy To Protect Your Family!". Below the header are three numbered steps: 1. Safely Clean Up Paint Dust, 2. Run Your Water, and 3. Get Kids Tested. The bottom of the flyer contains detailed text about lead sources and testing, along with the website "LeadSafeMKE.com".

Lead-Safe Milwaukee
SAFE PAINT SAFE WATER SAFE KIDS
It's Easy To Protect Your Family!

1 Safely Clean Up Paint Dust
2 Run Your Water
3 Get Kids Tested

CITY OF MILWAUKEE HEALTH DEPT. & MILWAUKEE WATER WORKS
LeadSafeMKE.com

There are several sources of lead you should know about. Most commonly, homes built before 1978 likely contain lead paint. The paint dust and flakes can be very hazardous — especially to young children. When lead is found in drinking water it is usually because water can dissolve the lead in pipes and plumbing. So what can you do?

1. Bust the Dust
Inside your home, use a disposable wet cloth to clean up paint flakes or dust on windowsills, the floor, and on toys. Outside, check for peeling paint near soil and cover these areas with grass or mulch.

2. Run Your Water Until it's Cold
If you haven't used your water for several hours, run the cold water tap for at least three minutes to bring in fresh water from the city water main. Always use water from the cold water tap for cooking and drinking.

3. Three Before 3
Have your children tested for lead three times before age 3. Contact your child's doctor to get tested.

GET ALL THE FACTS ABOUT BEING LEAD-SAFE AT **LeadSafeMKE.com**
SAFE PAINT SAFE WATER SAFE KIDS

- » CC File 160964 - Ordinance mandating annual testing of all water fixtures in city-controlled charter schools.
- » CC File 161645 - Resolution calling on state to mandate regular testing for all schools and licensed daycares statewide.

WQTF RECOMMENDATIONS

- ✓ **Provide** adequate City resources, supplemented by resources from foundations and corporations, to ensure vulnerable populations have access to lead-removing water filters certified to remove lead by NSF/ANSI Standard 53.
- ✓ **Educate** residents regarding internal plumbing as a source of lead.
- ✓ Urge the State of Wisconsin to provide greater funding to the City to eliminate sources of lead & allow greater water-utility flexibility to pay for lead water-service line replacement.
- ✓ **Provide** outreach to local healthcare providers on the need for lead testing of infants and toddlers.
- ✓ **Use area universities** as resources to address the lead-water issue.
- ✓ **Support** State legislative action requiring testing of water in schools and daycares; or, in its absence, explore city options for mandatory testing of water in city schools and daycares.

WQTF RECOMMENDATIONS (2)

- ✓ **Explore** additional financial assistance options for low-income homeowners' replacement of the privately-owned side of water-service lines, while maintaining a balanced payment program for most to ensure timely removal of service lines.
- ✓ **Seek** new partners and avenues to expand public service information/announcements on managing the potential risks relating to lead-contaminated water, with a special emphasis on vulnerable populations, and ensure the City's ongoing public information campaign presents a balanced approach to all lead risks.
- ✓ **Pass** City legislation to provide private-side lead service line identification, removal and special assessment cost-share criteria for homes constructed between 1952 and 1962.
- ✓ **Seek to balance** workforce development opportunities with timeliness and cost-containment efforts on the lead service line removal program.
- ✓ **Contract** for an **outside review** of Milwaukee Water Works' treatment additives and corrosion-control methods.