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# Milwaukee's Lead Service Line Replacement Program Semi-Annual Report

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January 27, 2020

Public Works Committee

Common Council File #201264

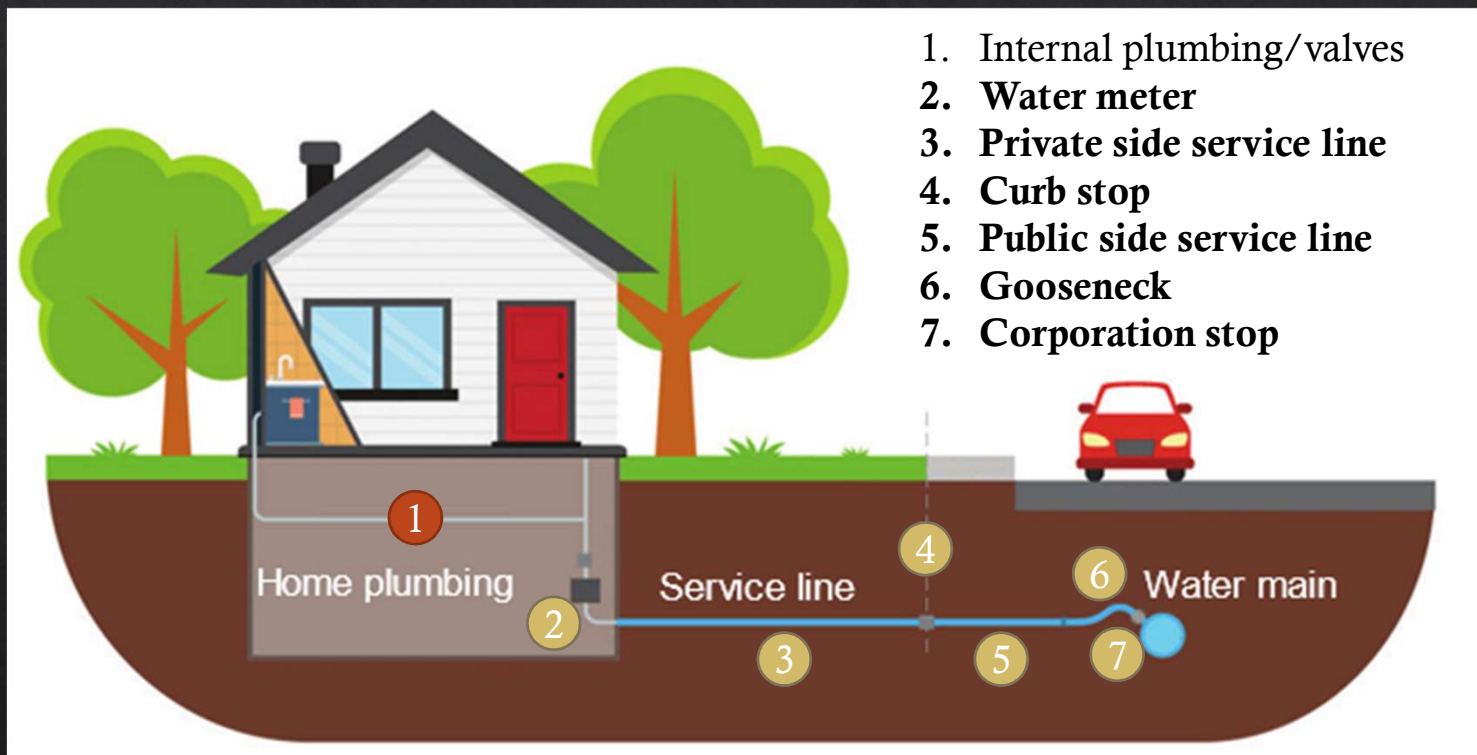
**Milwaukee**  
**Water Works**

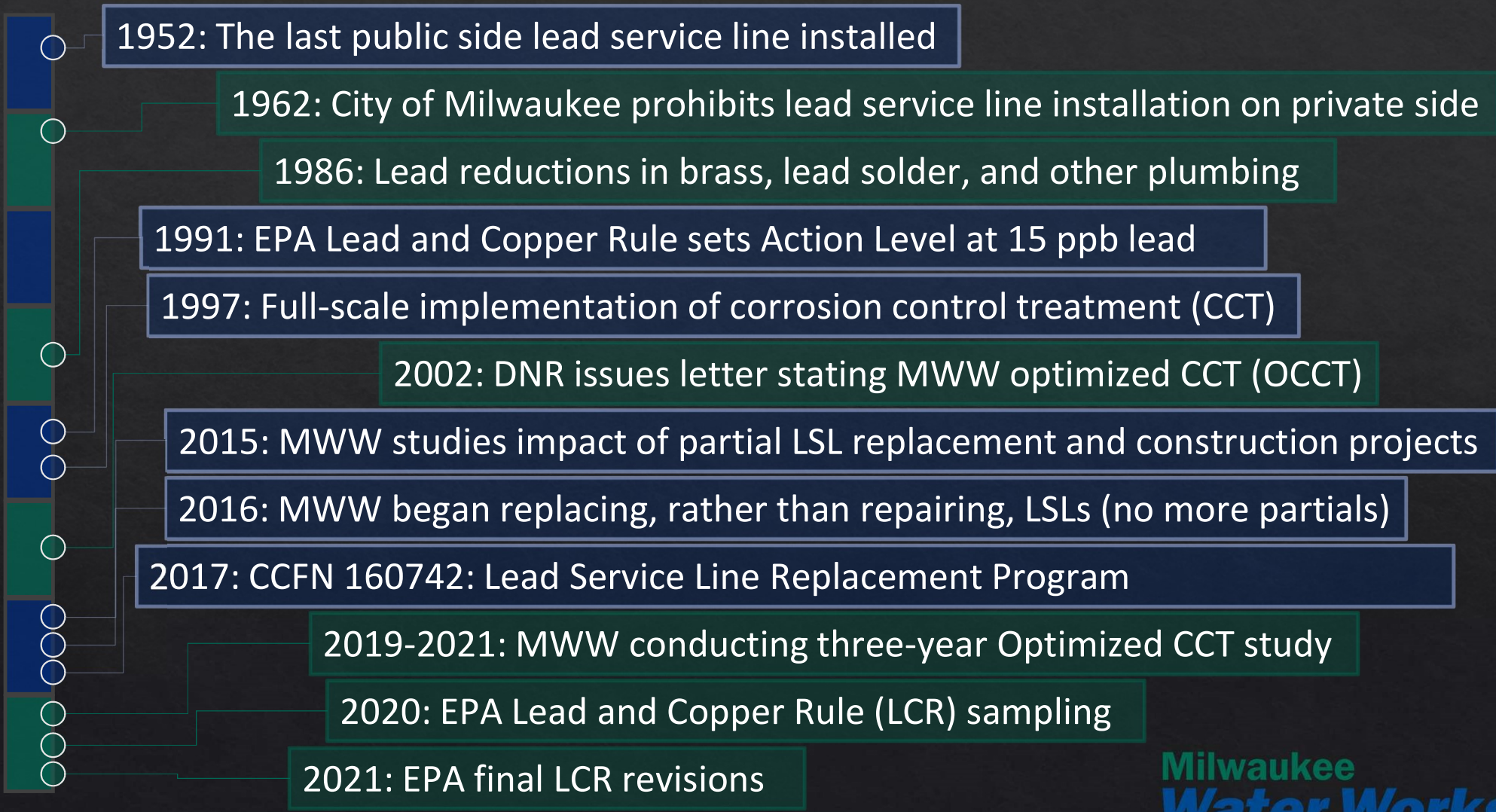
# Lead Basics

- ◇ Lead is a toxic substance
- ◇ Lead exposure is cumulative
- ◇ There is no safe exposure to lead
- ◇ Young children are particularly vulnerable
- ◇ Goal is to remove ALL sources from the community
  - ◇ Lead-Safe Milwaukee: <https://city.milwaukee.gov/LeadSafeMKE>
    1. Safe Paint
    2. Safe Water: Lead Service Line Replacement (LSLR) program
    3. Safe Kids



# What is a lead service line?



A vertical timeline on the left side of the slide, composed of alternating blue and green segments. White circles are placed at the top of each segment, with lines extending from them to the right, connecting to text boxes. The text boxes are colored to match the segment they point to: blue boxes for 1952, 1991, 1997, 2015, 2016, and 2017; green boxes for 1962, 1986, 2002, 2019-2021, 2020, and 2021. The text boxes are arranged in a descending staircase pattern from top-left to bottom-right.

