

Senate Committee on Natural Resources and Energy
March 8, 2017 Public Hearing
SB 48 – Leading on Lead Testimony

Thank you Committee Members for allowing me to speak today on Senate Bill 48, relating to lead service line replacements. This proposal responds to public health concerns related to lead exposure from drinking water. Lead is a metal which was used in the 20th Century for the construction of drinking water pipes and plumbing fixtures in homes, schools and other buildings. Lead is leached into drinking water primarily by the corrosion of lead in piping and plumbing fixtures.

Background:

Prior to the 1940's, metal pipes containing lead were often used for the laterals that carry water from the street water mains to buildings. After lead material was banned in mid to late 1980's, the United States Environmental Protection Agency (EPA) issued a Lead and Copper Rule (LCR) in 1991 to control the amount of lead and copper in drinking water in public water systems.

The rule outlines several measures that public water systems must take if water samples exceed an action limit in 10 percent of more of water samples taken. The public utility must treat and remove lead before it leaves the water facility. If there is still an exceedance, the rule requires partial lead service line replacement, but only of the lead water main and the portion of the service lateral owned by the utility, which only extends to the curb. The utility is **not** required to replace the portion of the lead service line on private property. Therefore, all the public components of lead may be removed, but homeowners and other occupants, including pregnant women and children, are still at risk from lead exposure in drinking water.

Health Impacts:

There are several health concerns when a person is exposed to lead in drinking water. The DNR indicates that exposure to high levels of lead can cause damage to an individual's brain, kidneys, red blood cells, and digestive system. Children under the age of six are most at risk due to their rapid growth and lead exposure, even at low levels, can cause low IQ, hearing impairment, reduced attention span, and poor academic performance. In infants, whose diet consists of liquids made with water — such as baby formula — lead in drinking water makes up an even greater proportion of total lead exposure (40 to 60%)

In a 2015 nationwide study conducted by the Center for Disease Control, blood lead levels in 2.4 million children under the age of 6 were tested, including 84,539 children in Wisconsin. While the study concluded that blood lead levels in children nationwide were declining, the blood lead level for children tested in Wisconsin exceeded the nationwide average by almost 65%. The study also confirmed that nearly 700 children had blood lead levels which were double what the EPA recommends for public health

action to be initiated (5 micrograms of lead per deciliter of blood). While Wisconsin represents only 1.8% of the total US population, we accounted for 8% of the children that had blood lead levels five times higher than the EPA threshold for public health action.

Funding:

The Federal Safe Drinking Water funds are sent to the states and used primarily to provide assistance to local government for eligible projects to plan, design, construct or modify public water systems. This would include water mains and the utility held portion of the lead service lateral, but not the private portion of the lateral. However, after the crisis in Flint, Michigan, for the first time ever, the EPA has allowed the states to utilize a portion of the Safe Drinking Water Loan Program funding to be used for the removal of private lead service lines.

The EPA compiled information from reports submitted by public water utilities to the Public Service Commission (PSC) in December 2014. The EPA's estimate included a statewide total of 176,542 lead service laterals in 111 municipalities. However, these figures are not complete because not all municipalities submitted lead lateral statistics.

SB 48:

In an effort to allow faster action to remove lead service lines and protect the health and wellbeing of our communities and children, 47 of my colleagues joined me in introducing SB 48. This bill provides that a public water utility may provide financial assistance to a customer for replacing lead service lines if the financial assistance is allowed by a local ordinance.

This bill also states that if a public water utility provides financial assistance, the PSC must include the cost of providing that financial assistance in its determination of water rates. The PSC still retains all jurisdiction under s. Ch. 196 to determine that rates, tolls, charges and schedules are just, reasonable, sufficiently nondiscriminatory and lawful during review of the public assistance provided by a local ordinance.

This bill was developed so communities can create their own local solutions for funding the removal of lead service lines over a reasonable period of time. As we continue to build infrastructure for the 21st century, we need to ensure that lead is not a part of it. We have an opportunity to make a significant stride in eliminating the remaining lead from our drinking water systems and provide our communities with safe and lead free drinking water. Thank you.



LENA C. TAYLOR

Wisconsin State Senator • 4th District

HERE TO SERVE YOU!

