

# Pour Decisions: Legal Reform for America’s Lead in Drinking Water Crisis

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## INTRODUCTION: AMERICA HAS A PROBLEM

“America, America has a problem.”<sup>1</sup> That problem is *lead*: a highly toxic metal that contaminates our drinking water. Hidden beneath the surface, an estimated 10 million lead pipes affect 186 million people, or 56 percent of the nation.<sup>2</sup> Unbeknownst to many, health disparities emerge, disproportionately impacting Black communities due to historic injustices like racial segregation and redlining.<sup>3</sup>

Despite the growing water crisis, solutions are within reach. Legislative, administrative, and legal actions can address past harms and prevent future generations from grappling with this issue of toxic water infrastructure poisoning communities across the country. This Article delves into America’s history of lead in drinking water, recent regulatory efforts, and newly proposed rule making that will lead to a lasting solution.

## I. TOXIC LEGACY: THE HISTORY OF LEAD POISONING IN AMERICA

A. *Modern Water Crises*

The Flint Water Crisis marked a pivotal moment in the struggle for clean water. Though not the first or last environmental crisis, Flint’s severity lay in its origin and the communities it affected. Due to the city government’s overall poor economic conditions, Flint lost political power to a state-appointed emergency manager, who, in April 2014, switched Flint’s water source to the corrosive Flint River without proper treatment. The corrosive nature of the Flint River water caused the lead pipes to erode and leach lead particles into the drinking water.<sup>4</sup> Ignoring the residents’ formal complaints, government officials allowed lead contamination to persist until the newly elected Flint Mayor, Karen Weaver, declared a state of emergency on December 15, 2015, due to the widespread human exposure to lead-poisoned tap water throughout the entire city.<sup>5</sup>

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1. BEYONCÉ, AMERICA HAS A PROBLEM (Columbia Records 2022), streaming audio, <https://open.spotify.com/track/2XMAWynSTIst5KmLSv0Npf?si=385b1a81314a4398>.

2. *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/>.

3. See Anne E. Nigra & Ana Navas-Acien, *Racial Inequalities in Drinking Water Lead Exposure: A Wake-Up Call to Protect Patients with End Stage Kidney Disease*, 32 *J. of the Am. Soc’y. of Nephrology* No. 10, 2419-2421, (October 2021); See Mercedes A. Bravo et al., *Racial Residential Segregation Shapes the Relationship Between Early Childhood Lead Exposure and Fourth-Grade Standardized Test Scores*, 119 *PROC. OF THE NAT’L. ACAD. OF SCI.* 34, (August 2022), <https://doi.org/10.1073/pnas.2117868119>.

4. Kristin Longley, *Emergency Manager Michael Brown Appointed to Lead Flint Through Second State Takeover*, MLIVE (Nov. 30, 2011), [https://www.mlive.com/news/flint/2011/11/emergency\\_manager\\_michael\\_brow.html](https://www.mlive.com/news/flint/2011/11/emergency_manager_michael_brow.html).

5. See *Fighting For Safe Drinking Water in Flint*, NAT. RES. DEF. COUNCIL (Apr. 13, 2022), <https://www.nrdc.org/resources/fighting-safe-drinking-water-flint>; See *Mayor Karen Weaver Declares State of Emergency*, CITY OF FLINT (Dec. 15, 2015), <https://www.cityofflint.com/mayor-karen-weaver-declares-state-of-emergency/>.

Flint's crisis exposed systemic issues, disproportionately impacting people of color, particularly the Black community. At the start of the crisis, over 50 percent of Flint's nearly 100,000 residents were Black, and over 40 percent were living in poverty.<sup>6</sup> The crisis, revealing a majority Black, low-income city knowingly poisoned by its government, sparked international outrage, alerting other communities of potential water crises.<sup>7</sup> Subsequent lead crises in Pittsburgh,<sup>8</sup> Newark,<sup>9</sup> Benton Harbor,<sup>10</sup> and Jackson,<sup>11</sup> along with an already existing and still ongoing crisis in Washington, D.C.,<sup>12</sup> amplified racial and economic disparities.

While racial and economic factors play a role, the risk of lead exposure extends nationwide due to the millions of lead pipes.<sup>13</sup> Understanding how we reached this point requires examining lead's impact on health and America's regulatory history with lead exposure in housing, transportation, and infrastructure.

### B. History of Health Impacts and Regulatory Actions

Lead, a naturally occurring heavy metal, was historically favored for its malleability and cost-effectiveness in various applications, including paint, gasoline, and plumbing.<sup>14</sup> Despite its versatility, lead is a hazardous neurotoxin with severe health consequences, particularly for children and pregnant women.<sup>15</sup>

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6. U.S. Census Bureau, Flint, Michigan, Population Census (Apr. 1, 2010), <https://www.census.gov/quickfacts/fact/table/flintcitymichigan/POP010210>

7. Leonidas Murembya & Eric Guthrie, *Demographic and Labor Market Profile: City of Flint*, STATE OF MICH. DEP'T OF TECH., MGMT., & BUDGET (April 2016), [https://milmi.org/docs/publications/Flint\\_City\\_Demographic\\_and\\_Labor\\_Mkt\\_Profile.pdf](https://milmi.org/docs/publications/Flint_City_Demographic_and_Labor_Mkt_Profile.pdf).

8. *Pittsburgh Agrees to Terms for Tackling Its Lead-Contaminated Water*, NAT. RES. DEF. COUNCIL (Feb. 7, 2019) <https://www.nrdc.org/bio/nrdc/pittsburgh-agrees-terms-tackling-its-lead-contaminated-water>.