1952: The last public side lead service line installed

1962: City of Milwaukee prohibits lead service line installation on private side

1986: Lead reductions in brass, lead solder, and other plumbing

1991: EPA Lead and Copper Rule sets Action Level at 15 ppb lead

1997: Full-scale implementation of corrosion control treatment (CCT)

2002: DNR issues letter stating MWW optimized CCT (OCCT)

2015: MWW studies impact of partial LSL replacement and construction projects

2016: MWW began replacing, rather than repairing, LSLs (no more partials)

2017: CCFN 160742: Lead Service Line Replacement Program

2019-2021: MWW conducting three-year Optimized CCT study

2020: EPA Lead and Copper Rule (LCR) sampling

2021: EPA final LCR revisions

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# Lead service line replacement mandate

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- ◇ As of January 1, 2017, full lead service line mandated to be replaced with copper when:
  - ◇ A leak or failure has been discovered on either the privately- or utility-owned portion
  - ◇ The utility-owned portion is replaced on either a planned or emergency basis
  - ◇ The property is a child care facility (licensed or certified)
- ◇ REPAIR or RECONNECTION to lead service line PROHIBITED
- ◇ Property owner may initiate replacement of privately-owned portion at their own expense with which MWW will pay for and replace the utility-owned portion

## Lead service lines replaced to date

Reason for LSL Replacement	2017	2018	2019	2020*	Total (%)
Leak or failure	437	547	670	628	2282 (66)
Child cares and schools	150	204	129	48	531 (15)
Water main relay project	18	143	177	161	499 (15)
Other planned projects	-	-	-	25	25 (< 1)
Owner initiated	11	39	23	24	97 (3)
Other utility work	6	0	1	0	7 (< 1)
Total LSL Replacements	622	933	1000	886	3441 (100)
<b>Total Filter Distribution</b>	<b>1164</b>	<b>1359</b>	<b>1418</b>	<b>965</b>	<b>4906</b>

\* Data last updated January 25<sup>nd</sup>, 2021

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## Lead service line financial impact

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- ◇ Average full replacement cost as of December 31, 2020: \$11,353
  - ◇ Private side: \$5,863
  - ◇ Public side: \$5,490
- ◇ One- to four-family residential property cost share for mandated replacements limited to \$1,754 as of March 1, 2020 (or one-third the cost of the private side if lower [currently \$1,954])
- ◇ 2021 planned projects ~750
- ◇ Emergency and child care as necessary

# Lead and Copper Rule (LCR)

- ◇ Promulgated in 1991
  - ◇ Established action levels (AL) for Lead and Copper
    - ◇ Lead: 15 ppb ( $\mu\text{g/L}$ ) at 90<sup>th</sup> percentile
    - ◇ Copper: 1300 ppb ( $\mu\text{g/L}$ ) at 90<sup>th</sup> percentile
  - ◇ If AL is exceeded, must take following actions:
    - ◇ Corrosion control treatment (CCT)
    - ◇ Notify public
    - ◇ Perform outreach
    - ◇ IF cannot reduce below AL, must replace lead service lines
    - ◇ NOTE: MWW has not exceeded AL since 1997
- A. These are not health based limits  
B. These are referred to as “treatment techniques” or (TT)



