

No Excuses, NYC:

*Replace Lead Drinking
Water Pipes Now*

A Project of the **New York City Coalition to End Lead Poisoning** (NYCCELP)



The New York City Coalition to End Lead Poisoning (NYCCELP)

is a coalition of advocates, doctors, and lawyers who first came together in the 1980s to create and pass Local Law 1 of 2004 to prevent childhood lead poisoning by remediating lead paint hazards in homes. Currently, NYCCELP convenes the Lead Roundtable to advocate for legislation and regulations that will close loopholes in Local Law 1 as well as create a citywide mandatory lead service line replacement program to address public health concerns about lead in drinking water. Members include Citizens' Committee for Children of New York, Cooper Square Committee, Earthjustice, The Frankel Law Firm, Legal Aid Society, Lead Poisoning Prevention and Treatment Program at the Montefiore Medical Center (Bronx NY), NRDC, New York Lawyers for the Public Interest, New York League of Conservation Voters Education Fund, Northern Manhattan Improvement Corporation, Tenants Political Action Committee, and WE ACT for Environmental Justice.

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“Folks, this isn’t complicated. Every person in this country deserves to be able to turn on a faucet and have clean drinking water.”

Remarks by President Biden on the Administration’s Efforts to Replace Lead Pipes and Provide Clean Drinking Water for All Americans, FEBRUARY 3, 2023

LEAD IS A POISONOUS HEAVY METAL

that causes significant adverse health effects, particularly in children. It is so poisonous that experts agree that there is no safe level of lead exposure. And yet, homes across the country have lead service lines that deliver drinking water from the water main in the street to residences.

The Natural Resources Defense Council (NRDC) estimates that there are between 9.7 to 12.8 million lead service lines throughout the country; EPA has recently estimated that there are 9.2 million lead service lines in the United States.¹ New York State does not yet have a complete, reliable inventory of lead service lines, but EPA has estimated that there are at least 494,000 lead service lines in the state, putting New York State as one of the top six states with the most lead service lines.²

The most effective way to prevent lead exposure is to replace these pipes in a speedy, efficient, equitable, and transparent manner. With record amounts of federal and state money available for this purpose, the moment to act is now. A number of states and cities have stepped up to do just that, and New York City needs to hop on that line.

This report explains what a lead service line is and the public health harms that they pose, particularly to fetuses and children. It also provides information on why the federal Lead and Copper Rule alone cannot be relied on to protect individuals from lead exposure.

This report outlines the extent of the problem in New York City: how many lead service lines there are that we know of to date and where those lead service lines are located. It also high-

lights the successful lead service line replacement program that Newark, New Jersey undertook with the help of political will; the change agents who carried out that political will; and Newark's strong, local legislation—all of which can serve as models for New York City.

Finally, an obstacle facing any water supplier with the will to complete this work is the means to do so. This report identifies the federal and state funding and financing sources that New York City can access to pay for a lead service line replacement program.

For the first time, the federal government is signaling to local and state partners that it stands ready to work together to accelerate the replacement of lead pipes in the next decade.³ The public health threat is well known, and the funding and financing are available. We now need the political will, change agents, and a strong local law to meet this challenge. Simply stated, there are no excuses for missing this moment.

Lead Exposure at Any Level Presents Risk of Harm

LEAD IS A POISONOUS HEAVY METAL

that can affect almost every organ and system in the human body, often with irreversible effects. People of all ages face health risks from lead exposure, but fetuses and young children are most susceptible to the adverse effects of lead. Some key findings related to the health impacts of lead include the following:

- Lead can cross the placental barrier of a pregnant person into the womb and harm the fetus. Lead exposure can cause miscarriage and stillbirths.⁴
- Even at very low levels once considered safe, lead can cause serious, irreversible damage to the developing brains and nervous systems of fetuses, babies, and young children.⁵ Lead can decrease a child’s cognitive capacity, cause behavioral problems, and limit the ability to concentrate—all of which, in turn, affect a child’s ability to learn in school.⁶
- Even in otherwise healthy adults, lead exposure can cause adverse cardiovascular and kidney effects, cognitive dysfunction, elevated blood pressure, and infertility in both men and women.⁷

The CDC,⁸ the American Academy of Pediatrics,⁹ the World Health Organization,¹⁰ and the EPA¹¹ all state that there is no safe level of lead exposure.

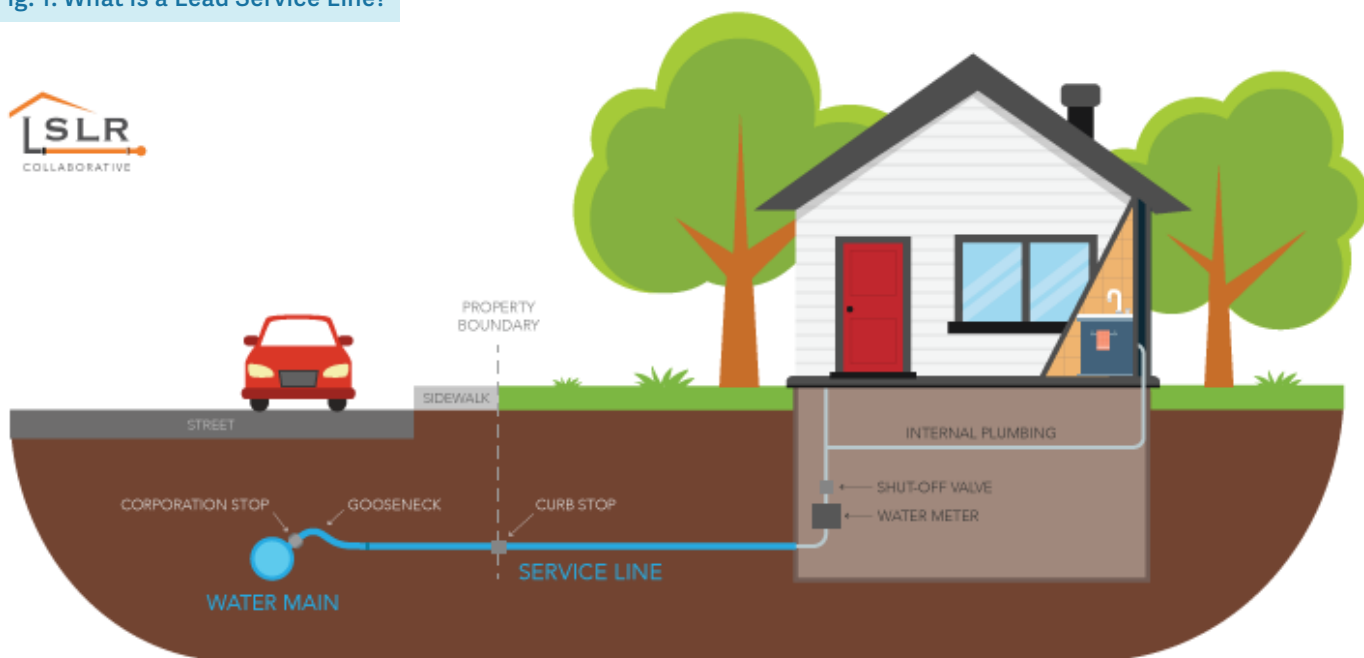
Lead Pipes Leach Lead into Drinking Water

DRINKING WATER IS ONE PATHWAY

of exposure to lead. And lead pipes were heavily marketed in the last century; the lead pipe industry ran a successful decades-long campaign dating from early in the 20th century to persuade cities, plumbers, and water utilities to use lead service lines, and many cities required, strongly encouraged, and/or explicitly approved their use.¹²

What makes lead exposure particularly dangerous in drinking water is that it is colorless, tasteless, and odorless. Lead gets into drinking water from lead pipes and plumbing that contains lead. “Lead service lines” (LSLs) are the lead pipes that connect the city water mains under the street to residences (see Fig. 1 below).

Fig. 1: What is a Lead Service Line?



Graphic courtesy of Lead Service Line Replacement Collaborative

Lead leaches from lead service lines and indoor plumbing into water when a chemical reaction known as corrosion occurs. Lead exposure from drinking water is often episodic. It can be very low or zero one day, and extremely high the next day. Often, that is because small particles of lead known as “particulate lead” flake off from the inside of the pipe and cause a major spike in lead exposure.¹³

The significance of drinking water as an exposure pathway is often underestimated. According to the CDC, lead exposure risk from drinking water will vary depending on the individual, the chemical conditions of the water, and the amount consumed. EPA modeling has shown that water can constitute 10–80% of U.S. children’s lead exposures with the highest levels for formula fed infants less than a year old.¹⁴

Despite a federal ban on lead pipes in 1986 and many states banning them even earlier, EPA does not require utilities to replace all legacy lead pipes left in the ground. Experts—including EPA—widely agree that today, the greatest contributor of lead into drinking water is lead service lines.¹⁵ Pediatricians, health advocates, state regulators, and other experts also agree that therefore removing all lead service lines nationwide is a necessary part of any health-protective drinking water standard. EPA’s National Drinking Water Advisory Council unanimously recommended that EPA require complete lead service line replacement by all water systems,¹⁶ regardless of lead testing results (discussed below), and the American Water Works Association endorsed this recommendation.¹⁷ However, EPA, in its Lead and Copper Rule (which regulates lead in drinking water), does not require water sys-

tems to completely replace lead service lines. This is part of what makes the rule completely ineffective in protecting the public from exposure to lead through water. It is therefore imperative that state and local governments take steps to protect their residents from this public health hazard.

Federal Law Has Failed to Protect Communities from Lead in Drinking Water

THE FEDERAL LEAD AND COPPER RULE

under the Safe Drinking Water Act sets forth the mechanism by which public water systems must monitor and control lead in drinking water in an effort to protect public health.¹⁸ But the Rule is not designed to, and thus does not, fully protect individuals from exposure to lead in their drinking water. As discussed in more detail below, it is also reactive and scientifically unsound, rarely requires lead service line replacement—the best available solution for reducing lead levels in drinking water—and misinforms the public.

The Federal Lead and Copper Rule Is Not Designed to Fully Protect Individuals from Exposure to Lead in Drinking Water

The Lead and Copper Rule is complex and, unlike most other federal rules, is not designed to protect the public from a dangerous contaminant. When EPA regulates a contaminant in drinking water, it first sets a maximum contaminant level goal, which is the level of the contam-

inant “at which no known or anticipated adverse effects on the health of persons occur” with “an adequate margin of safety.”¹⁹ For lead, the maximum contaminant level goal is zero because there is no safe level of lead. Once the goal is set, then most of the time EPA sets a “maximum contaminant level” (MCL). The MCL is an enforceable health-based limit designed to get as close to the maximum contaminant level goal as feasible.²⁰ Once the MCL is set, that is the maximum amount of the contaminant that can be in the water—if the amount exceeds the MCL, the water system is legally required to take immediate corrective action to lower it below the MCL. The exceedance constitutes a violation of the regulation, and a water system can be sued if it fails to lower it below the MCL.

