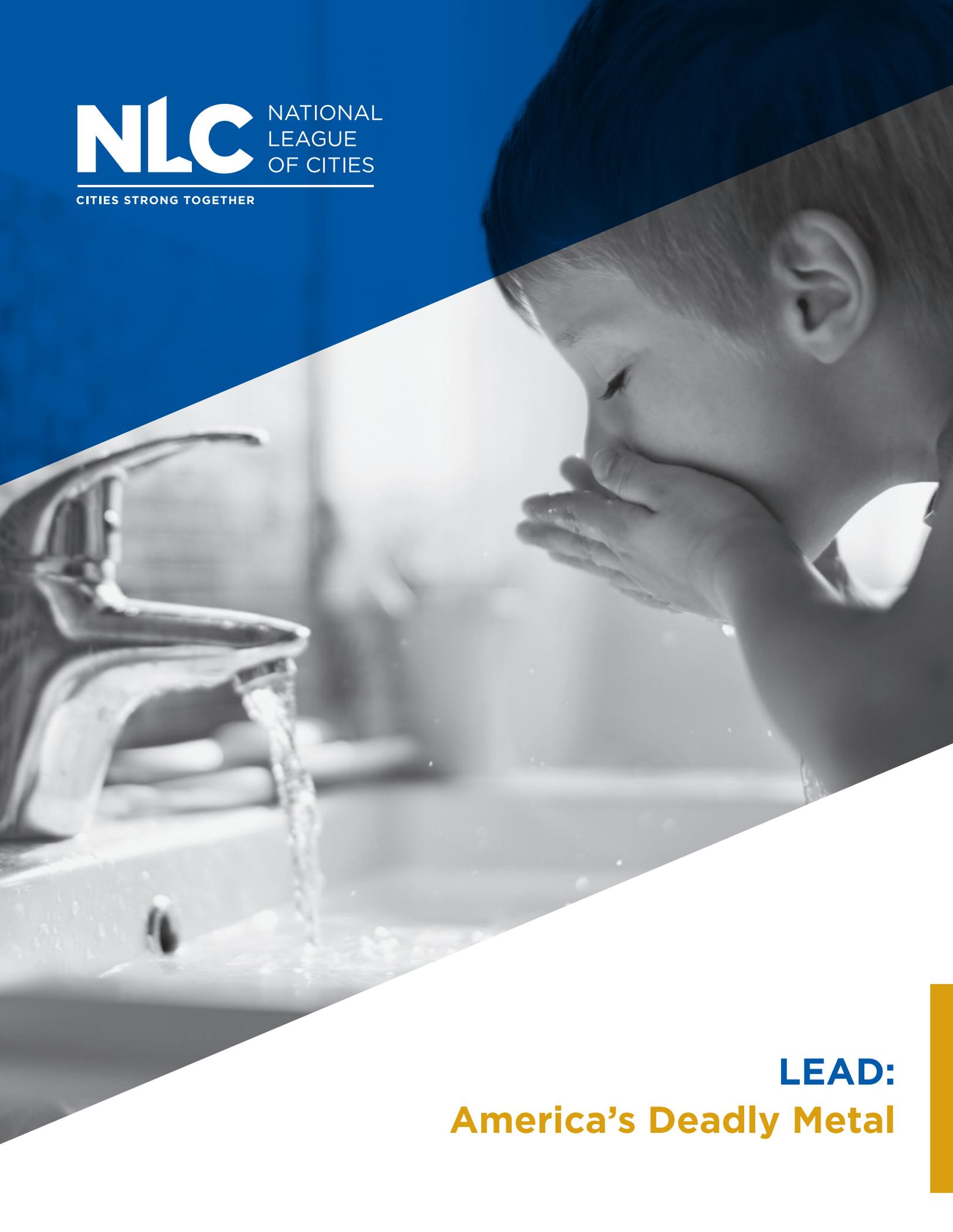


NLC NATIONAL
LEAGUE
OF CITIES

CITIES STRONG TOGETHER



LEAD:
America's Deadly Metal

INTRODUCTION

The historical use of lead in our society has resulted in numerous sources of exposure.