9. *Fighting for Safe Drinking Water in Newark*, NAT. RES. DEF. COUNCIL (Jan. 26, 2021), <https://www.nrdc.org/resources/fighting-safe-drinking-water#:~:text=Alarmed%20by%20high%20levels%20of,secure%20safe%20drinking%20water%20for>.

10. *Groups File Emergency Petition Asking EPA To Order Safe Water For Benton Harbor, MI Due To Shocking Lead Contamination*, NAT. RES. DEF. COUNCIL (Sep. 9, 2021), <https://www.nrdc.org/press-releases/groups-file-emergency-petition-asking-epa-order-safe-water-benton-harbor-mi-due>.

11. National Association for the Advancement of Colored People, *Jackson Water Crisis* (2023) <https://naacp.org/campaigns/jackson-water-crisis>.

12. DC Water, *EPA Lead and Copper Monitoring Results*, DC WATER IS LIFE (2023), <https://www.dewater.com/epa-lead-and-copper-monitoring-results>.

13. Erik D. Olson & Alexandra Stubblefield, *Lead Pipes Are Widespread Used in Every State*, NAT. RES. DEF. COUNCIL (Jul. 8, 2021), <https://www.nrdc.org/resources/lead-pipes-are-widespread-and-used-every-state#:~:text=After%20conducting%20a%20survey%20of,that%20claim%20to%20have%20none>.

14. *Lead is a Harmful Heavy Metal*, UN ENVIRONMENT PROGRAMME (Dec. 2022), <https://www.unep.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/lead>.

15. *Lead Poisoning*, WORLD HEALTH ORG. (Aug. 11, 2023), <https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health#:~:text=Lead%20also%20causes%20long%2Dterm,birth%20and%20low%20birth%20weight>.

Lead exposure—whether through ingestion, inhalation, or absorption—can lead to irreversible damage to the brain, nervous system, and other organs.<sup>16</sup> Children exposed to lead may experience developmental delays, learning and behavioral issues, and long-term cognitive impairments.<sup>17</sup> Pregnant women with high blood lead levels face increased risks, including miscarriage and damage to the baby’s brain and nervous system.<sup>18</sup>

While advancements in medicine have clarified lead’s health impacts, its dangers have been known for centuries. The use of lead pipes dates back to Ancient Romans in 200 BC, and the awareness of lead’s toxicity in America had developed by the late 1800s. This raises the question: Despite the knowledge of lead’s harmful effects, why did lead use persist until the 1980s? The answer lies in its cost-effectiveness and crucial role in modernizing our nation.

### 1. *Lead-Based Paint*

Lead-based paint (LBP) was used throughout the 20th century because of its durability. “Most lead paint then in use was based on lead carbonate, known as white lead. The product was manufactured by subjecting lead to corrosion, yielding a white powder. After some processing, the powder was sold as “dry white leads” to paint manufacturers, or ground with linseed oil and sold the product as paint.”<sup>19</sup> White lead could be tinted to offer various color options and it also produced a protective coating. While interior walls of homes were the primary use for LBP, it was also used on furniture, cribs, woodwork, and toys.<sup>20</sup>

With infants and small children naturally placing things in their mouths and LBP’s sweet taste, child lead poisoning became rampant. This eventually led to a series of LBP bans in the 1970s:

- 1971: The Lead-Based Paint Poisoning Act prohibited lead-based paint in residences constructed or rehabilitated by the federal government or with federal assistance and defined paint chips as the primary health hazard of LBP.
- 1973: The U.S. Consumer Product Safety Commission banned hazardous amounts of lead in toys and other products intended for use by children and required warning labels on other lead-containing products under the Federal Hazardous Substances Act.

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16. *See id.*

17. *See* National Center for Environmental Health, *Health Effects of Lead Exposure*, CENTERS FOR DISEASE CONTROL & PREVENTION (Sep. 2, 2022), <https://www.cdc.gov/nceh/lead/prevention/health-effects.htm>.

18. National Center for Environmental Health, *Pregnant Women*, CENTERS FOR DISEASE CONTROL & PREVENTION (Jul. 21, 2022), <https://www.cdc.gov/nceh/lead/prevention/pregnant.htm>.

19. PETER REICH & ENVIRONMENTAL DEFENSE FUND, *THE HOUR OF LEAD: A BRIEF HISTORY OF LEAD POISONING IN THE UNITED STATES OVER THE PAST CENTURY AND OF EFFORTS BY THE LEAD INDUSTRY TO DELAY REGULATION*, ENVIRONMENTAL DEFENSE FUND 2 (Jun. 1992), <https://www.edf.org/sites/default/files/the-hour-of-lead.pdf>.

20. *Id.* at 1 [19].

- 1978: Consumer use of lead-based paint was banned, including for residential use.<sup>21</sup>

Further action to prevent and remedy LBP harm was taken via The Lead Contamination Control Act of 1988, which authorized The Center for Disease Control (CDC) to support local and state agencies in developing comprehensive childhood lead poisoning prevention programs.<sup>22</sup>

## 2. *Leaded Gasoline*

Lead in gasoline followed a similar path. In 1921, American automakers introduced leaded gasoline into public use after automotive engineers discovered that adding lead to gasoline was quite useful.<sup>23</sup> Lead worked as an antiknock agent to quiet the knocking of running engines. Therefore, leaded gasoline increased the automobile's efficiency and resulted in better engine performance. But once again, Americans were confronted with the adverse health impacts of lead poisoning—this time through air pollution.