Testimony of State Senator Lena C. Taylor
Senate Committee on Natural Resources and Energy
March 8, 2017
Senate Bill 48

Chairman Cowles, Members of the Committee, thank you for allowing me the opportunity to testify on Senate Bill 48, and thank you especially to Sen. Cowles for reaching across the aisle and joining with me to author this important legislation to address this statewide public health crisis.

No one on this committee needs to be told that lead is toxic and should not be in our drinking water. But what you might not know is how long-lasting and wide-ranging the effects of lead poisoning are. Even low levels of lead in children can cause lifetime issues such as lowered IQ, developmental delays, learning disabilities, and behavioral problems. An increase in blood lead levels in children of only 10 µg/dL can cause a permanent drop in IQ as high as 7 points. Increased lead exposure has also been linked to increases in ADHD, teen pregnancy, substance abuse, and criminal activity. Additionally, more than 90% of lead accumulates in the bones. It can then be released into the blood, which exposes organ systems to lead long after the original exposure. This is why long-term lead exposure has irreversible and lasting damages, cardiovascular effects, increased blood pressure, decreased kidney function, and reproductive problems in adults.

Lead poisoning has affected citizens across the state, specifically children. According to current CDC guidelines there is no safe level of lead exposure for children. However in 2015, a statewide test showed lead contamination levels over 5 µg/dL in 1.9% of children under one, 4% in one-year olds, 5.6% in two year olds, and 4.6% in three to five year old tested. While these percentages may not seem high, this adds up to thousands of kids whose health is being put in danger by lead contamination. In 2014, Milwaukee specifically accounted for 60% of the 4,000 children who tested positive for elevated lead. Additionally, 8.6% of children in Milwaukee had levels above which children were known to suffer significant health problems, compared to 4.9% of children at this level in Flint, Michigan.

These are scary numbers, but the good news is that these problems are preventable if we replace the lead services lines that deliver our water. There are around 200,000 lead service lines in the state, and 70,000 residential lines are in Milwaukee alone. The only way



to protect completely from lead contamination is to remove and replace all lead service lines. The challenge that many municipalities have faced in replacing these pipes is that the last section of pipe leading into the home is owned and controlled by the homeowner, not the city. If the city replaced only the lead service lines they own, that would actually make the lead problem worse, by causing more lead to leach into the water at the joints where the lead and non-lead pipes connect. In other words, in order to replace any lead service lines, we have to replace every lead service line. However, under current law, water utilities can only use rate-payer revenue to replace publicly owned service lines. SB 48 addresses this issue by allowing municipalities to authorize their water utility to fund the replacement of both the private and public sections of the lead service lines.

Thank you again for hearing this bill, I look forward to continuing to work with this committee to help get the lead out.



131 W. Wilson St., Suite 505
Madison, Wisconsin 53703
phone (608) 267-2380; (800) 991-5502
fax: (608) 267-0645
league@lwm-info.org; www.lwm-info.org

To: Senate Committee on Natural Resources and Energy
From: Curt Witynski, J.D., Assistant Director, League of Wisconsin Municipalities
Date: March 8, 2017
Re: **SB 48, Allowing Financial Assistance Programs for Replacement of Lead Service Laterals**

The League of Wisconsin Municipalities strongly supports SB 48, making it lawful for a municipal water utility to establish a program, pursuant to a municipal ordinance, providing financial assistance to private property owners for the replacement of lead water service lines.

With the national spotlight on Flint, Michigan the last two years, the detrimental long term health impacts of lead in drinking water has become abundantly clear as has the significant cost to replace the nation's aging water infrastructure. The Environmental Protection Agency (EPA) estimates that in Wisconsin at least 176,000 lead service lines connect homes to the municipal water mains. Many cities and villages in Wisconsin are working on replacing their lead water mains. (The back of this memo lists Wisconsin cities with lead water service pipes.)

The Department of Natural Resources strongly recommends that private water service laterals containing lead be replaced at the same time that municipal water utilities replace their lead water mains. Replacement and maintenance of water service laterals are the responsibility of the owners of the property they serve. Generally, property constructed prior to 1952 is connected to the water main by lead service laterals. According to City of Milwaukee staff, the average cost of service lateral replacement is \$3,600 with a range of \$2,000 to \$7,200. Many of the people residing in properties with lead water services are low income and find it difficult to afford the full cost of replacement.

The Wisconsin Public Service Commission interprets current law as disallowing utilities from using rate payer revenue to assist private property owners with the cost of replacing lead service pipes. At the same time, levy limits constrain municipalities from using tax levy to fund a financial assistance program to aid property owners in covering the cost of replacing lead laterals.