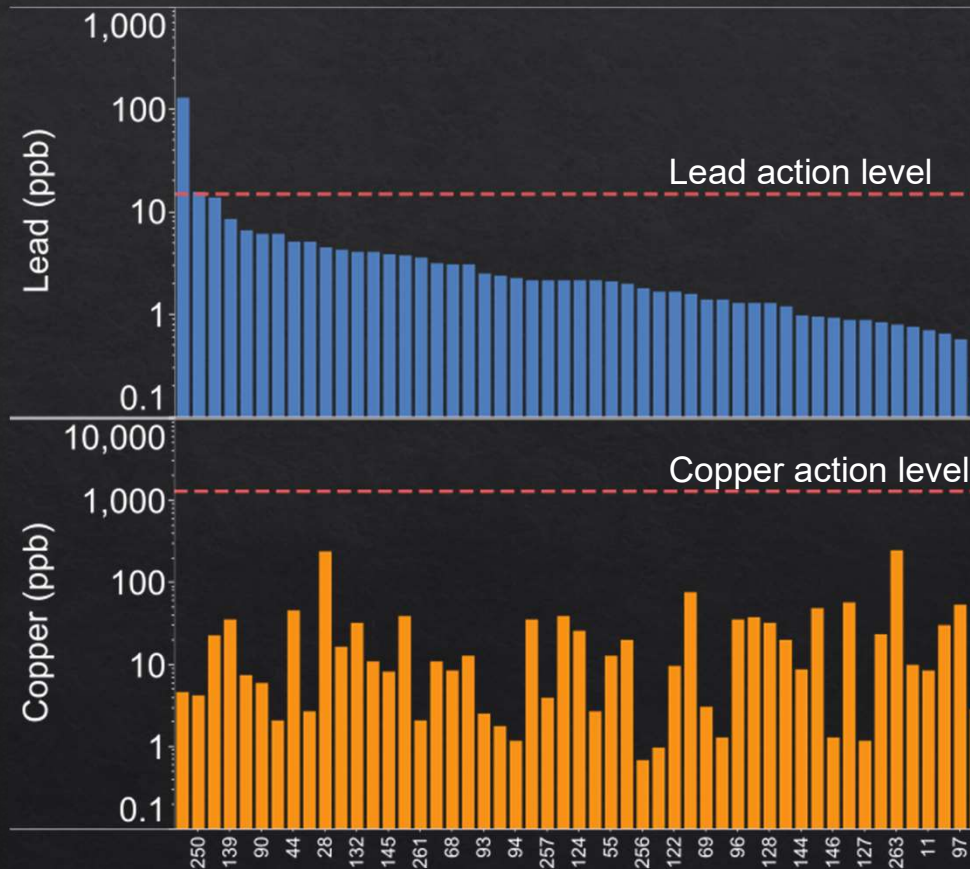
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# Milwaukee Water Works LCR 2020

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- ◇ 52 Tier 1 properties tested for lead and copper
  - ✓ Tier 1 = homes with lead service line
- ◇ Required sampling period July 1<sup>st</sup> – October 31<sup>st</sup>
  - ✓ Finished in mid-September
- ◇ Samples sent to third party certified laboratory
- ◇ Results mailed directly to property owners using DNR certified form
  - ✓ Properties with exceedances contacted within 24 hours
- ◇ LCR data certified by WQM, sent to DNR for verification, data soon to be posted online