It was not until 1969 that a clinical study confirmed the health impacts caused from lead in gasoline.<sup>24</sup> The U.S. began to phase out lead in gasoline when the United States Environmental Protection Agency (EPA) “issued the first reduction standards in 1973, which called for a gradual phasedown of lead to one tenth of a gram per gallon by 1986. The average lead content in gasoline in 1973 was two to three grams per gallon or about 200,000 tons of lead a year.”<sup>25</sup> However, lead was not completely removed from gasoline until January 1, 1996, when the Clean Air Act banned the sale of the remaining amounts of leaded fuel that was still available and being used for on-road vehicles.<sup>26</sup> Leaded gasoline's history is much more detailed, but the key takeaway is that lead's detrimental effects were scientifically proven and understood decades before lead in gasoline was banned.<sup>27</sup>

## 3. *Lead Drinking Water Infrastructure*

Lead in paint and gasoline was eventually banned. But that is not the case with lead in water. Lead has been used in plumbing infrastructure around the

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21. National Center for Environmental Health, *1990s – 2000s CLPPP Timeline*, CENTERS FOR DISEASE CONTROL & PREVENTION (Apr. 28, 2022), <https://www.cdc.gov/nceh/lead/about/2000s.html>

22. *Id.* [21].

23. See Hannah Ritchie, *How The World Eliminated Lead From Gasoline*, OUR WORLD IN DATA (Jan. 11, 2022), <https://ourworldindata.org/leaded-gasoline-phaseout#:~:text=The%20world%20started%20adding%20lead,toxic%20pollutant%20%E2%80%93%20particularly%20for%20children.>

24. *Id.* [23].

25. *EPA Takes Final Step in Phaseout of Leaded Gasoline*, EPA (Aug. 11, 2016), <https://www.epa.gov/archive/epa/aboutepa/epa-takes-final-step-phaseout-leaded-gasoline.html#:~:text=EPA%20began%20working%20to%20reduce,tons%20of%20lead%20a%20year.>

26. *Id.* [25]

27. See, e.g., MONA HANNA-ATTISHA, *WHAT EYES DON'T SEE* (2018); ANNA CLARK, *THE POISONED CITY* (2018).

world for centuries.<sup>28</sup> The word *plumbing* derives from the word *plumbum* which is Latin for lead. Hence, lead's symbol on the periodic table being Pb.<sup>29</sup> Despite the long history of lead pipe use elsewhere around the world, large-scale use in America did not begin until the 1800s.<sup>30</sup> Once American lead use began, it would wreak havoc on public health for over 100 years and into the present.

By 1900, the majority of the most populated U.S. cities were using lead pipes for their water systems.<sup>31</sup> The widespread use of lead pipes hinged on lead's malleability and durability; lead lasts twice as long as iron pipes—thirty-five versus sixteen years.<sup>32</sup> The *advantages* of lead pipes were promoted into the 1970s by lead manufacturers' professional associations in efforts to keep selling their poison products to cities.<sup>33</sup> Lead manufacturers continued to promote lead use even though they knew about the health impacts due to well-documented reports of lead pipe poisoning dating back to the 1850s.<sup>34</sup>

With no regulatory action by the federal government, cities and states began to protect public health themselves. In 1890, the Commonwealth of Massachusetts started advising its cities not to use lead pipes.<sup>35</sup> Other cities around the country followed suit to ban or limit the use of lead pipes by the 1920s, having finally determined that the health risks of lead pipes outweighed its infrastructure advantages. On the flip side, during this same timeframe, some cities *required* the use of lead pipes in their water infrastructure. Flint passed an 1897 ordinance *mandating* the use of Lead Service Lines (LSLs).<sup>36</sup> Chicago notoriously *required* the use of LSLs until Congress banned its use in 1986.<sup>37</sup>

The 1986 lead pipes plumbing ban was long overdue. The ban came as an amendment to the Safe Drinking Water Act (SDWA) to include lead-free plumbing requirements. The amendment defined lead-free pipes as solders and flux containing not more than 0.2 percent lead; pipes and pipe fittings containing not more than 8 percent lead; and plumbing fittings and fixtures as defined in industry-developed voluntary standards or standards developed by EPA in lieu of voluntary standards.<sup>38</sup> The ban applied to “public water systems or plumbing

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28. See Science Reference Section, *Why Are Some Elements on the Periodic Table Represented by Letters That Have no Clear Connection to Their Names?*, LIBR. OF CONG. (May 5, 2020), <https://www.loc.gov/everyday-mysteries/chemistry/item/chemical-elements/#:~:text=For%20example%2C%20plumbum%2C%20Latin%20for,water%20supply%20pipes%20for%20centuries.>

29. *Id.* [28].

30. Rabin, *supra* note **Error! Bookmark not defined.**; Werner Troesken, *The Great Lead Water Pipe Disaster* (Cambridge, MA: MIT Press, 2006).

31. Rabin, *supra* note **Error! Bookmark not defined.**, at 2.

32. *Id.* [31].

33. *Id.* [31] at 3.

34. *Id.* [31] at 2.

35. *Id.* [34].

36. Susan J. Masten et al., *Flint Water Crisis: What Happened and Why?*, 108 J. OF AM. WATER WORKS ASS'N. NO. 12 22–34 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5353852/>.