EPA, however, chose not to set an MCL for lead in the Lead and Copper Rule. Instead, it promulgated a “treatment technique,” which is a prescribed practice or set of practices designed to prevent adverse health effects from a contaminant.²¹ A treatment technique sets out the steps that a water system must take with the intention of reducing lead levels in its water, but compliance with it *does not require that the water system reduce lead levels below a certain amount—or, in many cases, at all.*

The Lead and Copper Rule requires water systems to take the following steps:

- Take water samples from a disproportionately small number of sites (no more than 100, depending on the size of the water system) likely to have lead service lines.
- Determine whether more than 10% of the sites sampled have lead levels of 15 parts per billion (ppb) or higher (the “lead action

level”). If they do, the water system has an “action level exceedance.”

- If there is a lead action level exceedance, the water system must take corrective action, which includes corrosion control treatment,²² public education, and may include lead service line replacement.

As long as the water system takes these steps, then it is complying with the Lead and Copper Rule even if those steps do not reduce the levels of lead in the drinking water. Thus, a lead action exceedance by itself, is not a violation of the Rule, meaning a water system cannot be sued about that (unlike an MCL exceedance). A water system also is not required to replace lead service lines when fewer than 10% of samples are below 15 ppb.²³

The Federal Lead and Copper Rule Is Scientifically Unsound

The Lead and Copper Rule’s method of “measuring” lead in drinking water, and requirements for when corrective action is required, are scientifically unsound and therefore do not protect the public. The Lead and Copper Rule requires that water systems sample water from as few as five sites (for small systems) and up to 100 sites (for the largest ones),²⁴ and at least half of the samples need to be from sites that are thought to contain lead service lines.²⁵

While semi-annual or annual testing is required for some systems, many only have to test every few years, and some test only once every nine years. This limited and infrequent sampling gives only a snapshot of lead levels at that exact moment, and no further sampling is required, even though lead levels are highly variable and levels

in samples collected from the same tap may vary dramatically from one day to the next. Therefore, just because lead levels are low at a site when the sample is taken does not mean that lead levels are always low at that site.

As noted above, there is no safe level of lead in drinking water. Because water systems are not required to take systemwide corrective action unless 10% or more of sites sampled exceed 15 ppb,²⁶ this means that even if *all* the sites sampled showed lead levels at 14 ppb, no corrective action would be required. Nor would such action be required if 9% of the samples had astronomically high levels such as 1,000 ppb, but no other samples had lead levels at 15 ppb or higher. Given the 8.5 million population of New York City, this can amount to disregarding high lead levels in the water of over 750,000 New Yorkers.

Even a determination that there is no lead action level exceedance is unreliable for a number of reasons. First, the testing protocols are not designed to capture the highest levels of lead at a site, which is contrary to the intention of the Rule.²⁷ Second, it is well known that some water systems game the system with regards to sampling. For example, some samplers “flush” the water (that is, they let the faucets run) before testing, so that the lead levels will test at a lower level than if they did not flush the system.²⁸ And some water systems take samples from more sites than the minimum required, which can “dilute” the sampling pool and keep the percentage of sites testing over 15 ppb to below 10%, thus avoiding an action level exceedance.²⁹

Events in Clarksburg, West Virginia, in 2021 demonstrate that the design of the Lead and Copper Rule is ineffective for preventing lead exposure

and even lead poisoning. EPA declared an emergency in Clarksburg, West Virginia, after extremely high lead levels (over 1,000 ppb) were found in the water of homes of three lead-poisoned children.³⁰ These samples were taken outside of Lead and Copper Rule testing. Even if these samples had been taken through Lead and Copper Rule sampling, however, such high samples in those three homes would not necessarily have required the water system to take corrective action because Clarksburg was required to sample only a minimum of 30 sites. Thus, the three sites with very high lead levels would not themselves have constituted a lead action level exceedance (because 3 does not constitute more than 10 percent of the number of sites required to be tested (30)). And as mentioned before, even if additional sampling was done and the system exceeded the action level, the exceedance of the action level would not constitute a violation of the Lead and Copper Rule. That lead exposure severe enough that EPA deems it an emergency would not constitute a violation of the Lead and Copper Rule demonstrates its ineffectiveness.

Testing in Clarksburg also shows the unreliability of sampling permitted under the Lead and Copper Rule. With respect to variability, testing at one residence on three different dates over five weeks showed the following lead levels: 285.2 ppb, 30 ppb, and 2,130 ppb.³¹ With respect to how “gaming” can affect results, on one of those dates lead levels were measured before and after flushing.³² The 2,130 ppb lead level was reduced to 163.5 ppb on the same day after flushing. While these samples all exceed 15 ppb, they exemplify the enormity of variability in lead levels depending on when and how a sample is taken. Such variability in oth-

er instances can mean the difference between exceeding the action level and not doing so.

The Federal Lead and Copper Rule Does Not Require the Best Available Solution to Combat Lead in Drinking Water

As stated above, the best way to reduce lead in drinking water is to replace lead service lines. The current Lead and Copper Rule, however, does not mandate this. Even when there is a lead action level exceedance, the Lead and Copper Rule does not mandate the immediate use of the most effective corrective measures. Removing a lead service line means that the biggest source of lead is permanently removed and can no longer cause lead contamination. But that is not what the Lead and Copper Rule requires. The first step that water systems must take after a lead action level exceedance is to install or optimize corrosion control. Studies, however, have shown that lead service lines are vulnerable to fluctuations in lead concentrations in numerous ways that corrosion control cannot fix or account for. Physical disturbances, such as meter installation or replacement, service line leak repair, partial service line replacement, or significant street excavation near homes with lead service lines, can instigate spikes of lead in water.³³ Varying water use patterns between homes, seasonal variables such as water temperature, and differing types and ages of plumbing materials also contribute to potential lead exposure that cannot be ameliorated by corrosion control.³⁴

Only if water systems still exceed the lead action level with optimized corrosion control must they

begin replacing lead service lines. But given the formula for a lead action level exceedance, and loopholes that permit water systems to halt lead service line replacement after they have started, only a small number of systems are ever required to replace them.³⁵

The Federal Lead and Copper Rule Misinforms the Public

Because the Lead and Copper Rule is not an MCL, but rather a complex treatment technique, the public is often confused about the risk of exposure to lead in their drinking water when they receive information required under the Rule. Water systems regularly distribute documents to the public that indicate that they are “in compliance with” the Lead and Copper Rule and use unfamiliar terms such as “action level” and “action level exceedances.” Understandably, people often construe “compliance” as meaning they are not exposed to harmful levels of lead.³⁶ And EPA itself also does not affirmatively inform the public about the widespread nature of lead in drinking water, the shortcomings of the Lead and Copper Rule, or measures that people can take to decrease their and their family’s exposure to lead.

State and Local Governments Must Remove All Lead Service Lines to Protect Their Residents from Lead in Drinking Water

Because the Lead and Copper Rule is failing to protect people and communities from exposure to dangerous levels of lead—in particular, by failing to require the removal of lead service lines—

it is incumbent on states and localities to take steps to adequately protect their residents from this dangerous threat to their health. New York City is well positioned to take on the removal of lead service lines because, as discussed below, it has begun to inventory and map the locations of service lines.

Lead Service Lines in New York City

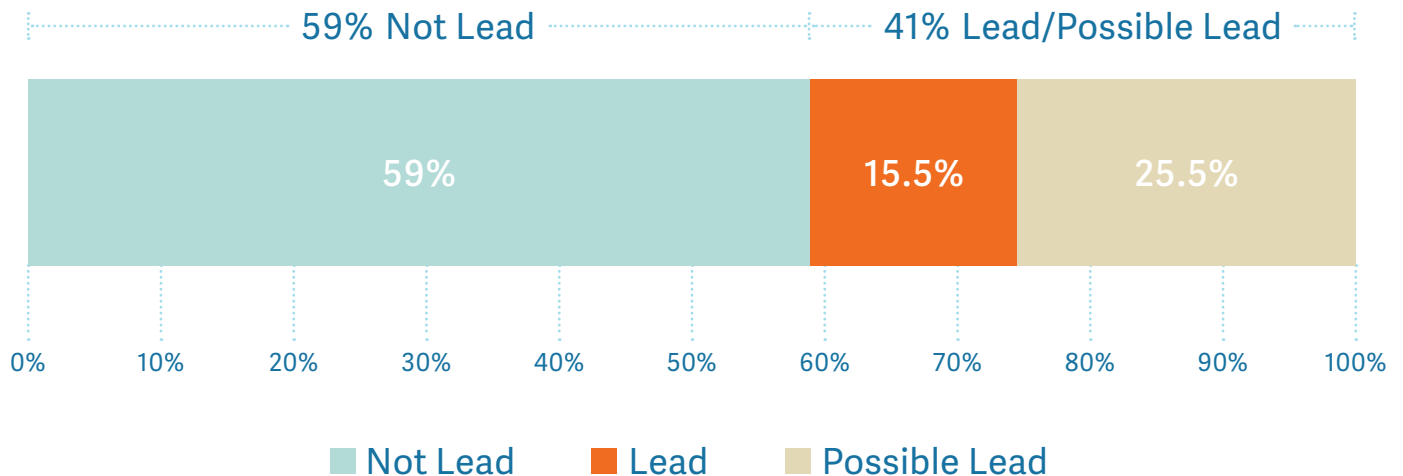
NEW YORK CITY'S DRINKING WATER comes from 18 reservoirs spread across a 2,000 square-mile watershed in upstate New York.³⁷ Every day, more than a billion gallons of fresh drinking water are delivered to 9 million residents (about half the population of New York State) at some 857,000 properties via service lines.³⁸ NYC has the largest unfiltered water supply in the United States,³⁹ and its water is delivered from the upstate reservoir system virtually lead-free.⁴⁰ In 1961, NYC banned lead service line installations and in

1987, the use of lead solder in plumbing systems.⁴¹

The water supplier for NYC is the Department of Environmental Protection (DEP), the largest of over 2,800 public water supply systems registered with the New York State Department of Health.⁴² While water suppliers maintain a record of connection to the system for all of their customers, knowing the material of any given service line is a challenge due to poor recordkeeping and repairs over the years which might not have been properly recorded.⁴³ DEP records maintain information about the material that the drinking water service line is made from.⁴⁴ However, until recently, information about how complete DEP's records were was not public knowledge.

In April 2019, the NYC Council enacted NYC Local Law 65, which requires DEP to compile an inventory of each service line and the material it was made of and to publish this information both as a data set and an online interactive map. In August 2021, the inventory and maps were released. The law also requires DEP to update the data every six months based on its "best available records."