Lead was prominently used in a variety of products throughout history:

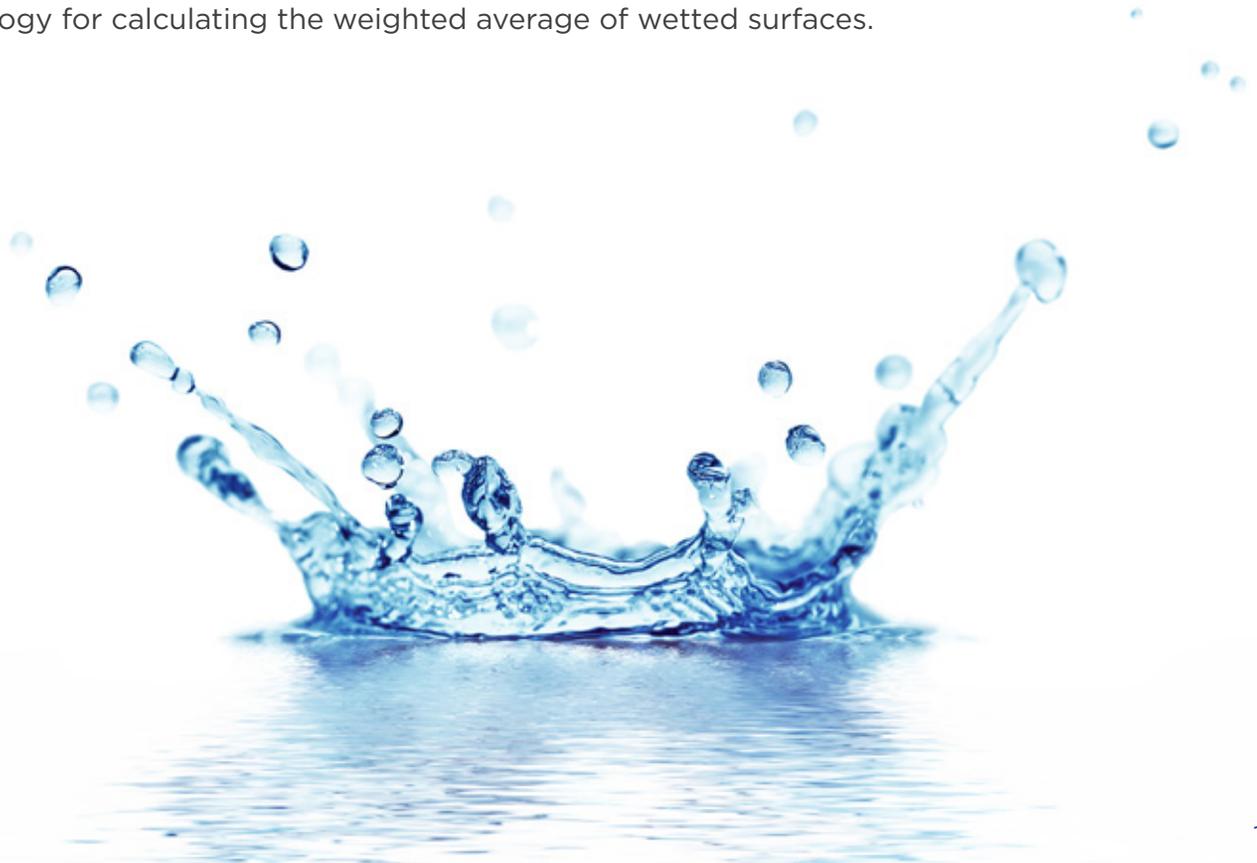
- ▲ In household paint until 1978
- ▲ In gasoline until the mid-1980s
- ▲ In lead-based solder until 1986

The Result?

Lead contamination in homes, soil, water and a threat to our environments.

WHAT HAS CHANGED

Beginning in 1986, the use of lead service lines was banned nationwide. In 1991, the Lead and Copper Rule was published and corrosion control programs were implemented. In 2014, the allowable lead content of brass plumbing fixtures was reduced from 8% to 0.25% by weight. The Safe Drinking Water Act (SDWA) Section 1417 established the definition for “lead free” as a weighted average of 0.25% lead calculated across the wetted surfaces of a pipe, pipe fitting, plumbing fitting, and fixture and 0.2% lead for solder and flux. The Act also provides a methodology for calculating the weighted average of wetted surfaces.



HOW LEAD IMPACTS OUR HEALTH

Impact on Children:

Even low levels of lead in the blood of children can result in:

- ▲ Behavior and learning problems
- ▲ Lower IQ and hyperactivity
- ▲ Slowed growth
- ▲ Hearing problems
- ▲ Anemia
- ▲ In rare cases, ingestion of lead can cause seizures, coma and even death.