37. Michael Hawthorne & Peter Matuszak, *As Other Cities Dig up Pipes Made of Toxic Lead, Chicago Resists*, CHICAGO TRIB. (Sep. 21, 2016), <https://www.chicagotribune.com/investigations/ct-lead-water-pipes-funding-20160921-story.html>.

38. 42 U.S.C. § 300g–6.

in facilities providing water for human consumption.”<sup>39</sup> While this ban prohibited the future use of lead pipes, it would be another five years until regulations addressed the millions of existing lead pipes in water systems throughout the country.

#### 4. *The Lead and Copper Rule*

Pursuant to SDWA, the EPA issued the Lead and Copper Rule (LCR) on June 7, 1991.<sup>40</sup> The purpose of the rule is to control the amount of lead and copper in drinking water, as human exposure to both elements can result in severe damage to the human body, brain, and central nervous system. The LCR implemented a treatment technique that required public water systems to monitor lead levels by regularly sampling customer taps and reporting them.<sup>41</sup> While EPA set a Maximum Contaminant Level Goal (MCLG) of zero lead in water—since no level of lead is safe for human consumption—the goal was merely aspirational.<sup>42</sup> EPA instead chose fifteen parts per billion (ppb) as a Lead Action Level (LAL) in which compliance would be measured by lead levels in tap water samples.<sup>43</sup> Per the LCR’s sampling protocols, if a water system’s 90th percentile of homes test at or less than fifteen ppb, no action is required by that water system. However, if that 90th percentile exceeds fifteen ppb, it triggers remedial action, which can include:

- Corrosion Control: chemicals are added to the water to prevent or slow the corrosive effect that the water has on lead pipes. This is the main technique for preventing lead in water.
- Public Notice: When corrosion control fails, the water system is required to notify communities about the elevated lead levels and the health impacts through public outreach and education.
- Lead Service Line Replacement (LSLR): additionally, when corrosion control is not sufficient to get a water system back into compliance, they are required to replace their LSLs at a rate of 7 percent per year, fourteen years total.<sup>44</sup>

These were considered landmark protections. Since the implementation of the LCR, EPA reports that LAL exceedances have dropped by 90 percent.<sup>45</sup> However, the LCR’s shortcomings were evident to drinking water experts and advocates even then. First, the LCR did not mandate the eradication of lead from

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39. *Use of Lead Free Pipes, Fittings, Fixtures, Solder, and Flux for Drinking Water*, EPA (Apr. 11, 2023) <https://www.epa.gov/sdwa/use-lead-free-pipes-fittings-fixtures-solder-and-flux-drinking-water>.

40. Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, 56 Fed. Reg. 110, 26460 (June 7, 1991) (to be codified in 40 C.F.R. 141 and 142), <https://www.govinfo.gov/content/pkg/FR-1991-06-07/pdf/FR-1991-06-07.pdf#page=148>.

41. *See Id.* [40] at 26481.

42. *See Id.* [40] at 26467.

43. *Id.* [40] at 26478.

44. Office of Ground Water and Drinking Water, Understanding the Lead and Copper Rule, EPA (Sep. 2020), [https://www.epa.gov/sites/default/files/2019-10/documents/lcr101\\_factsheet\\_10.9.19.final\\_2.pdf](https://www.epa.gov/sites/default/files/2019-10/documents/lcr101_factsheet_10.9.19.final_2.pdf).

45. *Id.* [44].

drinking water, but instead sought to *limit* the concentration of lead in water. Lead was still allowed in water, even though no level of lead is safe. Second, it only applied to drinking water systems serving over 50,000 people. Water systems serving less people were only required to replace pipes in instances where the LAL was exceeded at the tap. Third, sampling data was easy to manipulate. For example, in Flint, water systems operators could cherry-pick which homes they sampled—avoiding places likely to have higher lead levels. Water systems could also remove outliers in sampling. There are instances of homes testing in thousands of ppb, and removing the sample allowed for the water system to remain in compliance and not have to take remedial action at the homes exceeding the LAL.<sup>46</sup>

The EPA's short-term revisions to the 1991 LCR rule in 2000, 2004, and 2007 evidence the rule's inability to protect communities from lead in drinking water. Unfortunately, no attempts at major, long-term revisions happened in the thirty years after the LCR's implementation. Therefore, a weak rule coupled with inconsistent enforcement resulted in the lead crises we have witnessed. But those circumstances contextualize the legacy of lead in places like Flint and Chicago, and help chart a course forward.

While the direct connection between Flint's lead service line (LSL) mandate and its water crisis is evident, the connection between Chicago's mandate and the lead crisis is less apparent. The difference is that Flint's mandate actually resulted in a crisis, whereas Chicago's mandate has yet to rise to a crisis level. However, Chicago, the sole major city known to mandate lead pipes until their nationwide ban in 1986, now faces a significant challenge with over 400,000 LSLs—the highest in the U.S.<sup>47</sup> Illinois, with nearly 700,000 known and over one million estimated LSLs, has the most of any state in the country.<sup>48</sup> Both the city and state acknowledge the looming lead crisis, taking initial steps to mitigate harm and ensure a lead-free future. This dichotomy of past and present crises alongside potential future ones underlies the debate on how to address America's lead in water problem: wait for disaster and react or proactively implement protective measures prioritizing public health.

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46. See Adrian Dingle, *The Flint Water Crisis: What's Really Going On?*, ChemMatters (Dec. 2016), <https://www.acs.org/education/resources/highschool/chemmatters/past-issues/2016-2017/december-2016/flint-water-crisis.html>.