Fig. 2: NYC Service Lines Citywide by Material



According to February 28, 2023 data from DEP,⁴⁵ here is what is known (and not known) about service lines in NYC:

- Citywide:
 - 59% of water service lines at 504,215 properties are “Not Lead”
 - 41% of water service lines at 351,870 properties are “Lead/Possible Lead” meaning that they are either “Lead”⁴⁶ as confirmed by DEP records⁴⁷ or “Possible Lead”⁴⁸ as DEP has no record or conflicting records about the material type;
 - 16% of water service lines at 132,988 properties are “Lead”
 - 26% of water service lines at 218,882 properties are “Possible Lead”

Citywide Population Estimate

When the above property addresses are matched against consumer and voter databases⁴⁹, we are able to better understand how many households and individuals are receiving water from a service line that is Lead/Possible Lead as such:

- Estimated number of Lead/Possible Lead Households: 902,974
 - Lead Households: 318,812
 - Possible Lead Households: 584,162
- Estimated number of Individuals in Lead/Possible Lead Households: 1,845,119 or 21% of the NYC population⁵⁰
 - Individuals in Lead Households: 669,218
 - Individuals in Possible Lead Households: 1,175,901

Fig. 3: Number of Estimated Lead/Possible Lead Households and Population

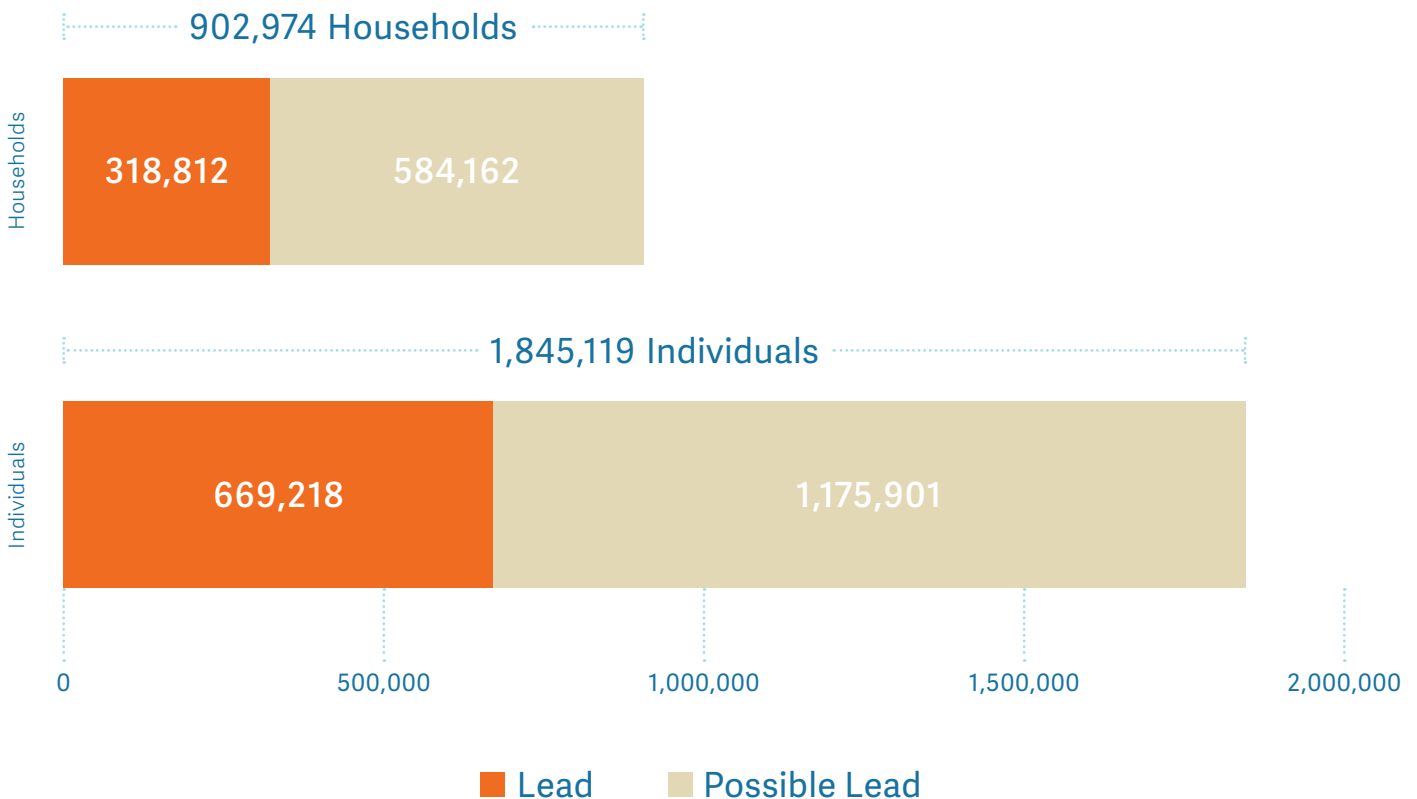


Fig. 4: Lead/Possible Lead Service Lines by Borough

In an old city like New York, it is not surprising to find the Lead/Possible LSLs all over. Compared to the citywide Lead/Potential LSL average of 42%, two boroughs are below the average—Staten Island (39%) and Queens (40%),—while three are at or above the average—Brooklyn (46%), Manhattan (44%), and the Bronx (42%).

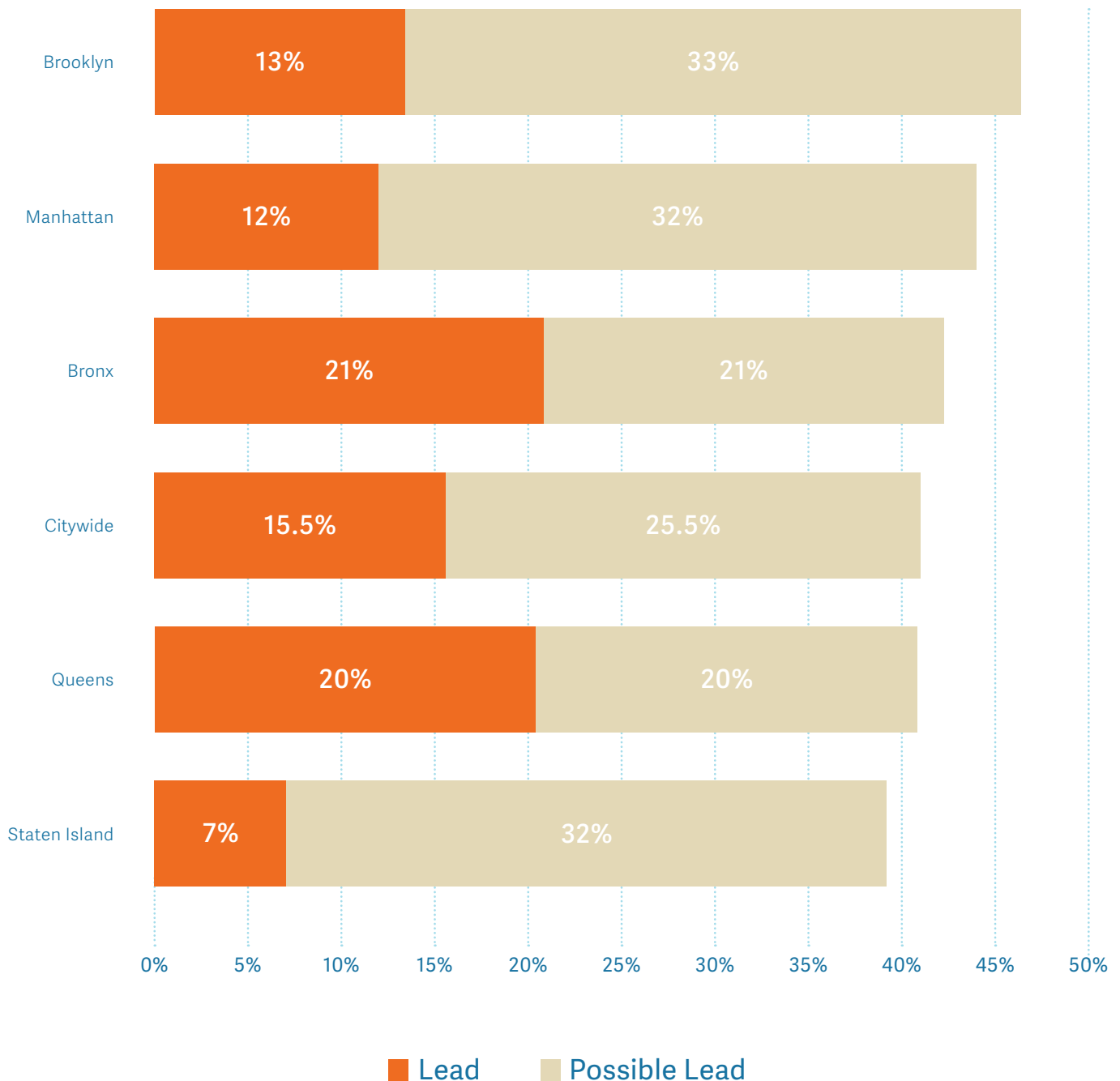


Fig. 5: Lead Service Line "Hot Spots" by Neighborhood

A closer look at the data at the Neighborhood level reveals "hot spots" within each Borough. For instance, while Staten Island may be at the bottom of the list as a Borough, a look at the neighborhood-scale data offers a different picture.

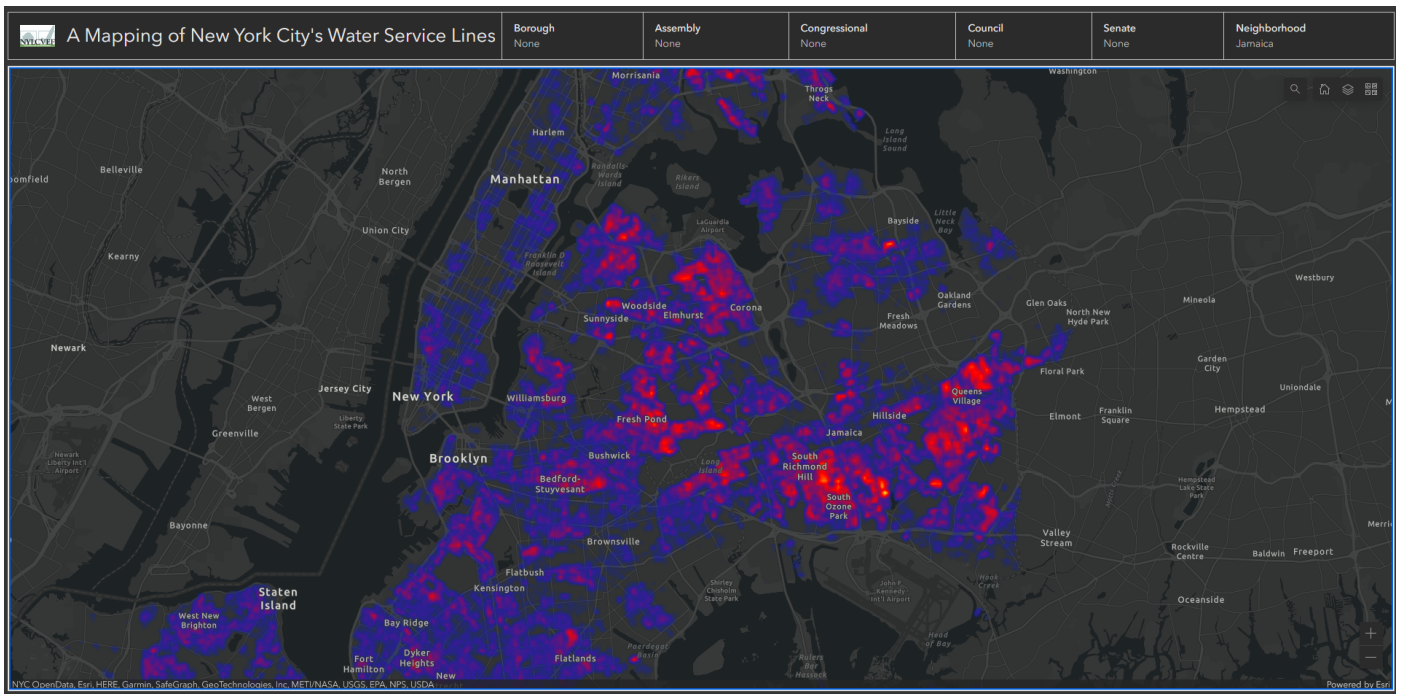


Fig. 6: Lead Service Line "Hot Spots": Jamaica

A view of the Jamaica, NY, neighborhood which shows clusters of Lead/Possible LSLs:⁵²