SB 48 makes it clear that a municipal water utility, if authorized by the municipal governing body, may establish and fund a financial assistance program to help private property owners finance the replacement of lead service laterals.

We urge the Committee to recommend passage of SB 48. Thanks for considering our comments.

Communities with Lead Services

Municipality	Lead	%	Total
Milwaukee	70,000	43.1%	162,405
Racine	11,603	33.9%	34,237
Kenosha	9,052	30.5%	29,642
Wauwatosa	8,655	51.7%	16,728
Wausau	7,178	45.0%	15,957
West Allis	6,689	34.2%	19,581
Manitowoc	6,570	43.8%	15,002
Beloit	3,210	18.6%	17,296
Whitefish Bay	3,000	61.7%	4,865
Green Bay	2,337	6.6%	35,624
Two Rivers	2,326	44.3%	5,253
South Milwaukee	1,905	32.1%	5,935
Janesville	1,834	9.1%	20,262
Eau Claire	1,431	5.7%	25,087
Neenah	1,364	14.1%	9,658
Cudahy	1,244	22.8%	5,457
Watertown	1,114	14.5%	7,701
Beaver Dam	1,017	17.4%	5,846
Ashland	720	21.5%	3,348
Platteville	645	19.9%	3,238
Monroe	603	12.6%	4,786
Fort Atkinson	307	6.9%	4,435
Appleton	252	0.9%	29,152
Sun Prairie	145	1.7%	8,668
Marshfield	86	1.1%	7,757

Health Effects of Lead
Testimony presented by Elizabeth J. Neary, MD, MS, FAAP
Senate Committee on Natural Resources and Energy
March 8, 2017

Dear Chairman Cowles and Members of the Committee:

I appear before you today in support of Senate Bill 48. As a researcher and physician, I am very concerned about public exposure to lead and the health effects. I commend Senator Cowles' for his legislation to address lead in drinking water.

Lead is toxic to all cells and its damage is long lasting. Lead poisoning is a totally preventable disease. The health effects are seen in all age groups, but are particularly devastating to the young child, developing fetus and individuals with underlying medical conditions.

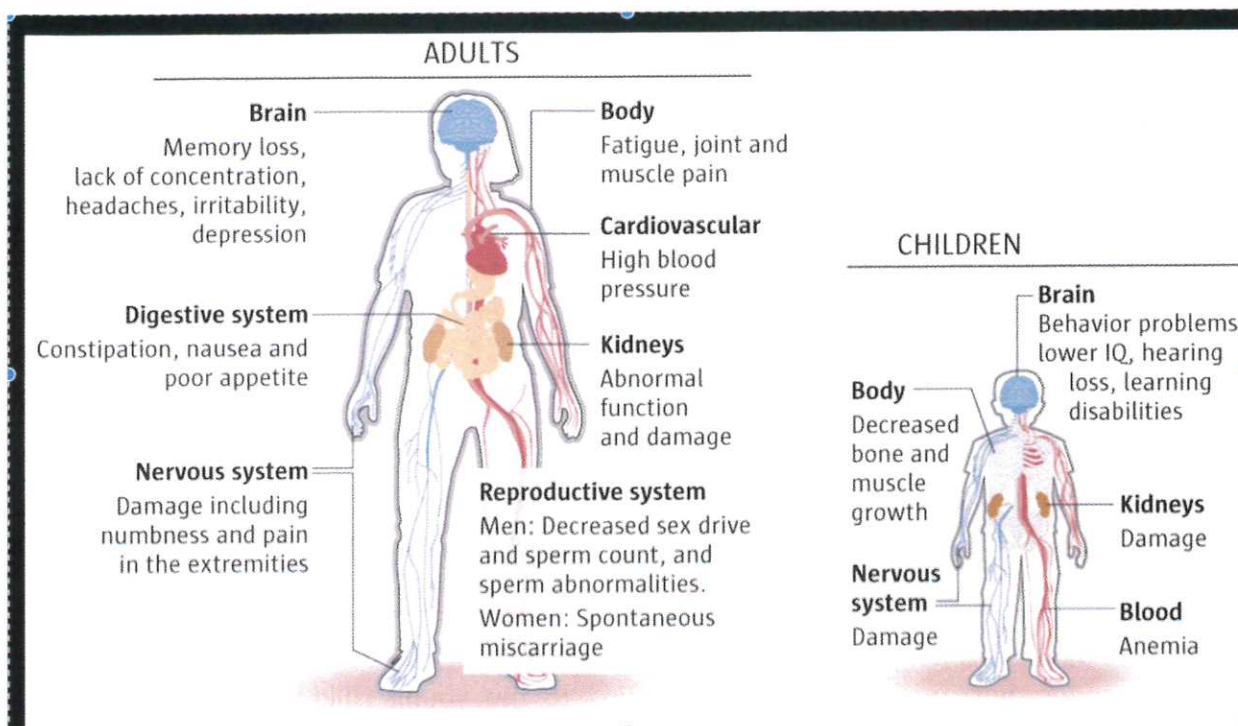
As new research continues to provide evidence of health effects at lower and lower blood lead levels, we now know that there is NO safe level of lead. The CDC acknowledges that there is no safe level of lead, but uses 5 ug/dl as a reference value in children.