47. Service Line Inventory, *About our Service Line Inventory*, CHICAGO DEP'T. OF WATER MGMT. (Dec. 2023), <https://sli.chicagowaterquality.org/>.

48. Office of Ground Water and Drinking Water, *Fact Sheet: 7th Drinking Water Infrastructure Needs Survey and Assessment*, EPA (April 2023), [https://www.epa.gov/system/files/documents/2023-04/Final\\_DWINSAs%20Public%20Factsheet%204.4.23.pdf](https://www.epa.gov/system/files/documents/2023-04/Final_DWINSAs%20Public%20Factsheet%204.4.23.pdf).



## II. FROM FLINT TO REFORM: LEAD LAWS IN THE WAKE OF CRISIS

### A. *Flint Safe Drinking Water Lawsuit: Concerned Pastors for Social Action v. Khouri*

Flint is a prime example of the inevitable when we choose to be reactive. Flint had century-old LSLs. When residents first raised concerns about the water in 2014, decision makers chose to ignore the problem until it reached crisis-level. However, Flint is also a prime example of how legal advocacy can remedy harms and ignite proactive reform.

On January 27, 2016, the Natural Resources Defense Council (NRDC) and the American Civil Liberties Union of Michigan filed a SDWA lawsuit against the City of Flint and the State of Michigan in the U.S. District Court for the Eastern District of Michigan—with local faith group Concerned Pastors for Social Action and Flint resident Melissa Mays joining as lead plaintiffs.<sup>49</sup>

The initial complaint and ensuing motion for a preliminary injunction claimed that the defendants violated SDWA's federal LCR provisions by not maintaining proper corrosion control treatment techniques; not complying with monitoring and sampling requirements; and, not providing residents with a safe and reliable drinking water source.<sup>50</sup> The primary concern was that the defendants were presently causing irreparable harm to residents.<sup>51</sup> The court granted injunctive relief requiring the defendants to provide bottled water to residents during the crisis. The city also took temporary emergency measures to switch its water source back to Detroit.

In March 2017, the parties reached a landmark settlement. The settlement totaled 97 million dollars: the state contributed 57 million dollars and the federal government supplied 40 million dollars for infrastructure funds. The settlement included key provisions:

- Replacing all LSLs within three years (excavate 18,000 pipes);
- Providing faucet filters with installation, education, and replacement cartridges;
- Tap water testing performed by an independent third party;
- Creating and expanding health programs, with a particular focus on children;
- Continuing bottled water distribution until one year after completion of LSL replacement.<sup>52</sup>

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49. Pls.' Compl. at Pg ID.1, *Concerned Pastors for Soc. Action v. Khouri*, 217 F. Supp. 3d 960 (E.D. Mich. 2016) (No.16 Civ. 10277, Pg ID.1), 2016, [https://www.nrdc.org/sites/default/files/leg\\_16012701a.pdf](https://www.nrdc.org/sites/default/files/leg_16012701a.pdf).

50. *See id.* [49] at 53.

51. Pet'r Br. & Mot. for Prelim. Inj. at 2, *Concerned Pastors* (No.16-10277, PgID.355), 2016, [https://www.nrdc.org/sites/default/files/wat\\_16032401a.pdf](https://www.nrdc.org/sites/default/files/wat_16032401a.pdf).

52. *See generally* Settlement Agreement, *Concerned Pastors* (No.16-10277, PgID.7349), <https://www.nrdc.org/sites/default/files/flint-drinking-water-lawsuit-settlement-agreement-20170327.pdf>.

The settlement came as a consent decree.<sup>53</sup> Because consent decrees are court-approved, parties can return to that court for timely dispute resolution. This proved useful for the plaintiffs as the defendants fell short on some settlement provisions and the court was able to force proper implementation.<sup>54</sup>

The Flint lawsuit set the stage for other communities to use the courts to force action on drinking water violations. Legal wins were subsequently secured in the Pittsburgh, Newark, and Benton Harbor lead crises. And there is a similar lawsuit in Jackson, Mississippi, presently before the court. Following the lawsuit in Flint, the State of Michigan began to take proactive measures to limit future crises in other cities by revising the Michigan Lead and Copper Rule (Michigan LCR).

### B. Michigan Lead and Copper Rule Revisions

While states may also have their own versions of federal regulations, those regulations cannot be less protective than federal regulations. State regulations either mirror federal regulations or are more protective. At the time of the Flint Water Crisis both the federal and state LCR proved to be insufficient to protect Michigan residents, prompting Michigan to revise its own lead laws.

In 2018, Michigan finalized revisions to the MI LCR with the following significant changes:

- Removal of all LSLs in the state at a rate of 5 percent per year, giving water systems twenty years. Water systems are required to pay for this;
- Completion of a LSL inventory due by January 1, 2025. Water systems must determine where all service lines are located and what material the lines are made of;
- LAL to be lowered from fifteen ppb to ten ppb effective January 1, 2025; and
- Banned partial LSLR. Replacing only a portion of an LSL is known to result in increased lead levels in water.<sup>55</sup>

The revisions also changed sampling protocols. Whereas sampling previously tested only the first liter of tap water, it now requires testing the first and fifth liters. This allows more accurate lead levels readings in a home's water.<sup>56</sup>

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53. *Consent Decree*, The Law Dictionary, <https://thelawdictionary.org/consent-decree/>: One entered by consent of the parties; it is not properly a judicial sentence, but is in the nature of a solemn contract or agreement of the parties, made under the sanction of the court, and in effect an admission by them that the decree is a just determination of their rights upon the real facts of the case, if such facts had been proved (last visited Feb. 2024).