Fig. 7: DEP Service Line by Neighborhood

NYC Neighborhoods⁵¹

The following table shows the DEP service line data broken down by Neighborhood. Port Richmond in Staten Island has the highest rate (60.67%) in the entire city while Fresh Meadows in Queens has the lowest rate (20.56%)

RANK	BOROUGH	COMMUNITY	LEAD / POSSIBLE LEAD %	LEAD / POSSIBLE LEAD PROPERTIES
1	Staten Island	Port Richmond	60.67%	9,838
2	Manhattan	East Harlem	52.60%	1,608
3	Brooklyn	Coney Island - Sheepshead Bay	51.53%	17,111
4	Queens	Jamaica	46.30%	22,774
5	Staten Island	Willowbrook	45.70%	9,500
6	Bronx	Hunts Point - Mott Haven	45.65%	3,351
7	Brooklyn	Borough Park	45.58%	15,183
8	Bronx	Crotona - Tremont	45.52%	3,646
9	Manhattan	Greenwich Village - Soho	45.26%	2,140
10	Brooklyn	East Flatbush - Flatbush	45.15%	13,202
11	Bronx	Kingsbridge - Riverdale	45.13%	2,225
12	Manhattan	Union Square - Lower East Side	44.97%	2,195
13	Queens	Ridgewood - Forest Hills	44.91%	15,027
14	Brooklyn	Canarsie - Flatlands	44.40%	15,198
15	Brooklyn	Sunset Park	44.14%	5,208
16	Bronx	Pelham - Throgs Neck	44.09%	13,732
17	Brooklyn	Williamsburg - Bushwick	43.98%	8,207
18	Brooklyn	Bedford Stuyvesant - Crown Heights	43.61%	13,159
19	Brooklyn	Greenpoint	43.00%	5,273

RANK	BOROUGH	COMMUNITY	LEAD / POSSIBLE LEAD %	LEAD / POSSIBLE LEAD PROPERTIES
20	Manhattan	Chelsea - Clinton	42.99%	2,506
21	Brooklyn	Downtown - Heights - Slope	42.87%	10,503
22	Bronx	High Bridge - Morrisania	42.86%	2,453
23	Manhattan	Central Harlem - Morningside Heights	42.83%	2,146
24	Manhattan	Upper East Side	42.64%	2,335
25	Brooklyn	East New York	42.53%	9,789
26	Manhattan	Lower Manhattan	42.36%	355
27	Brooklyn	Bensonhurst - Bay Ridge	41.99%	11,074
28	Queens	Long Island City - Astoria	41.61%	8,787
29	Queens	Southwest Queens	41.50%	18,886
30	Manhattan	Gramercy Park - Murray Hill	40.64%	1,403
31	Queens	West Queens	40.23%	17,761
32	Staten Island	Stapleton - St. George	39.89%	11,227
33	Queens	Southeast Queens	37.98%	17,116
34	Manhattan	Washington Heights - Inwood	37.25%	1,649
35	Manhattan	Upper West Side	37.21%	1,723
36	Brooklyn	Rockaway	36.37%	5,461
37	Bronx	Fordham - Bronx Park	34.15%	3,093
38	Queens	Flushing - Clearview	33.71%	12,845
39	Bronx	Northeast Bronx	33.46%	7,915
40	Staten Island	South Beach - Tottenville	28.02%	16,599
41	Queens	Bayside - Little Neck	25.99%	4,659
42	Queens	Fresh Meadows	20.56%	3,008
			GRAND TOTAL	351,870

Fig. 8: Neighborhoods with a High % of Lead/Possible LSLs and Elevated Blood Lead Levels (BLLs)

RANK	TOP 10 NEIGHBORHOODS (LEAD/POSSIBLE LSL'S)	TOP 10 NEIGHBORHOODS (BLL'S)
1	Port Richmond	Greenpoint
2	East Harlem	Borough Park
3	Coney Island - Sheepshead Bay	East Flatbush - Flatbush
4	Jamaica	Coney Island - Sheepshead Bay
5	Willowbrook	Williamsburg - Bushwick
6	Hunts Point - Mott Haven	Southwestern Queens
7	Borough Park	Fordham - Bronx Pk
8	Crotona - Tremont	Bensonhurst - Bay Ridge
9	Greenwich Village - Soho	Jamaica
10	East Flatbush - Flatbush	Southeast Queens

The only way to know if someone has been poisoned by lead is by a blood test. Almost half of the neighborhoods with the highest percentage of Lead/Possible LSLs are also neighborhoods with the highest percentage of elevated blood lead levels (BLLs) for children under the age of six, according to the latest data from the NYC Environmental and Health Data Portal.⁵³

Often, children who live in older homes may get multiple sources of exposure including from lead paint, lead soil, and lead in tap water. While it is not possible to link any one source of exposure to poisoning, the prevalence of lead service lines in neighborhoods where there are also high elevated blood levels in children merits a closer look by DEP and the NYC Department of Health.

Thanks to the work of the City Council, NYC is ahead of all other water suppliers in the state of New York as it already has an inventory and map. What New York City needs now is a plan to systematically ensure that all lead service lines are replaced quickly, wisely, efficiently, equitably, affordably, and transparently and to confirm if there is lead present in the sites currently classified as Possible LSLs. NYC has an opportunity to lead other large water systems in lead service line removal. For inspiration on how to craft its program, it need only look across the Hudson River to the city of Newark, New Jersey, which achieved amazing results in a brief period of time.

Fig. 9: DEP Service Line by NYC Council District

NYC Council Districts:

The following table shows the DEP service line data broken down by NYC Council district. Council District 48 has the highest rate in the city (52.61%) while Council District 51 has the lowest (25.74%).

COUNCIL DISTRICT	COUNCILMEMBER	LEAD / POSSIBLE LEAD %	LEAD / POSSIBLE LEAD PROPERTIES
48	Inna Vernikov	52.61%	9,441
49	Kamillah Hanks	52.21%	17,260
28	Adrienne E. Adams	49.09%	14,637
8	Diana Ayala	48.62%	2,616
46	Mercedes Narcisse	47.57%	15,498
27	Nantasha Williams	47.42%	16,392
44	Kalman Yeger	46.26%	8,187
18	Amanda Farías	45.79%	5,104
45	Farah N. Louis	45.59%	9,776
34	Jennifer Gutiérrez	45.56%	6,598
35	Crystal Hudson	45.34%	5,420
3	Erik Bottcher	45.27%	3,265
2	Carlina Rivera	45.15%	2,039
38	Alexa Avilés	44.88%	7,244
17	Rafael Salamanca Jr.	44.85%	3,872
37	Sandy Nurse	44.82%	8,111
36	Chi Ossé	44.63%	7,076
9	Kristin Richardson Jordan	44.56%	2,490
21	Francisco Moya	44.49%	5,839
11	Eric Dinowitz	44.38%	3,992
43	Justin Brannan	44.31%	10,335
15	Oswald Feliz	44.24%	3,207
30	Robert F. Holden	44.16%	13,985

COUNCIL DISTRICT	COUNCILMEMBER	LEAD / POSSIBLE LEAD %	LEAD / POSSIBLE LEAD PROPERTIES
1	Christopher Marte	43.97%	2,198
5	Julie Menin	43.86%	1,361
41	Darlene Mealy	43.74%	6,130
39	Shahana Hanif	42.42%	8,417
47	Ari Kagan	41.88%	7,854
16	Althea Stevens	41.79%	1,662
33	Lincoln Restler	41.62%	5,786
26	Julie Won	41.13%	5,405
25	Shekar Krishnan	40.90%	4,415
13	Marjorie Velázquez	40.70%	9,852
42	Charles Barron	40.48%	6,256
40	Rita Joseph	40.07%	3,544
50	David Carr	39.99%	17,949
14	Pierina Ana Sanchez	39.90%	1,650
29	Lynn Schulman	39.19%	5,642
4	Keith Powers	39.09%	2,158
7	Shaun Abreu	38.26%	1,163
22	Tiffany Cabán	37.94%	6,797
10	Carmen De La Rosa	36.79%	916
6	Gale A. Brewer	36.17%	1,378
32	Joann Ariola	36.02%	10,384
31	Selvena N. Brooks-Powers	34.25%	9,399
19	Vickie Paladino	33.52%	12,021
20	Sandra Ung	33.44%	5,439
23	Linda Lee	33.02%	9,257
12	Kevin C. Riley	30.53%	5,553
24	James F. Gennaro	26.34%	4,945
51	Joseph C. Borelli	25.74%	11,955
GRAND TOTAL		41%	351,870

Case Study: Newark NJ Removed All Lead Service Lines in Less Than Three Years

THE RESULTS THAT WERE ULTIMATELY achieved by a lead service line replacement program in Newark, New Jersey, warrant considering Newark's approach as a model for other water systems. After initially denying that it had a lead problem, resisting calls for prompt action, and fighting a lawsuit that NRDC filed on behalf of local schoolteachers, Newark replaced all 23,000 of its known lead service lines. And it replaced the lead service lines with speed—in under three years.

To get there, in 2019, the city adopted an ordinance that mandated the replacement of lead service lines and provided full funding for the construction.⁵⁴ These provisions led to a very successful program for *all* residents that did not get bogged down in debates about ownership and funding.⁵⁵⁵⁶ Some of the provisions of that ordinance are discussed below.

Mandating Lead Service Line Replacements

Newark's lead service line replacement program was simple and straightforward. It required all property owners to replace lead service lines on their property. They could do that by either: (1) hiring a contractor to do the work at the property owner's expense; or (2) taking advantage of the City's replacement program that paid for the replacement of the entire service line, including

the portion located on private property. Newark's mandatory program led to replacements of all of its lead service lines with speed and efficiency.

The Newark ordinance contained additional provisions that ensured the program's success. One was to allow occupants, not just the property owner, to grant consent to the service line replacement.⁵⁷ Like NYC, Newark has a high percentage of rental housing stock and many absentee landlords could have stymied effective outreach and ultimately failed to give consent. Giving occupants of rental units the ability to consent to the work gave them the power to protect their health and ensured success of the program.