Some key facts about the metabolism of lead are important to understanding why eliminating environmental exposure to lead, especially in water is so important. Lead in a liquid form is more easily absorbed than in a solid form. Young children can absorb lead more easily than adults. Even at lead levels that fall within the regulated tolerances of water set by the EPA (15ppb), as many as ¼ of formula fed infants can be poisoned by lead. Lead is stored in the bones. This reservoir of lead in the bones can be released back to the blood. So, lead can cause damage long after the exposure. Two specific times that lead is known to be released back to the blood is during pregnancy and in patients with osteoporosis.

The effects of lead are many and varied. At extremely high levels, lead can result in death. (See graphic on reverse side). In adults, even at low levels of exposure over time, lead can damage the heart, kidneys and brain, resulting in elevated blood pressure and age related cognitive decline. Certain vulnerable populations are at increased risk of damage from low levels of lead exposure. These include developing fetus, children and adults with underlying medical conditions, such as diabetes and high blood pressure (hypertension).

The effects of lead are most severe in young children and the developing fetus because they are in a rapid state of growth and development. 85-95% of brain development occurs before age 5. Lead damages the young brain permanently. Lead poisoning results in lower IQ scores, behavioral issues, such as hyperactivity, aggressiveness, and impulsivity and learning problems. In pregnant women, lead can lead to miscarriage and lower birth weight infants.

Lead poisoning will only get worse as our pipes continue to age; therefore, I encourage you to support SB-48. I would be happy to take questions at this time.



Selected References:

Centers for Disease Control and Prevention. Preventing lead poisoning in young children. 2005 Available at <http://www.cdc.gov>

Hanna-Attisha et al. Elevated blood lead levels in children associated with Flint drinking water crisis. *AJPH* 2016:283-90

Lanphear BP, Hornung R, Khoury J, Yolton K, Baghurst P, Bellinger DC, Canfield RL, Dietrich KN, Bornschein R, Greene T, Rothenberg SJ, Needleman HL, Schnaas L, Wasserman G, Graziano J, Roberts R. Low-level environmental lead exposure and children's intellectual function: an international pooled analysis *Environ Health Perspect*. 2005 Jul;113(7):894-9. PMID: 16002379

[NTP Monograph on Health Effects of Low-Level Lead](#) (USDHHS, 2012)

Spivey, Angela The Weight of Lead: Effects Add Up In Adults *Environ Health Perspect*. 2007 Jan; 115(1): A30–A36



Department of Administration
Intergovernmental Relations Division

Tom Barrett
Mayor

Sharon Robinson
Director of Administration

Jennifer Gonda
Director of Intergovernmental Relations

**City of Milwaukee Testimony on SB 48
Senate Committee on Natural Resources and Energy
March 8, 2017**

My name is Ghassan Korban and I am the City of Milwaukee's Commissioner of Public Works. The City of Milwaukee supports SB 48, relating to lead service line replacements. I want to thank Senator Cowles for authoring the bill and holding this public hearing today. I also want to thank all of the committee members for coauthoring this important legislation. I appreciate the opportunity to share the city of Milwaukee's perspective on this issue.

As you know, lead service lines (LSLs) could be an issue for any community in the State that has pre-1951 housing. According to the PSC, there are approximately 170,000 LSLs throughout the State of Wisconsin. Milwaukee has about 70,000 of them, or about 40% of the statewide total. Having said that, it's important to state that lead is not found in Milwaukee's treated source water and that drinking water provided by the Milwaukee Water Works meets all federal standards for safety and quality.