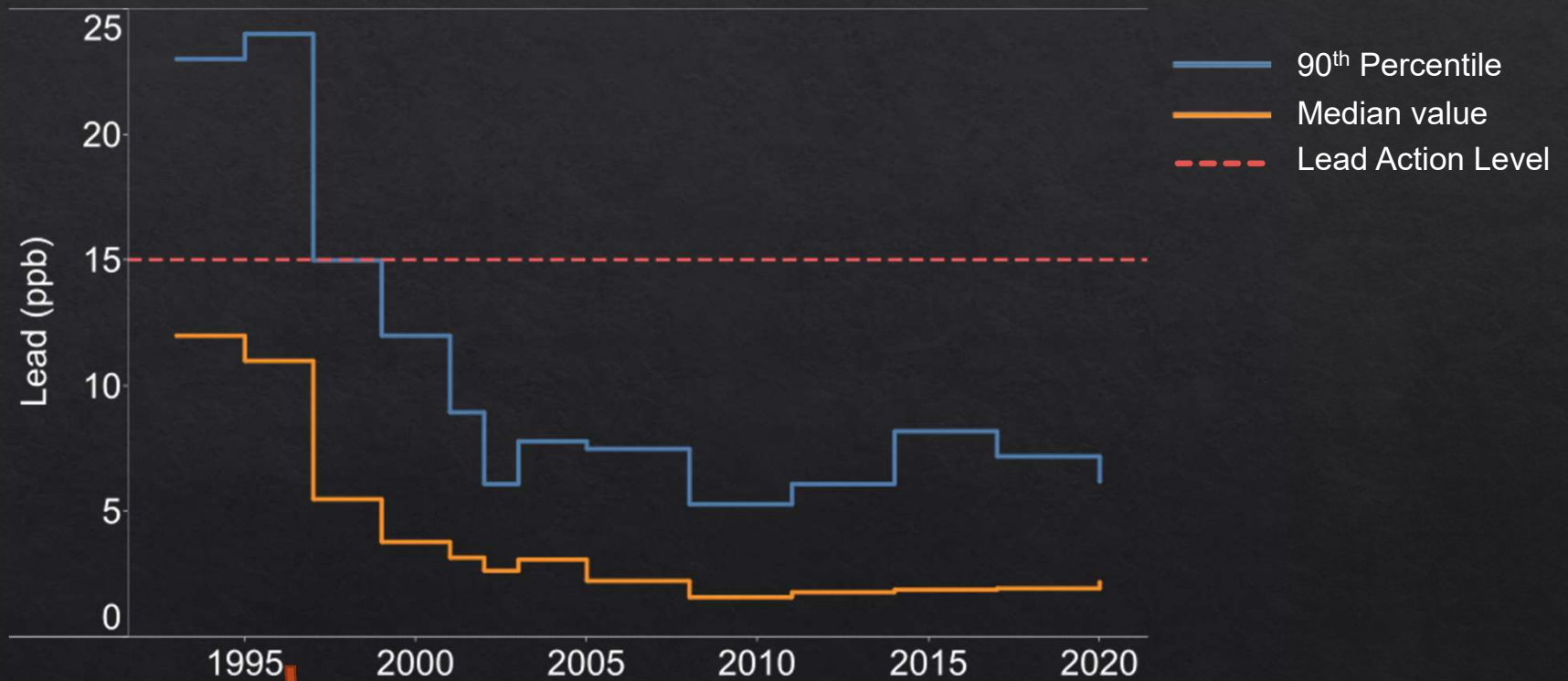
# MWW LCR 2020 results



Samples ( <i>n</i> =)	52
90 <sup>th</sup> percentile	6.2
Maximum	130
Average	5.5
Median	2.2
Exceedances	2

Samples ( <i>n</i> =)	52
90 <sup>th</sup> percentile	49.7
Maximum	250
Average	26.7
Median	10.5
Exceedances	0

# MWW LCR 1993-2020 results



Corrosion control treatment initiated in 1996

# LCR revisions

## A. Identifying areas most impacted

- ✓ Must have an updated LSL inventory
- ✓ Requires updating records regarding galvanized, unknown, and private plumbing
- ✓ Find-and-fix clause for any tap sample > 15 ppb lead

## B. Strengthening treatment requirements

- Establishes new 90<sup>th</sup> percentile trigger level at 10 ppb lead
- ✓ Requires corrosion control treatment optimization if exceeded
- ✓ Triggers additional planning, monitoring, and treatment

## C. Systematically replacing LSL

- ✓ Must establish LSLR program
- Between 10-15 ppb lead at 90<sup>th</sup> percentile, State mandates LSLR rate
- > 15 ppb lead at 90<sup>th</sup> percentile requires at least 3% LSLR

### Legend

- ✓ Fully implemented
- ✓ MWW program
- New or pending

# LCR revisions

## D. Increasing sampling reliability

- ✓ Must test homes with LSLs
- ✓ Must conduct annual water quality parameter sampling
- 5<sup>th</sup> liter to be collected instead of first draw
- ✓ Must test water 3-6 months following LSLR and provide filters for 6 months

## E. Improving risk communication

- ✓ 24 hour exceedance notification
- ✓ Public education, including health language in Consumer Confidence Report