Another provision required a property owner to provide a Certificate of Occupancy or Certificate of Code Compliance that includes the service line replacement when selling or transferring ownership of the structure. This simple measure further helped to ensure the success of the program—lack of the documentation could hold up a sale.

Key Provisions of an Effective Lead Service Line Replacement Ordinance

AS DISCUSSED ABOVE, NEWARK, New Jersey recently replaced all of its lead service lines in just under three years. Key to this speedy success was the city's adoption of an ordinance that mandated the replacement of all lead service lines.⁵⁸

Because it was so effective and successful, the Newark ordinance serves as a model for other municipalities,⁵⁹ such as New York City, and contains several key provisions that New York City should include in such an ordinance of its own:

- A prohibition of lead or galvanized service lines or connectors made of lead, making it clear the priority to remove this public health threat.
- A requirement that all property owners replace their lead service lines by a certain date and with a yearly timetable. Property owners can do that by either (1) hiring a contractor to do the work (at the property owner's expense) or (2) taking advantage of the city's replacement program, under which the city covers the full cost.
- A provision for full funding by the municipality, from one or more funding sources (see the discussion of funding sources in this report).
- A provision that occupants of a residence can consent to the work rather than only the property owner.
- A requirement that a property owner, upon the transfer of a property, demonstrate that the lead service line was replaced in order to receive a Certificate of Occupancy or a Certificate of Compliance, or that the property owner applied for the water utility to replace it, and the replacement has not yet been completed.

Communities that adopt an ordinance with these simple provisions can be as successful as Newark in replacing all of their lead service lines.

Lead Service Line Programs That Fail

Voluntary Lead Service Line Replacement Programs and a Focus on "Ownership" of Lead Service Lines Do Not Protect the Public Health

Unlike Newark, most water systems do not mandate the replacement of lead service lines, and instead have voluntary lead service line replacement programs. Voluntary programs, however, are inefficient and do not address the imperative that *all* lead service lines need to be replaced. In other words, they don't solve the problem.

And some water systems' voluntary programs are set up where residents apply for the replacement but have to pay for replacing the portion of the service line under the residents' private property. Many water systems justify this cost sharing by claiming that the city "owns" only the part of the line that runs from the street to the curb or to the property line and that the remaining line from the curb to the house belongs to the property owner.

This "ownership" claim may not have any legal basis. Moreover, low-income residents will not be able to afford the replacement—which often costs thousands of dollars per service line—and most landlords are unlikely to pay for it. This will perpetuate a two-tiered system: people with more means will be able to remove the threat that lead service lines present, while people with less means will not, a scenario that disproportionately impacts people of color.⁶⁰

Fig. 10: Service Line Location by Material

LOCATED UNDER PRIVATE PROPERTY	
MATERIAL	# OF SERVICE LINES
Non-Applicable	680
Lead	132,826
Possible Lead	209,779
Not Lead	499,393
TOTAL	842,678

LOCATED UNDER CITY PROPERTY	
MATERIAL	# OF SERVICE LINES
Non-Applicable	771
Lead	162
Possible Lead	9103
Not Lead	4,822
TOTAL	14,858

New York City is no exception. New York City does not claim responsibility for the vast majority of lead service lines. Per the [DEP LSL FAQ](#) site, “Water service lines in New York City are owned by the individual property owners, from the water main in the street to the meter in the home.”⁶¹ This means that of the potential lead service lines identified in its [2023 inventory](#), which the NYC Council required DEP to compile, DEP asserts that it is only obligated to replace the LSLs on city-owned properties. That’s 9,265 Lead or Possible LSLs, or a mere 2.6%, and not any of the other (at least) 351,870, or 97.4% of the remaining potential lead service lines. DEP, however, has failed to provide any basis for this assertion, despite advocates’ repeated requests for that information.⁶²

The ownership theory is a distraction and an unnecessary impediment to addressing the compelling public health threat that lead service lines present. Water systems usually at least control the full service line from the water main in a street to an individual house

and sometimes (as in Chicago), the use of lead in service lines was mandated. The need to replace lead service lines—the biggest contributor to lead in drinking water—is now a public health imperative.

Partial Lead Service Line Replacement

Replacing only part of a lead service line—the part that a city claims it owns—is not a step forward in reducing lead in drinking water. Indeed, partial replacement can increase the amount of lead that gets into drinking water. The replacement construction process can dislodge the lead in the part that is not replaced, sending even more lead into drinking water. Additionally, if the remaining lead pipe is fused together with another metal, such as copper, the two different metals can spur a chemical reaction called galvanic corrosion, which can cause further corrosion to the pipe, increasing the risk of lead-contaminated drinking water.⁶³ EPA’s Science Advisory Board

found that partial lead service line replacements “have not been shown to reliably reduce drinking water lead levels in the short term . . . [and are] frequently associated with short-term elevated drinking water lead levels . . . suggesting the potential for harm, rather than benefit during that time period.”⁶⁴

Replacing an entire lead service line is not only more protective of public health and more efficient, but it also allows for the use of federal funds. Because of the downsides of partial replacement, [EPA’s guidance](#) for using federal funding provided by the Infrastructure Investment and Jobs Act (IIJA) and the Treasury Department’s [rules](#) for using American Rescue Plan Act funding (both of which are discussed in more detail below) prohibit funding partial lead service line replacements. Congress also prohibited partial lead service line replacements from being funded under the [EPA grant program](#) for reducing lead in drinking water. Even the Trump administration’s otherwise flawed revisions to the Lead and Copper Rule did not allow a partial lead service line replacement to “count” as a replacement if a utility was required to replace lead service lines after a lead action level exceedance.⁶⁵

The Economics of Lead Service Line Replacement

Cost of Replacing Lead Service Lines

We expect the cost of replacing lead service lines in New York City to be no more than \$10,000 per LSL and very likely \$8,800 per LSL

based on New York City’s recent experience. NYC DEP recently replaced approximately 600 lead service lines in Brooklyn, Queens, the Bronx, and Staten Island through a pilot program for low-income homeowners funded by the State’s Clean Water Infrastructure fund.⁶⁶ DEP received \$5.3 million for this project, which means that the average cost of each replacement was approximately \$8,800. This cost, however, is higher than EPA or industry average cost estimates; EPA says the average cost of full lead service line replacement is \$4,700,⁶⁷ while the American Water Works Association estimates the average cost of planned full lead service line replacement at \$5,204,⁶⁸ and the NYSDOH⁶⁹ and Newark⁷⁰ estimate the cost at between \$5,000 and \$10,000. Based on our estimate, the cost to replace New York City’s known lead service lines will be at least \$1.35 billion, and the cost will be higher depending on how many Possible LSLs are discovered.

Achieving Economies of Scale

A mandatory replacement program can reduce the costs for lead service line replacements through economies of scale. Contractors can be assured of a certain number of replacements, and proceed neighborhood-by-neighborhood, block-by-block, promoting the efficient placement of personnel and equipment. These results will permit contractors to charge less for the replacement of each service line. One reason why NYC’s estimated cost to replace lead service lines may be high is that it apparently has used a hopscotch approach of replacing individual

service lines one-by-one rather than the more efficient and cost-effective method of planning and deploying equipment and personnel to replace all the lead service lines on entire streets and neighborhoods simultaneously.

Multiple Sources of Funding Available for Lead Service Line Replacements

Multiple federal, state, and local funding mechanisms are available to help pay for lead service line replacements. Some of the federal, state, and local programs are discussed briefly below and are set out more fully in Appendix A of this report.

Federal Funding Sources

Chief among the federal funding sources is \$15 billion in the federal Bipartisan Infrastructure Law, known formally as the Infrastructure Investment and Jobs Act (IIJA), enacted in November 2021.⁷¹ This is the largest amount of funding ever from the federal government devoted specifically to address the public health problem of replacing lead service lines, making **now** the time for state and local governments to act. This funding is available to states as grants and low-cost loans. New York State is slated to receive at least \$113.7 million of these federal IIJA funds in this first year of the program; that funding is likely to hold for each of the next four years of the program, for a total amount of \$568 million over five years.⁷² The NYS Environmental Facilities Corporation receives these funds from EPA and, following an application and review process, distributes them to water systems through the Drinking

Water State Revolving Fund.

Some other key federal funding sources for lead service line replacements include annual Drinking Water State Revolving Funds; Water Infrastructure Finance & Innovation Act; Water Infrastructure Improvements for the Nation Act; HUD Community Development Block Grants; and American Rescue Plan Act (ARPA).⁷³

State Funding Sources

New York State funding sources available for lead service line replacements include the Drinking Water State Revolving Fund; the Clean Water Infrastructure Act; and the 2022 Clean Water, Clean Air, and Green Jobs Environmental Bond Act.

Local Financing and Funding Sources

Local sources of financing and funding for NYC include direct appropriations from the New York City Council; the issuance of New York City municipal bonds,⁷⁴ and water rates.

Water rates (water fees paid by the utility customers) can likely be used to pay for lead service line replacement in NYC. Indeed, the New York Court of Appeals, the highest court in the state, recently upheld the broad authority of the New York City Water Board and the New York City Department of Environmental Protection to set water rates and determine what they will be used for. The Court clarified that water rates may be determined “in accordance with public policy goals” instead of or along with economic goals.⁷⁵

As this report demonstrates, greatly reducing the amount of lead in drinking water is an important public health policy goal. And

implementing a lead service line replacement program designed to accomplish complete lead service line replacement right now would also serve economic goals. A significant portion of the cost could be funded through the one-time IIJA federal funding offered now, and a lot of the cost could be offset through achieving economies of scale, as explained above.⁷⁶

LSL Replacements as Capital Improvement Expenses

Water utilities like New York City's Department of Environmental Protection can, and should, include lead service line replacements in their capital improvement plans, just as they do with water main replacements and other drinking water infrastructure projects. This is not a separate funding source (the funding sources are set forth above), but rather represents a paradigm shift for current drinking water infrastructure prioritization. Water utilities generally do not include lead service line replacements in their capital improvement plans, thus often leading to the complaint that there is no adequate funding for those projects. Including lead service line replacements in capital improvement plans demonstrates that water utilities are committed to that work and will fund it in one or more ways set out above. Removing sources of lead from our drinking water is paramount for public health and should be an utmost priority in asset management planning.

Conclusion

WE KNOW LEAD IS A POISONOUS

heavy metal that can cause significant public health effects, and there is no level at which exposure to lead is safe. Ingesting drinking water is a significant pathway of lead exposure; lead can get into drinking water when it leaches from lead service lines.

We are asking the New York City Council to follow the lead from Newark, New Jersey, and pass a local law mandating the replacement of all lead service lines in the city within ten years, at little or no expense to New Yorkers. (Model ordinance is attached as Appendix B).

We know what the problem is, what the solution is, and that funding is available to solve it. We just need the political will to get this job done.