Impact on Pregnant Women:

- ▲ Lead can accumulate in our bodies over time, where it is stored in bones along with calcium.
- ▲ During pregnancy, lead is released from bones as maternal calcium and is used to help form the bones of the fetus. (This is particularly true if a woman does not have enough dietary calcium.)
- ▲ Lead can also cross the placental barrier exposing the fetus to the lead and can result in serious effects to the developing fetus, including:
 - ▲ Reduced growth of the fetus
 - ▲ Premature birth

LEAD AND COPPER RULE

The Lead and Copper Rule was first published in the Federal Register on June 7, 1991 and became effective on December 7, 1992.

This rule can trigger treatment requirements when lead and/or copper in drinking water exceed the Lead Action Level (AL) of 15 ug/L (ppb).

All community and non-transient non-community water systems are required to sample for lead and copper.

Types of systems that might be included are:

- ▲ Cities
- ▲ Towns
- ▲ Manufactured Housing Communities
- ▲ Correctional Facilities
- ▲ Hospitals

Testing is required within the home and not just at treatment plants

Testing requirements can vary by state. It's important to understand the local and state requirements, as they can be more stringent than the federal regulations.

HOW DOES LEAD GET INTO THE WATER?

Water Source

Lakes, rivers, reservoirs, and wells do not usually contain action-level lead amounts, but the water can be corrosive to lead pipes.

Treatment Facility

All large systems (population greater than 50,000) must have treatment in place to control corrosivity of the water. Small and medium-sized systems must have treatment in place if the systems exceed the E.P.A. lead or copper action level.

How to Deal with Lead Contamination?

1) Reduce the Contamination

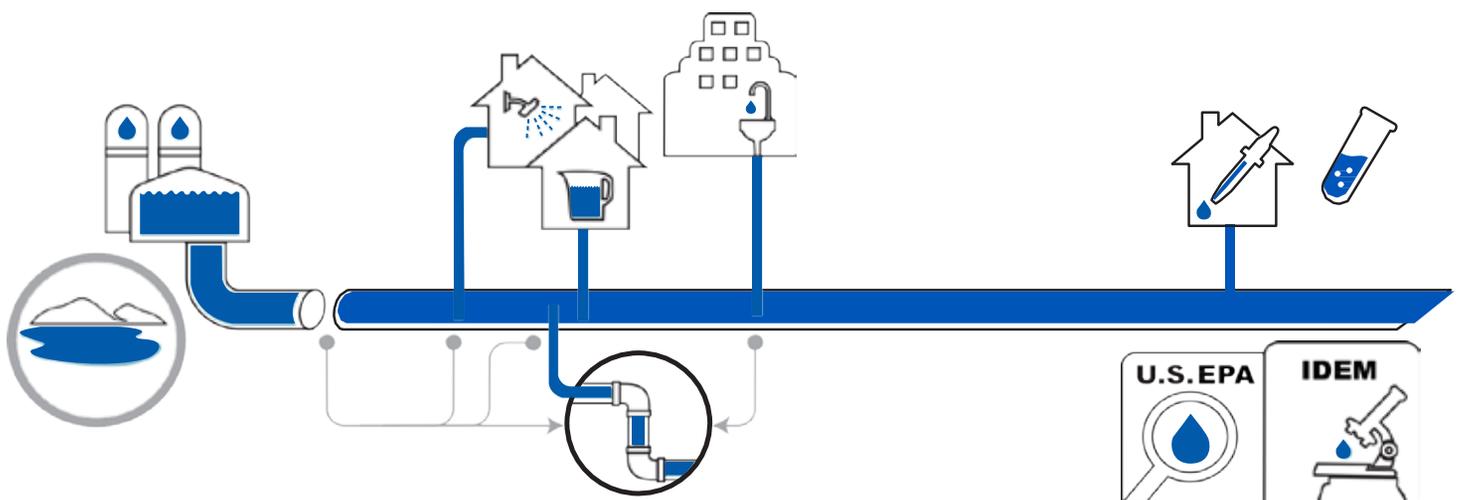
Utilities should test and treat water to control corrosivity. The most common treatment involves adding chemical phosphates to coat the inner lining of the pipes to reduce contact between the water and the lead in the pipes and plumbing. Ultimately, utilities and property owners need to work together to replace any lead service lines and household plumbing.