## F. Protecting children

- Required testing at 20% of primary schools and 20% of child cares over 5 year testing cycle
- Required testing upon request from secondary school and after 5 year testing cycle

### Legend

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# Optimized corrosion control treatment update



- ◇ Pipe loop study led by 3<sup>rd</sup> party professional engineering firm
- ◇ Consists of lead service lines harvested from MWW customer properties
- ◇ Connected to treated water and fed variable ortho-phosphate levels
- ◇ Will be monitored for one year
  - ◇ Lead and copper
  - ◇ Water Quality Parameters
  - ◇ Pipe scale analysis
- ◇ Full report with recommendations

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# Customer outreach

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- ◇ Lead-safe information provided with filter pitchers
- ◇ Semi-annual insert with lead safety information in municipal service bills
- ◇ Annual mailing of lead safety information to properties begins February 1<sup>st</sup>
- ◇ Consumer Confidence Report bill insert with lead and water information
- ◇ Online public-side LSL inventory updated quarterly
- ◇ Information provided via MWW Customer Service (467 LSLR specific calls)
- ◇ Website use:
  - ◇ [city.milwaukee.gov/Water](http://city.milwaukee.gov/Water) “Lead and Water” in English and Spanish = 8,659 views
  - ◇ [city.milwaukee.gov/LeadSafeMKE.com](http://city.milwaukee.gov/LeadSafeMKE.com) = 2,826 views
  - ◇ [city.milwaukee.gov/Leadsafemke-espanol](http://city.milwaukee.gov/Leadsafemke-espanol) = 160 views
- ◇ Lead-Safe brochures, English and Spanish, available at MHD Health Centers, MPL branches, City Hall complex buildings

# Customer outreach



OUR RECORDS INDICATE THE WATER SERVICE LINE THAT CONNECTS YOUR PROPERTY TO THE WATER MAIN IN THE STREET IS MADE OF LEAD.

**Milwaukee Water Works**

Zeidler Municipal Building  
841 N. Broadway, Room 409  
Milwaukee, WI 53202

Reduce the risk of exposure to lead in drinking water from lead service lines and interior plumbing and fixtures.

Households with lead service lines whose include these at-risk persons should drink with tap water filtered with an NSF 53 certified filter:

- Children under 6, especially bottle-fed



NUESTROS RÉCORDS INDICAN QUE LA LÍNEA DE SERVICIO DE AGUA QUE CONECTA SU PROPIEDAD A LA LÍNEA PRINCIPAL DE AGUA DE LA CALLE ESTÁ HECHA DE PLOMO.

Reduzca el riesgo de exposición al plomo en el agua potable de las líneas de servicio de plomo y tubería y accesorios de plomo.

Los hogares con líneas de servicio de plomo cuyos ocupantes incluyen a personas en riesgo, dichas personas deben beber y cocinar solamente con agua del tubo filtrada por un filtro certificado NSF 53:

- Niños menores de 6 años, especialmente los infantes alimentados en botella
- Mujeres embarazadas o que podrían quedar embarazadas (edades 15-45)
- Mujeres en período de lactancia

Estos clientes podrían ser elegibles para un filtro gratis de parte del Departamento de Salud de Milwaukee.

Para todos los que tienen una línea de servicio de plomo:

- Beba y cocine solamente con agua del grifo de agua fría.
- Deje correr el agua hasta que esté fría antes de usarla para beber o cocinar.
- A menudo desatornille y lave la pantalla al final de cada grifo.
- Enjuague la tubería del hogar al final de cada día de trabajo durante el reemplazo de la tubería principal, la reconstrucción de la calle y del alcantarillado y trabajo de plomería. Los clientes afectados inmediatamente por ciertos proyectos de construcción de la Ciudad reciben un cupón de parte de Milwaukee Water Works.



**Milwaukee Water Works**



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# Thank you. Questions?

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Water Quality Data

<https://city.milwaukee.gov/water/waterquality>



Lead and Water Information

<https://city.milwaukee.gov/water/waterquality/LeadandWater>

**Milwaukee**  
**Water Works**