Federal Funding¹

- **Bipartisan Infrastructure Law (BIL) (also known as the Infrastructure Investment & Jobs Act (IIJA))**, enacted in November 2021 \$15 billion to the States for lead service line replacements.
 - Drinking Water State Revolving Fund (DWSRF) General Supplemental - \$11.7 billion for drinking water infrastructure, including lead service line replacements: [combined_srf-implementation-memo_final_03.2022.pdf](#) (epa.gov), pp. 10, 30-35.
 - Funds are distributed to the states by USEPA.
 - NYS will distribute the funds through its DWSRF program.
 - NYS is slated to receive \$113.7 million in this first year of the BIL 5-year funding. We expect this amount to be awarded each of the four following years of the BIL funding for lead service line replacement, for a total of \$568.5 million.
 - 49% of the \$15 billion in BIL funding for lead service line replacements is required to be distributed as principal forgiveness or grants to “Disadvantaged Communities” (as that term is defined by the state). (This requirement does not apply to the \$11.7 billion for the general Drinking Water SRF.)
- **American Rescue Plan Act (ARPA)** funding is explicitly available for full lead service line replacements under January 2022 Treasury Dep’t Rules. 87 Fed. Reg. 4338, 4372 (January 27, 2022) (authorizing full lead service line (LSL) replacement and prohibiting use of ARPA funding for partial replacements) - [govinfo.gov/content/pkg/FR-2022-01-27/pdf/2022-00292.pdf](https://www.govinfo.gov/content/pkg/FR-2022-01-27/pdf/2022-00292.pdf)
 - Most states have significant ARPA funds that are still unspent.
 - See NYS tracker of these funds: [covid-19-relief-program-tracker-10-31-22.xlsx \(live.com\)](#).
 - Localities may also have unspent ARPA funding.
- **Water Infrastructure Finance & Innovation Act (WIFIA) (EPA)**. WIFIA is a tool to enable EPA to increase water infrastructure investments by leveraging public and private sources of funds to maximize the reach of federal funds. As of February 2022, the WIFIA program has issued 72 loans totaling \$13.3 billion in credit assistance to help finance nearly \$28 billion for water infrastructure projects. The FY 2023 request for the WIFIA program would enable EPA to provide up to \$8 billion in direct credit assistance.
- **Water Infrastructure Improvements for the Nation (WIIN) Act (EPA)**, created 2 programs that can help communities pay for LSL replacement:
 - An EPA grant program to remove lead service lines for disadvantaged property owners and communities (codified as [section 1459B](#) of the Safe Drinking Water Act). Funded through annual EPA appropriations. (\$40 million in 2021; President’s FY23 budget proposed \$182 million)
 - An EPA grant program for small, underserved and disadvantaged communities to address water infrastructure needs (codified as [section 1459A](#) of the Safe Drinking Water

Act). (\$45 million in 2021; President's FY23 budget proposed \$80 million)

- **Annual appropriations to various federal agencies**

- EPA has annual (base) Drinking Water State Revolving Fund (SRF) funding it provides to states that can be used for lead service line replacements. Recently about \$1.1 billion/year. Most are loans, though lately 14% to 35% available for grants/principal forgiveness for some systems.
- As noted above, to implement the WIIN Act, EPA also gets a small annual appropriation for federal direct grants to disadvantaged communities for lead service line replacements under Safe Drinking Water Act section 1459B and for water infrastructure for small and disadvantaged communities under SDWA section 1459A.
- USDA's Rural Utility Service gets hundreds of millions per year for small and rural water systems that can be used for lead service line replacements.
- HUD Community Development Block Grants (CDBG) program provides communities with funds to address a wide range of community development needs. The CDBG program provides annual grants (about \$3.3 billion in 2022) on a formula basis to local governments and States.

New York State Funding

- **Drinking Water State Revolving Fund** (DWSRF) (Environmental Facilities Corporation (EFC))

- In addition to the BIL funds specifically

for lead service line replacement, the DWSRF provides a general pot of money for drinking water projects that NYS should allow for lead service line replacements. We expect to follow up with NYS officials to allow this additional funding from the base DWSRF grant.

- A portion of these funds are made available as grants, principal forgiveness, and/or negative interest loans. The remainder of the funding is provided as below market-rate loans.
- Details on funding availability and terms are provided in annual Intended Use Plans issued by EFC.
- **Clean Water Infrastructure Act** (CWIA)
 - 2017-2022 - \$4.5 billion was invested.
 - 2023 - an additional \$500,000 appropriated
 - Two grant programs have been funded under CWIA for the replacement of lead service lines:
 - **NYS Department of Health Lead Service Line Replacement Program**: Since 2017, the NYS Department of Health has provide \$30 million in grants to 44 municipalities to conduct full lead service line (LSL) replacements at no cost to homeowners or tenants.
 - ◻ As of July 2022, 28 municipalities had spent \$14.1 million in LSLRP funds (47% of the \$30 million total) to replace 2,385 LSLs, with an average cost to replace each LSL of \$5,918. 10 of these communities had expended 100% of their funds by July 2022 and have been eager for more.

- Water Infrastructure Improvement Act (WIIA): This grant program is administered by the Environmental Facilities Corp and is for wastewater and drinking water projects that improve water quality and/or protect the public health. Rochester has received \$3,660,000 and Niagara Falls has received \$3 million in WIIA grants for LSL replacements.
- 2022 Clean Water, Clean Air, and Green Jobs Environmental Bond Act
 - Passed overwhelmingly by NYS voters in November 2022
 - Includes \$650 million for water projects:
 - \$200 million for wastewater improvements
 - \$250 million for stormwater improvements
 - \$200 million for other water quality improvements, such as LSL replacements

Water Utility Self-Funding (including municipal bonds or pay-as-you-go)

- Utilities can also pay for lead service line replacements using their own resources, either financed by municipal bonds (repaid from rate revenues), or without borrowing (i.e., pay-as-you-go, aka PAYGO). Where borrowing is possible, implementation can be expedited significantly.
- NYS recently amended Local Finance Law section 11.00(a)(109) to allow for municipalities to bond for lead service line replacements. L. 2023, c. 58, section UU, enacted May 3, 2023.

Note: an ordinance may require state enabling legislation

§ 1. Definitions - For the purposes of this Chapter:

CITY—Shall mean the [City].

CONTRACTOR—Shall mean a licensed vendor that contracts with the [City] to replace lead service lines.

DEPARTMENT—Shall mean the [Water Department of the City]

DWELLING—Shall mean a building or structure or part thereof containing one or more dwelling units. This chapter shall also apply to buildings and structures that are not used for residential purposes.

DWELLING UNIT—Shall mean any room or groups of rooms or any part thereof located within a building and forming a single habitable unit with facilities that are used or designed to be used for living, sleeping, cooking, eating, or bathing.

LEAD SAFE—Shall mean any condition that does not allow access or exposure to lead, in any form, to the extent that adverse human health effects are possible.

LEAD SERVICE LINE—Shall mean a water line that is not lead-free (including a galvanized pipe that is or has been connected to any upstream component made of lead or unknown material) and that runs from the water main into the structure or building.

OCCUPANT—Shall mean a person or persons in actual possession of and living in the building or dwelling unit.

OWNER—Shall mean any person who has legal title to any dwelling, with or without accompanying actual possession thereof; or, who has equitable title and is either in actual possession or collects rents therefrom; or, who is executor, executrix, trustee, guardian, or receiver of the estate of the owner; or as mortgagee; or as vendee in possession either by virtue of a Court order or by agreement or voluntary surrender of the premises by the person holding the legal title; or as collector of rents has charge, care, or control of any dwelling or rooming house.

§ 2. Prohibition of Lead Service Lines - It is hereby established that lead service lines are prohibited in the [City] and any existing lead service lines are required to be replaced.

§ 3. Exclusion - A property owner may be excluded from the mandatory replacement of its lead service line by providing the [Water Department], within 90 days of the effective date of this ordinance, with written proof from a licensed and certified plumber that it does not have a lead service line on its property, and/or that the lead service line was previously removed and replaced.

§ 4. Property Owner Responsibility to Replace Lead Service Line -

a. The owner of any dwelling, building, or structure serviced by a lead service line is required to replace the lead service line on their property. The replacement of the lead service line must be completed within 90 days of the effective date of this ordinance. An extension of time may be granted where the owner can demonstrate, to the [Water Department] designee, that a good faith effort has been made to comply with the ordinance.

b. The owner of a dwelling, building, or structure shall replace their lead service line by any of the following methods:

1. Signing up for the Lead Service Line Replacement Program offered by the [City] at the expense of the [City/water system] and allowing contractors to access their property to conduct the replacement. The Contractor will provide the owner with a Right of Entry form for completion. The Right of Entry form will provide the contractor with access to the property to verify the existence of a lead service line; or

2. Replacing the lead service line on their own and at their own expense. If an owner selects this option, then replacement must be completed within 90 days of the effective date of this ordinance. An extension of time may be granted where the owner can demonstrate, to the [Water Department] designee, that a good faith effort has been made to comply with the ordinance. An owner is required to provide the [Water Department] with proof that the lead service line has been replaced. Proof must include at a minimum: (i) a permit issued by the [Water Department] to a licensed plumber authorized to do the work; (ii) an invoice from the contractor who completed the work; (iii) a copy of the estimate along with any report of the work completed; and (iv) an inspection report [by the Water Department or the Buildings Department] verifying the removal.

§ 5. City Responsibility to Replace Lead Service Lines - Notwithstanding section 4, if an owner of the dwelling, building, or structure does not sign up for the Lead Service Line Replacement Program or does not replace its lead service line within 90 days of the effective date of this ordinance (or within the time frame provided in an extension) or is inaccessible or otherwise denies access to the property to enable the replacement of the line, then the following procedure shall be followed:

a. The City shall secure entrance to the property from the owner or current occupant of the dwelling, building, or structure, and the City shall incur no liability from the owner. The contractor will provide the owner or occupant with a Right of Entry form for completion. The Right of Entry

form will provide the Contractor with access to the property to verify the existence of a lead service line. The City shall restore the property to its original condition, or as close as possible to its original condition; and

b. If access is granted by the occupant of the dwelling, building, or structure, the occupant shall be held harmless and no liability shall incur to the City or occupant due to the replacement of the lead service line by the [City]; and

c. If access is denied by the current occupant or owner, then the City shall commence procedures, including filing a Court action, to conduct the replacement of the lead service line.

§ 6. Timeline for the Replacement of Lead Service Lines -

a. All lead service lines shall be replaced as soon as possible, but in no event later than ten years from the effective date of this law.

b. A municipality shall ensure no less than a ten percent rate of lead service line replacements each year to ensure compliance with the overall ten-year replacement timeline.

§ 7. Owner and Buyer Responsibilities -

a. Upon the sale or transfer of ownership of any dwelling, building, or structure, the owner must provide proof that the lead service line has been replaced in order to secure a Certificate of Occupancy or Certificate of Code Compliance.

b. If an owner of a dwelling, building, or structure that has a lead service line signs up for the city's Lead Service Line Replacement Program, and the lead service line has not yet been replaced when the owner sells the dwelling, building, or structure, the owner shall provide the buyer with proof of enrollment in the city's Lead Service Line Replacement Program as satisfying the owner's obligation to replace a lead service line under this law.

c. Upon the sale of any City-owned property, within 90 days of the closing, the buyer is responsible for replacing the lead service line, by either enrolling in the Lead Service Line Replacement Program or in accordance with section 4(b)(2) above.