54. See Pls.' Fifth Mot. and Br. to Enforce Settlement Agreement at 1, *Concerned Pastors* (No.16-10277, PgID.11085), [https://www.nrdc.org/sites/default/files/242.\\_pls\\_5th\\_mot\\_to\\_enforce\\_settlement\\_agmt-flint-20221101.pdf](https://www.nrdc.org/sites/default/files/242._pls_5th_mot_to_enforce_settlement_agmt-flint-20221101.pdf).

55. Mich. Admin. Code r.325.10102 (2018).

56. *Id.* [55].

In December 2018, a coalition of water systems and municipalities sued the state over the rule revisions claiming that the revised rule was an unfunded mandate, it violated state tax laws, and it was not economically feasible, among other things.<sup>57</sup> The court ultimately upheld the Michigan LCR, disposing of every claim.<sup>58</sup> Advocates celebrated the court ruling, noting that the revised rule was “critical to securing safe drinking water for communities across the state and ensuring that a disaster like the Flint water crisis never happens again.”<sup>59</sup> With this revised rule and successful court defense, Michigan became the first state to require the replacement of all LSLs. This encouraged other states to take the same proactive measures.

### C. *Illinois Lead Service Line Replacement and Notification Act*

As noted, Illinois has the most LSLs in the country. Strikingly, a study revealed that “people of color in Illinois are up to twice as likely as White Illinoisans to live in the communities where almost all of Illinois’ lead service lines are located.” 65 percent of Black and Latinx residents live in communities with the most LSLs compared to 30 percent of White Illinoisans.<sup>60</sup> After witnessing numerous crises around the country disproportionately impacting communities of color, Illinois water justice advocates organized for action. In March 2021, the advocates introduced a bill in the Illinois State Legislature mandating removal of all LSLs and other protective measures.<sup>61</sup>

The bill passed with bipartisan support and was signed into law on August 27, 2021—making it the first state to *legislate* a mandate for LSLR. “The Illinois law contains the following key provisions:

- Mandates full LSLR by all water systems within a required timeframe based on the number of LSLs in their system;
- Bans partial LSLR: the dangerous practice of removing only the section from the water main<sup>62</sup> to the property line. This disrupts the

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57. See Leonard N. Fleming, *Coalition of Detroit Area Officials Sue State to Stop New Lead Rules*, THE DETROIT NEWS (Dec. 12, 2018), <https://www.detroitnews.com/story/news/2018/12/12/coalition-detroit-area-officials-sue-state-lead-rules/2279901002/>.

58. See generally Motion for Summary Disposition, *Oakland Cnty. Water Res. Comm’r v. Mich. Dep’t of Env’t Quality*, No. 18-00259-MZ (Mich. Ct. Cl. July 26, 2019), <https://www.nrdc.org/sites/default/files/oakland-order-granting-msd-20190726.pdf>.

59. *Michigan’s Lead Drinking Water Protections Survive Legal Challenge*, NAT. RES. DEF. COUNCIL (Jul. 26, 2019), <https://www.nrdc.org/press-releases/michigans-lead-drinking-water-protections-survive-legal-challenge-0>.

60. Justin Williams & Tara Jagadeesh, *Data Points: The Environmental Injustice of Lead Lines in Illinois*, METRO. PLAN. COUNCIL (Nov. 10, 2020), <https://metroplanning.org/data-points-the-environmental-injustice-of-lead-lines-in-illinois/>

61. Jeremy Orr, *Illinois Must Be a Leader on Lead Service Line Replacement*, NAT. RES. DEF. COUNCIL (Mar. 2, 2021), <https://www.nrdc.org/bio/jeremy-orr/illinois-must-be-leader-lead-service-line-replacement>.

62. Water main, Dictionary.Cambridge.org, <https://dictionary.cambridge.org/us/dictionary/english/water-main> (last visited Mar. 19 2024). A water main is the main underground pipe in a system of pipes supplying water to an area.

remaining portion of the service line and can result in significantly increased levels of lead contamination in drinking water.

- Requires water systems to submit an initial service line materials inventory to the state by April 15, 2023 and a final complete inventory by April 15, 2024;
- Requires water systems to submit an initial LSLR plan to the state by April 15, 2024, and an updated plan every April 15th for state review until a final comprehensive plan is submitted by April 15, 2027;
- Creates the Lead Service Line Replacement Fund which is dedicated exclusively to fund water systems' work of identifying and replacing LSLs;
- Water systems will be required to identify and replace LSLs during the water main replacements process beginning January 1, 2022;
- Creates the Lead Service Line Replacement Advisory Board: a multi-sector stakeholder body that will advise the state on best practices in LSLR and implementation and integration of the state's LSLR goals;
- Establishes a statewide low-income water assistance program: low-income Illinois residents can apply to the program for monetary assistance to help ensure water access."<sup>63</sup>

Different sectors and political ideologies celebrated the Illinois law as it accounted for a large variety of stakeholders' needs.<sup>64</sup> Widespread support for safe drinking water access kept growing, leading New Jersey to enact similar legislation. The federal government began feeling pressure to meaningfully reform the federal LCR. However, federal LCR reforms depend on the presidential administrations and how far they are willing to go to protect public health.