The proposed legislation amends current state law to provide municipalities and their water utilities with new tools in two key ways:

1. SB 48 would provide greater flexibility to municipalities and their water utilities by allowing the use of existing utility ratepayer revenues to provide financial assistance to private property owners for Lead Service Line replacement costs.
2. SB 48 would require the PSC to include in the determination of water rates the cost of providing that financial assistance.

We need the tools that SB 48 provides because the PSC determined in a 2000 Madison Water Utility rate case that the use of ratepayer funds for private Lead Service Line replacements would be an unreasonable and discriminatory rate practice. Under that ruling, municipal water utilities are currently prohibited from using funds generated from ratepayers to pay for Lead Service replacement costs.

Additionally, in a 2014 rate case, the PSC ruled that the Milwaukee Water Works must increase its main replacement cycle to 15 miles of water mains annually, increasing to 20 miles per year by year 2020. After this ruling, (early 2015) the Milwaukee Water Works began proactively testing water samples related to main replacement work where there was a connection to Lead Services. Concerning levels of lead were found in some of the samples, so we placed a voluntary moratorium on replacing water mains connected to Lead Service Lines until we could determine a course of action that protected the health of our water customers.

We informed the PSC, DHS, and the DNR of our decision, as we had a competing order from the PSC to complete the main replacements. We felt we could not put the public at risk due to the

temporary elevated lead levels found in water samples caused by the disruption of the partial replacement. In the meantime, we completed only those 2015 scheduled projects where copper was present. Furthermore, in 2016 we made adjustment to our program and relayed 15 miles of water mains that are connected to copper services; consistent with the PSC ruling.

Concurrently, an EPA advisory and studies conducted nationally were indicating that partial Lead Service replacements were no longer advisable. In order to address the need for full Lead Service replacement, the City of Milwaukee passed an ordinance effective January 1, 2017 that mandates full service line replacement when leaks or failures are discovered, and when Milwaukee Water Works replaces the utility-owned portion of the LSL for any reason. Upon passage of the ordinance, Milwaukee Water Works has resumed replacement of its water mains as required by the PSC. While limiting the 2017 program to water mains connected to copper service lines, the 2018 program will be a combination of water mains with both copper and lead services.

The average cost to replace a full LSL is approximately \$11,000. About \$6,000 of that cost is to replace the utility side of the LSL and \$5,000 to replace the homeowner or private side. In Milwaukee, the cost to the homeowner is particularly challenging as 60% of the households containing LSLs have a median household income below the city median of \$35,489.

In order to encourage our residents to comply with replacing the private side LSL, the City's ordinance requires the property owner to pay for 1/3 of the replacement cost, or \$1,600 whichever is less, and can be assessed payable over ten years. The remaining 2/3 cost, approximately \$3,400, is subsidized by the City. We need the option to use the water utility rate revenue to pay for the City subsidy, and SB 48 would give us that option and flexibility.

In 2017, we plan to replace over 300 LSLs serving daycares at a total cost of \$3.4 million. \$1.8 million will come from utility revenue to pay for the public side replacement and the remaining \$1.6 million is from the Safe Drinking Water Loan Program awarded to Milwaukee from the DNR. We plan to replace another 300 LSLs this year that experience leaks or failures with \$1.8 million from the utility, another \$1 million from the Safe Drinking Water Loan Program, and \$500,000 assessed to the property owner. 73 LSL have already been replaced.

In addition to SB 48, we need a continued commitment from the State of Wisconsin to address LSL replacements. We would like to see a continued dedication of 30% of the EPA's capitalization grant to the Safe Drinking Water Loan Program to LSL replacement, as was done in 2017, until all LSLs in Wisconsin have been replaced. We have started advocating with members of the Joint Committee on Finance for that commitment.

Obviously, there has been a greater discussion and focus on LSLs stemming from the Flint water crisis, new scientific research, and updated guidelines from the EPA. It is going to take a federal, state, and local commitment to address the replacement of this infrastructure. The City of Milwaukee estimates the total cost to replace both the public and private side will be \$770,000,000. It would take the City of Milwaukee about 50 years to replace all 70,000 full Lead Service Lines, requiring at least \$15 million in annual investments. Our goal is to reduce the timeframe to 30 years, which will likely require external funding from state and federal governments in addition to local ratepayers and homeowners.