§ 8. Enforcement - The [City/water system] may shut off water to any property for which access has been denied to replace a lead service line. The [City/water system] shall record in property records for such property that it has a lead service line and that access to replace that line was denied.

- 1 Erik D. Olson & Alexandra Stubblefield, *Lead Pipes Are Widespread and Used in Every State*, NRDC (July 8, 2021), <https://www.nrdc.org/resources/lead-pipes-are-widespread-and-used-every-state>. *Fact Sheet*, Drinking Water Infrastructure Needs Survey and Assessment, USEPA (April 2023), https://www.epa.gov/system/files/documents/2023-04/Final_DWINSAs%20Public%20Factsheet%204.4.23.pdf.
- 2 *Fact Sheet*, Drinking Water Infrastructure Needs Survey and Assessment, USEPA (April 2023), https://www.epa.gov/system/files/documents/2023-04/Final_DWINSAs%20Public%20Factsheet%204.4.23.pdf.
- 3 *FACT SHEET: The Biden-Harris Lead Pipe and Paint Action Plan*, The White House (Dec. 16, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/16/fact-sheet-the-biden-harris-lead-pipe-and-paint-action-plan/>.
- 4 Nat'l Center for Env't Health, Centers for Disease Control & Prevention (CDC) et al., *Guidelines for the Identification and Management of Lead Exposure in Pregnant and Lactating Women* 30 (2010), www.cdc.gov/nceh/lead/publications/leadandpregnancy2010.pdf.
- 5 Advisory Comm. on Childhood Lead Poisoning Prevention, CDC, *Low Level Lead Exposure Harms Children: A Renewed Call for Primary Prevention* (2012), www.cdc.gov/nceh/lead/acclpp/final_document_030712.pdf; *Lead: Information for Workers*, Nat'l Inst. for Occupational Safety & Health, CDC, <https://www.cdc.gov/niosh/topics/lead/workerinfo.html> (last updated Jan. 6, 2023).
- 6 *Lead: Information for Workers*, Nat'l Inst. for Occupational Safety & Health, CDC, <https://www.cdc.gov/niosh/topics/lead/workerinfo.html> (last updated Jan. 6, 2023).
- 7 *Id.*
- 8 *Lead Poisoning Prevention*, CDC, <https://www.cdc.gov/nceh/lead/prevention/default.htm> (last updated Sept. 2, 2022).
- 9 *Pediatrics* (2016) 138(1): e20161493, American Academy of Pediatrics, *Prevention of Childhood Lead Toxicity | Pediatrics | American Academy of Pediatrics (aap.org)*.
- 10 *Lead Poisoning*, World Health Organization (WHO) <https://www.who.int/en/news-room/fact-sheets/detail/lead-poisoning-and-health> (last updated Aug. 31, 2022).
- 11 *Basic Information about Lead in Drinking Water*, U.S. Env't Prot. Agency (EPA), <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water> (last updated Jan. 27, 2023).
- 12 See Richard Rabin, *The Lead Industry and Lead Water Pipes: "A Modest Campaign,"* 98 Am. J. Pub. Health 1584 (2008); Werner Troesken, *The Great Lead Water Pipe Disaster* (MIT Press 2008).
- 13 Raymond J. Santucci Jr & John R. Scully, *The Pervasive Threat of Lead (Pb) in Drinking Water: Unmasking and Pursuing Scientific Factors That Govern Lead Release* 117 Proc. Nat'l Acad. Sci. (2020).
- 14 Lindsay W. Stanek et al., *Modeled Impacts of Drinking Water Pb Reduction Scenarios on Children's Exposures and Blood Lead Levels* 54 Env't Sci. & Tech. 9474, 9474–82 (2020); see also Ronnie Levin et al., *The Urban Lead (Pb) Burden in Humans, Animals and the Natural Environment* 193 Env't Rsch. (2021).
- 15 EPA, *supra* note 11.
- 16 EPA, *Report of the Lead and Copper Rule Working Group to the National Drinking Water Advisory Council* 13–14 (Aug. 2015), <https://www.epa.gov/sites/default/files/2017-01/documents/ndwaclcrwgfinalreportaug2015.pdf>.
- 17 *AWWA Policy Statement on Lead Service Line Management*, Am. Water Works Ass'n, <https://www.awwa.org/Policy-Advocacy/AWWA-Policy-Statements/Lead-Service-Line-Management> (last updated Jan. 14, 2017).
- 18 42 U.S.C. § 300g-1(b)(2); 40 C.F.R. § 141, Subpart I et seq.
- 19 42 U.S.C. §§ 300g-1(b)(2)(A), (b)(4)(A).
- 20 42 U.S.C. § 300g-1(b)(4)(B). Unfortunately, the Safe Drinking Water Act was weakened in 1996 to allow EPA to set MCLs in some cases that are less protective of health than is feasible to attain, based on cost-benefit analysis. See 42 U.S.C. § 300g-1(b)(6). Such a process is amenable to substantial subjectivity and manipulation.
- 21 42 U.S.C. § 300g-1(b)(7)(A).
- 22 Corrosion control treatment is a type of water treatment designed to prevent corrosion of lead service lines and lead-bearing plumbing.
- 23 The revised Lead and Copper Rule (LCRR), which water systems will need to comply with starting in October 2024, also does not require corrective action when fewer than 10% of samples have lead levels above 15 ppb. 40 C.F.R. § 141.80(a)(3). However, when 10% or more of samples meet or exceed 10 ppb, the LCRR does require water systems to set a voluntary goal for lead service line replacement and make a plan for corrosion control treatment. The LCRR also mandates a "find and fix" requirement, which sets out procedures to follow when a tap sample site exceeds the lead action level. 40 C.F.R. § 141.80(j). In this find and fix procedure, additional samples are taken from the tap sample site and samples are evaluated to determine which adjustments of the optimal corrosion control treatment or distribution system actions are necessary to lower lead levels. 40 C.F.R. § 141.80(j)(1); 40 C.F.R. § 141.80(j)(3). The State then approves the treatment recommendation or specifies a different approach. 40 C.F.R. § 141.80(j)(4).
- 24 40 C.F.R. § 141.86(c).
- 25 *Id.* We are describing the LCR as currently in effect as of early 2023; EPA did make some revisions in January 2021, slated to become enforceable in October 2024, but the agency has publicly stated that it will be overhauling that January 2021 rule by October 2024.
- 26 40 C.F.R. § 141.80(c).
- 27 See 40 C.F.R. § 141.80(c); see also Elin Betanzo et al., *Lessons from the First Year of Compliance Sampling Under Michigan's Revised Lead and Copper Rule and National Lead and Copper Rule Implications*, 3 AWWA Water Sci. (2021) (finding that only testing the first- or fifth-liter draw is likely "to miss significant lead detections.") EPA's current LCR, enforceable until October 2024, requires testing only of the "first draw" water from the tap, rather than the water that has been sitting in a lead service line collecting lead contamination. The new January 2021 LCR Revisions will require testing of only the 5th liter of water but not the first draw water.
- 28 See, e.g., Mark Edwards et al., *Gaps in the EPA Lead and Copper Rule That Can Allow for Gaming of Compliance* (2009), https://mediad.publicbroadcasting.net/p/michigan/files/201511/Gaming_the_LCR_WASA_2003-2009_Oct_2009.pdf.
- 29 For example, in New York City, the water system sampled 375 sites in 2021. Even though 24 of those sites tested at lead levels higher than 15 ppb, that did not constitute a lead action level exceedance requiring corrective action since those sites comprised only 6.4% of the samples. See DEP, *New York City Drinking Water Supply and Quality Report* 14 (2021), <https://www.nyc.gov/assets/dep/downloads/pdf/water/drinking-water/drinking-water-supply-quality-report/2021-drinking-water-supply-quality-report.pdf>; see also, e.g., Brenda Goodman et al., *Lax Oversight Weakens Lead Testing of Water*, WebMD (June 12, 2017), <https://www.webmd.com/special-reports/lead-dangers/20170612/lead-water-testing>.
- 30 Press release, NRDC, *Lead Found at Exceedingly High Levels in West Virginia Drinking Water* (July 15, 2021), <https://www.nrdc.org/press-releases/lead-found-exceedingly-high-levels-west-virginia-drinking-water>.
- 31 Emergency Administrative Order, *In re Clarksburg Water Board*, Docket No. CWA-03-2021-0110DS (EPA Region III, July 14, 2021), [https://yosemite.epa.gov/oa/rhc/ep-admin.nsf/Filings/5D20FEB828000B458525871300486662/\\$File/Clarksburg%20Water%20Board.%20PWS%20Emergency%20Administrative%20Order.%207.14.2021.pdf](https://yosemite.epa.gov/oa/rhc/ep-admin.nsf/Filings/5D20FEB828000B458525871300486662/$File/Clarksburg%20Water%20Board.%20PWS%20Emergency%20Administrative%20Order.%207.14.2021.pdf)
- 32 Hannah Northey, 'Jaw-dropping': EPA issues rare lead order in W.Va., E&E News (July 15, 2021), <https://www.eenews.net/articles/jaw-dropping-epa-issues-rare-lead-order-in-w-va/>.