#### *D. 2021 Proposed Revisions to the Federal Lead and Copper Rule & Lawsuit*

On January 15, 2021, in the waning days of the Trump Administration, EPA introduced the first long-term federal Lead and Copper Rule Revisions (LCRR) since its introduction thirty years prior.<sup>65</sup> On January 15, 2021, a coalition of environmental organizations, communities groups, and ten states sued EPA in

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63. Jeremy Orr, *Illinois Governor Signs Lead Service Line Bill into Law*, NATURAL RESOURCE DEFENSE COUNCIL (Sep. 2, 2021), <https://www.nrdc.org/bio/jeremy-orr/illinois-governor-signs-lead-service-line-bill-law>.

64. *Press Release: Illinois Gov. JB Pritzker Signs Bill to Replace Toxic Lead Service Lines*, ILLINOIS ENVIRONMENTAL COUNCIL (Aug. 30, 2021), <https://ilenviro.org/illinois-gov-jb-pritzker-signs-bill-to-replace-toxic-lead-service-lines/>.

65. *Ground Water and Drinking Water: Proposed Lead and Copper Rule Improvements*, EPA (Dec. 7, 2023), <https://www.epa.gov/ground-water-and-drinking-water/proposed-lead-and-copper-rule-improvements>.

federal court over those revisions.<sup>66</sup> The lawsuit alleged that EPA violated the anti-backsliding provision of SDWA, which ensures that rules are changed to become *more* protective, not *less* protective.<sup>67</sup>

The Trump LCRR almost certainly would have resulted in weakened and status quo protections. First, the LCRR maintained the arbitrary LAL of fifteen ppb and implemented a non-enforceable trigger level of ten ppb.<sup>68</sup> This was confusing because: 1) it acknowledged that a lower LAL was feasible but they did not want to enforce it and 2) the trigger level would merely *encourage* water systems to fix issues but not mandate it. Second, it weakened the mandated LSLR rate for water systems unable to attain compliance.<sup>69</sup> The existing replacement rate was 7 percent per year, a total of fourteen years. These revisions changed the rate to 3 percent per year, giving water systems thirty-three years. This obvious rollback of protections would expose communities to lead for longer periods of time. Lastly, it proposed a “find-and-fix” provision which meant water systems had to identify and fix the source of lead contamination in impacted areas.<sup>70</sup> Although seemingly helpful, this provision actually weakened the requirements for urgent mitigation and risk reduction for corrosion control and sampling in non-compliant water systems.

The lawsuit called for a pause in the LCRR’s implementation. And with President-elect Joseph Biden taking office in a matter of days, the coalition directed a public statement to the incoming Administration, detailing “options to consider before implementing the [Trump EPA’s LCRR], including:

- (1) Hold public hearings with environmental justice and impacted communities to consider their input and chart a path forward to increase protections against lead in drinking water. The Safe Drinking Water Act required hearings to be held prior to issuing the rule, but the Trump EPA ignored this legal mandate.
- (2) Follow the science by setting a new drinking water standard based on updated studies that will ensure every person served by a water system has lead-safe drinking water.
- (3) Expedite replacement of every LSL in every community across the country. EPA should require this by rule, but Congress also should swiftly step in.”<sup>71</sup>

The lawsuit continued with the Biden Administration as the defendant, with good faith negotiations working towards a resolution.<sup>72</sup> On December 9, 2022,

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66. *Press Release: NRDC Sues EPA Over Rules Allowing Another Generation of Children to Drink Tainted Water From Lead Pipes*, NAT. RES. DEF. COUNCIL (Jan. 15, 2021), <https://www.nrdc.org/press-releases/nrdc-sues-epa-over-rules-allowing-another-generation-children-drink-tainted-water>.

67. *See* 42 U.S.C. §300g-1(b)(9).

68. *See LCR Proposal Summary and Key Improvements*, EPA (Oct. 2019), [https://www.epa.gov/sites/default/files/2019-10/documents/lcr\\_proposal\\_vs.\\_current\\_chart\\_draft.pdf](https://www.epa.gov/sites/default/files/2019-10/documents/lcr_proposal_vs._current_chart_draft.pdf).

69. *See id.* [68].

70. *Id.* [68].

71. Natural Resources Defense Council, *supra* note 66.

72. *See* Margie Kelly, *Press Release: EPA Will No Longer Defend Weak Trump Administration Drinking Water Rule in Court, Expected to Strengthen Lead in Tap Water Health Protections*, NAT. RES.

EPA informed the court that it would no longer defend the Trump Administration LCRR but rather reopen the rule-making process to propose its own LCR revisions.<sup>73</sup> Significant federal actions would also precede the Biden Administration's proposed revisions.

*E. Federal Funding and Action Under the Biden Administration*

Under the Biden Administration, the federal government has made historic investments in America's water infrastructure with a particular focus on reducing lead exposure. The American Rescue Plan Act allocated \$350 billion in its State and Local Recovery Fund that can be accessed for LSLR.<sup>74</sup> Over twenty billion dollars has been used for water infrastructure upgrades as of 2023. The Bipartisan Infrastructure Law (BIL) allocated fifteen billion dollars for LSLR.<sup>75</sup> Both allocations supplemented the \$11.7 billion for the existing Drinking Water State Revolving Fund—a financial assistance program that helps states achieve the SDWA's health protection objectives, including LSLR.<sup>76</sup> Two new EPA initiatives followed the American Rescue Plan and BIL investments.