Thank you for your time and attention. The City of Milwaukee supports SB 48 and we respectfully ask you to support its passage.

For more information please contact:

Brenda Wood, Intergovernmental Policy Manager, bwood@milwaukee.gov, 414-286-2371



Wisconsin Rural Water Association
350 Water Way • Plover, Wisconsin 54467
715-344-7778 • Fax: 715-344-5555 • E-mail: wrwa@wrwa.org

To: Members, Senate Committee on Natural Resources and Energy
From: David Lawrence, Executive Director, Wisconsin Rural Water Association
Date: March 8, 2017
Subject: **Testimony on SB 48 – Leading on Lead Act**

The Wisconsin Rural Water Association (WRWA) is a nonprofit organization representing 676 community water and wastewater systems in Wisconsin providing services to over four million Wisconsin residents. We also have close to 200 businesses that are members of our organization, and we are the leading provider of training and technical assistance to water and wastewater system operators, managers and administrative personnel in the state of Wisconsin.

WRWA supports SB 48, Leading on Lead Act. The bill addresses this critical issue by allowing water utilities the ability to provide much-needed financial assistance to remove private laterals.

Over the last year, the detrimental impacts of lead in drinking water and the cost to replace the aging water infrastructure have been a reoccurring national headline. The public health crisis in Flint, Michigan has reinitiated policymakers on the federal, state and local levels to examine the resources and programs for the removal of lead pipes.

In Wisconsin, the Environmental Protection Agency (EPA) estimates that **at least 176,000 lead service lines** connect homes to the municipal water mains. This does not include the undocumented number of lead water tap or interior water pipes in Wisconsin's older homes. The state has recently made strides in this area, with the Department of Natural Resources' new financial assistance program to help replace lead service lines on private property. This legislation builds on those efforts and will allow utilities to tailor loan and grant programs to assist property owners in protecting public health.

WRWA has been working with state agencies and the legislature to address other impediments that prevent municipal utilities and customers from moving forward with lead pipe removal. This includes allowing water utilities to assist in the removal of lead laterals on private property and ways to prioritize funding for local road reconstruction programs that aid in the replacement of lead service lines.

There is a lot of work to be done to remove all lead pipes in Wisconsin. WRWA believes SB 48 is an important step to address this issue and ask for the committee's support of this bill.

Thank you for your time and consideration.



John Muir Chapter

Sierra Club - John Muir Chapter
754 Williamson St., Madison, Wisconsin 53703-3546
Telephone: (608) 256-0565
E-mail: john.muir.chapter@sierraclub.org Website: sierraclub.org/Wisconsin

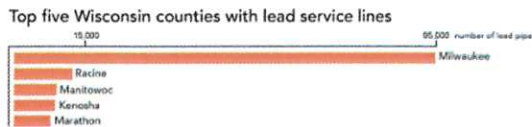
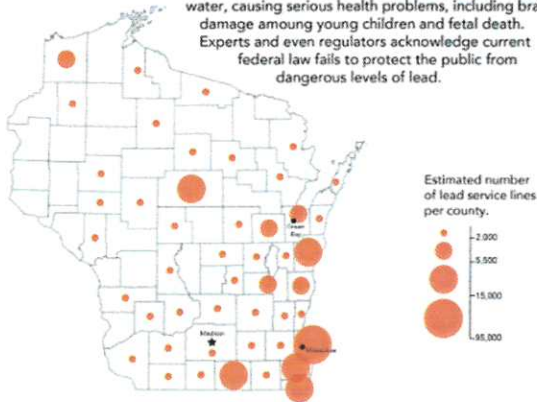
Statement of the Sierra Club's John Muir Chapter in support of Senate Bill 48 March 8, 2017

Senator Cowles and members of the committee, my name is Bill Davis. I would like to thank you for the opportunity to provide comments in support of Senate Bill 48 on behalf of the John Muir Chapter of the Sierra Club, and I would like to thank Senator Cowles and Representative Thiesfeldt for authoring this bill. The John Muir Chapter represents over 15,000 members and supporters living throughout the state. We work to provide opportunities for Wisconsinites to enjoy nature and advocate for the fair and rational management of our common resources so that all Wisconsin residents have access to the clean air, water, land, flora and fauna they need for their health, safety and well-being as well as to move our economy forward.