- 33** Miguel A. Del Toral et al., *Detection and Evaluation of Elevated Lead Release from Service Lines: A Field Study* 47 *Env't Sci. & Tech.* 9300 (2013).
- 34** See Roger B. Arnold & Marc A. Edwards, *Potential Reversal and the Effects of Flow Pattern on Galvanic Corrosion of Lead* 46 *Env't Sci. & Tech.* 10941 (2012); G. E. Lagos et al., *Aging of Copper Pipes by Drinking Water* 93 *J. Am. Water Works Ass'n* 94 (2001); Marc A. Edwards, et al. *The Role of Pipe Aging in Copper Corrosion By-Product Release*, 1 *Water Sci. & Tech: Water Supply*, 25 (2001).
- 35** The revised Lead and Copper Rule, which water systems will need to comply with starting in October 2024, reduces the rate at which water systems with action level exceedances must replace their lead service lines from 7% per year to 3% per year. As a result, it would take 33 years to completely replace all of the lead service lines [in NYC?] (rather than 15 years with a replacement rate of 7%). In addition, EPA's own calculations indicate that most lead service lines will remain in use under this revised rule, because there are so many ways for water systems to avoid being required to replace them. This exposes future generations of children to dangerous levels of lead in their drinking water.
- 36** Memorandum from Robert A. Kaplan, Acting Regional Administrator, EPA, to Michael H. Shapiro, Acting Assistant Administrator, Office of Water, *Region 5's Experience in Implementation of the Lead and Copper Rule* (Dec. 29, 2017).
- 37** *History of New York City Drinking Water*, N.Y.C. Dep't of Env't Prot. (DEP), <https://www1.nyc.gov/site/dep/water/history-of-new-york-citys-drinking-water.page> (last visited Mar. 24, 2023).
- 38** *Lead Service Line Coordinates*, NYC Department of Environmental Protection, <https://data.cityofnewyork.us/Environment/Lead-Service-Line-Location-Coordinates/bnkq-6un4> (last visited Mar. 28, 2023).
- 39** *Id.*
- 40** DEP, *Lead Free NYC: Get the Facts on Tap Water* (Feb. 2019), <https://www1.nyc.gov/assets/dep/downloads/pdf/water/water-monitoring/monitoring-for-lead/lead-free-nyc-brochure.pdf>.
- 41** *Lead in Household Plumbing* FAQs, DEP, <https://www1.nyc.gov/site/dep/water/lead-in-household-plumbing-faq.page> (last visited Mar. 24, 2023).
- 42** *Public Water Supply Contact Information*, N.Y. State Dep't of Health (NYSDOH), https://www.health.ny.gov/environmental/water/drinking/pws_contacts/map_pws_contacts.htm (last updated Aug. 2022).
- 43** *EPA Researchers Share Approaches to Identify Lead Service Lines*, EPA, <https://www.epa.gov/sciencematters/epa-researchers-share-approaches-identify-lead-service-lines> (last updated Mar. 08, 2023).
- 44** *Water Service Line Map FAQs*, Lead Free NYC, <https://www.nyc.gov/content/leadfree/pages/maps-faq> (last visited Mar. 26, 2023). The information is based on one of the following record types:
- Historical records based on the latest plumbing records filed by a licensed master plumber for a property;
 - Observations from visual inspections by DEP at the meter inside a home; or
 - Excavations, the result of external visual inspections conducted by city agencies at the point where the water service line connects with the City-owned water main in the street.
- 45** *Lead Service Line Coordinates*. New York City Department of Environmental Protection. <https://data.cityofnewyork.us/Environment/Lead-Service-Line-Location-Coordinates/bnkq-6un4>
- 46** Which DEP classifies as "Potential Lead."
- 47** See *supra* note 43.
- 48** Which DEP classifies as "Unknown."
- 49** Data match of Lead Service Line Coordinates. New York City Department of Environmental Protection. <https://data.cityofnewyork.us/Environment/Lead-Service-Line-Location-Coordinates/bnkq-6un4> performed by AlertTek/Link2Tek, Inc. on April 26, 2023. <http://www.alerttek.us>
- 50** According to the April 1, 2020 Census Data, NYC's population was 8,804,190. NYC Department of Planning. <https://www.nyc.gov/site/planning/planning-level/nyc-population/nyc-population.page>
- 51** Neighborhoods as defined by the United Hospital Fund.
- 52** *A Mapping of NYC Lead Service Lines*. New York League of Conservation Voters Education Fund. <https://nycledfund.maps.arcgis.com/apps/dashboards/342497b697cf4994ab64652e4dbdc4fc> (last visited May 4, 2023).
- 53** New York State Law requires all health care providers to test children one and two years old and it is recommended that children at risk be tested until age six. *Childhood Lead Poisoning Prevention*, NYSDOH, <https://www.health.ny.gov/environmental/lead/> (last updated Dec. 2022).
- Each year, the NYC Health Department receives blood lead test results and publishes data for more than 300,000 children younger than six years old. *Lead Poisoning Reports, Publications and Surveillance Data*, N.Y.C. Dep't of Health & Mental Hygiene, <https://www.nyc.gov/site/doh/data/data-sets/lead-pubs.page> (last visited Mar. 26, 2023). Special attention is paid to children with elevated blood lead levels (BLLs), which are currently set at 3.5 micrograms of lead per deciliter of blood (mcg/dL). *Lead Poisoning: Information for Health Care Provider*, N.Y.C. Dep't of Health & Mental Hygiene, <https://www.nyc.gov/site/doh/health/health-topics/lead-poisoning-for-healthcare-providers.page> (last visited Mar. 26, 2023).
- 54** Newark, N.J., Code § 16:23 (2019).
- 55** New Jersey subsequently enacted a law requiring water systems to replace all lead service lines in the state. See N.J. Stat. Ann. §§ 58:12A-40, 58:12A-44 (2021). Michigan and Illinois have enacted similar laws. See Mich. Admin. Code r. 325.10604f(6) (2018); 415 Ill. Comp. Stat. 5/17.12(v) (2022). New Jersey requires all service lines to be replaced within 10 years and Michigan requires all to be replaced within 20 years. N.J. Stat. Ann. § 58:12A-44; Mich. Admin. Code r. 325.10604f(6)(b).
- 56** Joan Leary Matthews, *Meeting the Challenge of Lead Service Line Replacements*, NRDC (May 16, 2022), <https://www.nrdc.org/bio/joan-leary-matthews/meeting-challenge-lead-service-line-replacements>.
- 57** In 2020, New Jersey took this concept one step further, enacting legislation granting municipalities authority to adopt an ordinance allowing entrance to private property to replace LSLs without property owner permission, after notifying residents. N.J. Rev. Stat. § 58:12A-39 (2020).
- 58** Newark, N.J., Code § 16:23 (2019), <https://ecode360.com/36709572?noresponse=false>.
- 59** See *Model Ordinance for the Replacement of Lead Service Lines*, Nat. Res. Def. Council, <https://www.nrdc.org/sites/default/files/model-ordinance-replacement-lead-service-lines-20220506.pdf> (also attached as Appendix B to this report).
- 60** See Environmental Defense Fund and American University, School of Public Affairs, *Lead Pipes and Environmental Justice: a study of lead pipe replacement in Washington, D.C.* (March 2020), https://www.edf.org/sites/default/files/u4296/LeadPipe_EnvironJustice_AU%20and%20EDF%20Report.pdf.
- 61** Advocates have repeatedly asked DEP the basis for this assertion, but it has failed to provide any.
- 62** FOIL Request from Earthjustice to DEP (April 22, 2022), <https://a860-openrecords.nyc.gov/request/view/FOIL-2022-826-02178>.
- 63** Cyndi Roper, *The Hidden Costs & Dangers of Partial Lead Pipe Replacements*, NRDC (Mar. 12, 2018), <https://www.nrdc.org/experts/cyndi-roper/hidden-costs-dangers-partial-lead-pipe-replacements>.

64 Letter from EPA Science Advisory Board to Lisa P. Jackson, EPA Administrator, *Subject: SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements*, (Sept. 28, 2011), https://www.epa.gov/sites/default/files/2015-09/documents/sab_evaluation_partial_lead_service_lines_epa-sab-11-015.pdf.

65 40 C.F.R. § 141.84(g)(3), as promulgated January 15, 2021, 86 Fed. Reg. 4290 (note this does not become enforceable until October 2024).

66 NYC Department of Environmental Protection, *Lead Service Line Replacement Program Strategy* (Sept. 2022) (slide deck on file with the authors).

67 EPA, *Strategies to Achieve Full Lead Service Line Replacement 5* (Oct. 2019), https://www.epa.gov/sites/default/files/2019-10/documents/strategies_to_achieve_full_lead_service_line_replacement_10_09_19.pdf.

68 Comments by Am. Water Works Ass'n on Proposed Lead and Copper Rule Revisions, Docket No. EPA-HQ-OW-2017-0300 (Feb. 5, 2020) at 117 tbl.7, <https://www.regulations.gov/comment/EPA-HQ-OW-2017-0300-1018>.

69 *Lead Service Line Replacement Frequently Asked Questions*, NYSDOH, <https://health.ny.gov/environmental/water/drinking/lslrp/faq.htm> (last updated Aug. 2021).

70 *Lead Service Line Replacement Program*, City of Newark, N.J., <https://www.newarkleadserviceline.com/replacement#:~:text=Typically%2C%20the%20cost%20of%20replacing,no%20cost%20to%20the%20homeowner> (last visited Mar. 26, 2023).

71 Infrastructure Investment and Jobs Act of 2021, Pub. L. No. 117-58.

72 *EPA Fact Sheet*, supra note 1.

73 Coronavirus State and Local Fiscal Recovery Funds, 87 Fed. Reg. 4338, at 4372, 4414 (Jan. 27, 2022) (codified at 31 C.F.R. § 35). ARPA funds distributed to states and localities, which Treasury Department rules explicitly state that ARPA funds are authorized for use for lead service line replacement, and only full replacement can be funded.

74 For example, the funding to replace all of the 23,000 lead service lines in Newark, came from bonds issued by the county. Leah Mishkin, *Replacement of lead service lines in Newark pays off*, New Jersey Spotlight News (Sept. 30, 2021). The New York State Legislature also amended the Local Finance Law on May 3, 2023, to allow municipalities and other local government entities to bond for lead service line replacements. NY Local Finance Law § Section 11.00(a)(109), added by L. 2023, C. 58, section UU.

75 *Prometheus Realty Corp. v. N.Y.C. Water Bd.*, 30 N.Y.3d 639, 646 (2017); see also N.Y. Pub. Auth. L. § 2824(1). The Court in *Prometheus* upheld the Water Board's differing treatment of classes of customers, with some benefitting from the differential treatment and some not. *Prometheus*, 30 N.Y.3d at 646-647. The Court explained that a utility has "unfettered discretion" to set rates, as long as they are not arbitrary and do not constitute invidious illicit discrimination. *Id.* at 646. It further held that the distinction between beneficiaries need not be drawn with surgical precision. *Id.* at 647. Despite having prevailed in the *Prometheus* litigation, DEP claims, without providing any authority, that it cannot use water rates for a lead service line replacement program because not all customers have lead service lines and water rates cannot be used to benefit some, but not all customers. NYC Department of Environmental Protection, *Lead Service Line Replacement Strategy* (Sept. 2022), slide 9 (slide deck on file with the authors). See also Testimony of Angela Licata, Deputy Commissioner, Department of Environmental Protection submitted on behalf of the Association of Metropolitan Water Agencies before the United States House of Representatives, "Hearing on EPA's Lead and Copper Rule Proposal: Failing to Protect Public Health" (Feb. 11, 2020), <https://docs.house.gov/meetings/IF/IF18/20200211/110501/HHRG-116-IF18-Wstate-LicataA-20200211.pdf>; see also, Shaun A. Goho et al., Emmett Env't L. & Policy Clinic & Env't Def. Fund, *Rates Could Fund Lead Pipe Replacement in Critical*

States 46–48 (2019), http://clinics.law.harvard.edu/environment/files/2019/04/Rates-Fund-LSL-Replacement-States_Harvard_EDF_2019.pdf (concluding that it is likely that New York State "policy would support using rate funds to replace lead service lines (LSLs) on private property based on public health and efficiencies of replacing entire service line at one time").

76 Too often, water systems, including DEP's, do not consider lead service line replacements as capital improvement projects, and hence do not include them in their capital improvement plans. Water rates can fund capital improvement projects.



Earthjustice is the premier nonprofit public interest environmental law organization. We wield the power of law and the strength of partnership to protect people’s health, to preserve magnificent places and wildlife, to advance clean energy, and to combat climate change. We are here because the earth needs a good lawyer.



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New York League of Conservation Voters Education Fund (NYLCVEF) educates, engages, and empowers New Yorkers to be effective advocates for the environment.



Examples (from left) of a lead pipe, a corroded steel pipe, and a lead pipe treated with protective orthophosphate