2) Main Lines to Home and Businesses

The main water pipes coming directly from the treatment plant do not contain lead. Some water mains have packing that connects pipes together, which may contain lead. Service line pipes (the lines running from the water main to the home) may be made of lead.

3) Testing

E.P.A. Drinking Water Rule Standards specify kitchen or bathroom cold water taps at single family residences should be tested every 3 years. If more than 10% of locations sampled have lead levels above the action level, additional action is required by the water system.



JOINT RESPONSIBILITY OF LEAD TESTING FALLS TO CITY/UTILITY AND HOMEOWNERS

When a water line breaks, the homeowner is generally responsible for the portion of the line from the house to the water meter, called the “private-side.”

The city is responsible for the portion of the line from the water meter to the water main, called the “public-side”.

When private-side service lines break, many homeowners call the city or water utility first, and then are surprised and to learn that the city can’t help solve this expensive problem.

Primary Sources of Lead include:

- ▲ Lead goosenecks on galvanized service lines
- ▲ Brass faucets and plumbing fixtures
- ▲ Lead solder on copper pipes
- ▲ Lead service lines

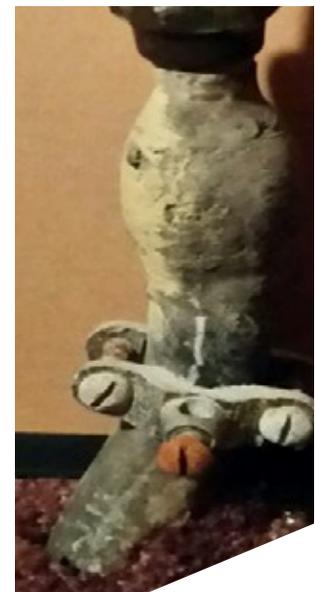
LEAD: THE NEW “FOUR LETTER WORD”

Information about lead abounds in the news and in web searches. But the information can be contradictory, such as:

Six million people receive water from systems with excessive and harmful lead levels according to the EPA. 350 of these systems provide water to schools or daycares, and 180 of them failed to inform consumers.

There are potential regulatory changes on the horizon and some uncertainty under our new administration, with some potential adjustments including:

- ▲ Change to water tap sampling requirements
- ▲ Improved water chemistry to manage corrosion control
- ▲ Active lead service line replacement programs
- ▲ Financing structures
- ▲ Improved public education and transparency



WHAT'S A PUBLIC OFFICIAL TO DO?

The American Water Works Association hosted more than 100 water utility leaders gathered in Washington, D.C. to share strategies for communicating and removing the lead service lines.

Some water utility strategies include:

▲ The Cincinnati Water Works has expanded its outreach on lead, including the addition of a new lead website, a lead hotline, social media outreach, direct letters to more than 20,000 customers, a speaker's bureau and the distribution of pitcher filters to homes thought to be at higher risk. Utility data show about 17 percent of Cincinnati's service lines that lead to homes are made of lead. It was a popular building material when early systems were constructed.

▲ Boston Water has an online database that allows homeowners to search by address to determine if their property has a lead service line. Boston Water also offers a credit of up to \$2,000 and interest-free loans to assist homeowners interested in remove the portion of lead pipe on private property.

SOLUTION

For Homeowners:

1. For those who have a plan and experience a failure, a line can be replaced if it is a lead line. We would work with the city on the pricing of the water service line program based on the projected number of lead lines in the ground.
2. Help build inventory of lead lines by sharing information back to city when a repair or replacement takes place.
3. Program comes with a revenue share component or the generation of a low-income assistance fund that can be used for other initiatives around lead (i.e. funding of lead line replacements for those in need, purchasing of lead testing kits, etc..)

For Cities/Utilities:

The NLC Service Line Warranty program can discuss ways to assist with proactive replacement of lead lines.

1. Each city will have various initiatives and varying numbers of lead service lines in the ground.
2. Funding is the key challenge and some cities are looking at loan programs and others are trying to secure grant money.

The NLC Service Line Warranty Program will help to mitigate some of the problem. We can help support additional pro-active replacement initiatives, for example:

- ▲ Presence at the call center
- ▲ Manage the contractor vetting/recruitment process
- ▲ Help to control costs of jobs
- ▲ Discuss financing options

Each city is unique. We would need to discuss how to look at additional enhancements to our core program.