It is a sad truth that in the 21st Century we are still talking about lead in drinking water, yet here we are. According to the United States Environmental Protection Agency there are at least 176,000 homes and businesses spread all across the state that still have lead service lines.

Dangerous lead pipes abundant in Wisconsin

Wisconsin has at least 176,000 so-called lead service lines carrying water to homes and businesses, according to a very limited EPA study. Such pipes can leach lead into drinking water, causing serious health problems, including brain damage among young children and fetal death. Experts and even regulators acknowledge current federal law fails to protect the public from dangerous levels of lead.



CREDIT: Reporting and data analysis, Silke Schmidt; map and chart, Katie Kowalsky, Wisconsin Center for Investigative Journalism.
SOURCE: Miguel Dal Toral, U.S. Environmental Protection Agency. Documentation of lead service lines in the other 25 counties could not be identified.

Remember to Support the Sierra Club through your workplace giving campaign!
The John Muir Chapter is proud to be a member of



100 % post-consumer waste recycled paper



Forest Stewardship Certified paper



These lines are part of the reason why the 2014 Report on Childhood Lead Poisoning in Wisconsin from the Wisconsin Department of Health Services show significant numbers of children across the state had high levels of lead in their blood. Lead contamination can cause well known developmental problems in children, particularly cognitive deficits.

Communities with the highest prevalence rates for lead poisoning in tested children under age 6, 2014

Local health departments	Total tested	Children with elevated blood lead levels	Percentage of tested children with elevated blood lead levels
City of Milwaukee	26,097	2,244	8.6%
City of Watertown	535	45	8.4%
Buffalo County	178	13	7.3%
Sheboygan County	1,215	76	6.3%
City of Racine	2,467	153	6.2%
Rock County	2,354	142	6.0%
Green Lake County	250	14	5.6%
Pepin County	90	5	5.6%
City of Menasha	254	14	5.5%
Richland County	175	9	5.1%
Statewide	87,987	3,922	4.5%

Levels of 5 micrograms per deciliter and above are considered elevated

Source: 2014 Report on Childhood Lead Poisoning in Wisconsin, Wisconsin Department of Health Services

Credit: Abigail Becker/Wisconsin Center for Investigative Journalism

Addressing lead pipes requires resources and Senate Bill 48 takes a needed step towards addressing this. The Bill will allow local public water utilities to provide financial assistance for the removal of lead service lines. By providing resources that will allow the lines to be removed SB 48 ensures that the threat of lead contamination from water pipes is permanently removed.

It is for these reasons we urge the committee to pass SB 48.

Thank you again for the opportunity to testify.

Testimony for Senate Bill 48 regarding Lead and Drinking Water

Wisconsin Department of Natural Resources' Steve Elmore

March 8, 2017

Lead action level exceedances since 1/1/2012

- 22 Municipal systems
- 12 Other community water systems (mobile home parks, condo associations, etc.)
- 65 businesses, schools, industries with their own well

Sampling requirements

- Sample "worst case" homes and faucets to determine if corrosion control is working
- Example: 10 samples, line up the analytical results from low to high. The 9th highest result determines compliance with the action level - if that result is above 15 mg/L lead, the action level is exceeded.
- Provide notice of results to consumers, even if action level is not exceeded.

Exceedance requirements

- DNR is notified by our data management system when a lead action level is exceeded and sends a letter to the water system regarding follow-up requirements
- The system provides a public notice, press release, information on bill, public education flyer, and other outreach to consumers
- The system provides a corrosion control plan to the DNR. DNR reviews and approves corrective action plan.

Corrosion treatment

- Orthophosphate produces a scale that isolates the water from the lead pipe material – contributes phosphates to our waterways, contributing to algal blooms. Phosphorus must be taken out to meet discharge limits on the wastewater side.
- Limits corrosion, but scale can slough off and lead to lead exposure. In 2014, the cold winter caused pipe freezing, assumed to scrape the scale off pipes and contribute to 14 municipal systems exceeding the lead action level.
- Short-term solution

Lead service line replacement

- A second lead action level exceedance requires lead service line replacement
- Only way to limit exposure long-term where lead service lines exist
- According to some estimates, about 170,000 known lead service lines exist in Wisconsin
- DNR provided \$14.5 million last year to 38 communities to replace lead service lines in 2016. More is available in 2017, but after FY18 the private lead service line funding will end.