On January 27, 2023, EPA launched the Lead Service Line Replacement Accelerators Initiative.<sup>77</sup> In partnership with the Department of Labor and forty local communities across the country, the Initiative provides “targeted technical assistance services to help underserved communities access funds from President Biden's [BIL] and replace lead pipes . . .”<sup>78</sup> As part of this initiative, EPA provides “support in developing [LSLR] plans, conducting inventories to identify lead pipes, increasing community outreach and education efforts, and supporting applications for [BIL] funding.” The goal is to ensure under-resourced communities have fair and equitable access to funding to increase the rate of [LSLR].<sup>79</sup>

EPA built on their Accelerators Initiative with the launch of the Get the Lead Out Initiative (GLO Initiative) on November 7, 2023.<sup>80</sup> In the announcement, EPA stated that:

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DEF. COUNCIL (Dec. 9, 2022), <https://www.nrdc.org/press-releases/epa-will-no-longer-defend-weak-trump-administration-drinking-water-rule-court>.

73. *Id.* [72].

74. U.S. Department of the Treasury, *Coronavirus State & Local Fiscal Recovery Funds: Overview of the Interim Final Rule* (August 2023), at 1, 16, <https://home.treasury.gov/system/files/136/Overview-of-the-2023-Interim-Final-Rule.pdf>.

75. Kyle R. Fischer et al., *United States' Infrastructure Bill Contains Hidden \$15 Billion Investment in Violence Prevention: Lead Abatement*, FRONTIERS IN PUBLIC HEALTH no. 885460, July 2022, at 10, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9301236/>.

76. 42 U.S.C. §300j-12.

77. *EPA Launches New Initiative to Accelerate Lead Pipe Replacement to Protect Underserved Communities*, EPA (Jan. 27, 2023), <https://www.epa.gov/newsreleases/epa-launches-new-initiative-accelerate-lead-pipe-replacement-protect-underserved>.

78. *Id.* [77].

79. *Id.* [77].

80. *Biden-Harris Administration Announces New Get the Lead Out Initiative to Accelerate Removal of Lead Service Lines Nationwide as Part of Investing in America Agenda*, EPA (Nov. 7, 2023),

“Through the GLO initiative... EPA will partner with 200 underserved communities nationwide to provide the technical assistance they need to identify and remove [LSLs]... EPA will help communities remove the barriers to lead pipe removal. GLO will specifically help participating communities identify [LSLs], develop replacement plans, and apply for funding to get the lead out.”<sup>81</sup>

While both initiatives will advance the removal of LSLs from public water systems, they are optional programs that encourage but do not mandate proactive LSLR. What is most needed is a legal mandate that truly *gets the lead out*. That mandate was proposed in November 2023.

### III. INTO UNCHARTED WATERS: NAVIGATING PROPOSED LEAD RULES FOR A SAFER TOMORROW

#### A. 2023 Proposed Improvements to the Federal Lead and Copper Rule

On November 30, 2023, EPA announced proposed federal Lead and Copper Rule Improvements (LCRI).<sup>82</sup> The LCRI is 622 pages and detailed what EPA considers “a major advancement in protecting children and adults from these significant, and irreversible, health effects from being exposed to lead in drinking water.”<sup>83</sup> There are five *major advancements* that improve the original 1991 LCR and the 2021 Trump LCRR.

First, the LCRI mandates LSLR nationwide within ten years.<sup>84</sup> This acknowledges that lead pipes are the greatest source for lead exposure in our water. While there are ways to limit lead exposure, LSLR is the only way to remove lead completely.

Second, the LAL is lowered from fifteen ppb to ten ppb.<sup>85</sup> No level of lead is safe for human consumption, but this moves us closer to a health-based standard and requires mitigation tactics sooner.

Third, tap water sampling requires testing both the first and the fifth liter samples.<sup>86</sup> This mirrors the revised Michigan LCR, allowing for more accurate sampling. The sample with the highest lead value will be used.

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<https://www.epa.gov/newsreleases/biden-harris-administration-announces-new-get-lead-out-initiative-accelerate-removal>.

81. *Id.* [80].

82. *Biden-Harris Administration Proposes to Strengthen the Lead and Copper Rule to Protect all Communities in America from Lead in Drinking Water*, EPA (Nov. 30, 2023), <https://www.epa.gov/newsreleases/biden-harris-administration-proposes-strengthen-lead-and-copper-rule-protect-all>.

83. *Id.* [82].

84. National Primary Drinking Water Regulations for Lead and Copper: Improvements (LCRI), 88 Fed. Reg. 110, 84878, 84882 (Dec. 6, 2023) (to be codified in 40 C.F.R. Parts 141 and 142), <https://www.govinfo.gov/content/pkg/FR-2023-12-06/pdf/2023-26148.pdf>.

85. *See id.* [84] at 84939.

86. *Id.* [84] at 84880.

Fourth, water systems are required to submit an initial service line inventory by October 2024,<sup>87</sup> update this inventory on a regular basis, and publicize their inventory and LSLR plans. Because transparency is lacking in water regulations, this change would give the public better access to information so they can understand what is happening in their communities.

Fifth, water systems with multiple LAL exceedances are required to engage in supply certified lead-reducing faucet filters to consumers.<sup>88</sup> This requirement is critical. While communities wait to have their pipes replaced, they should still be informed about lead's dangers and given the opportunity to protect themselves from harm.

Collectively, these proposed changes represent a more comprehensive approach to reducing lead in water by prioritizing public health, enhancing transparency, and empowering people to protect themselves—marking significant progress towards safer drinking water for all nationwide.

#### CLEAR WATERS AHEAD: CONCLUDING REFLECTION ON LEAD IN DRINKING WATER REFORM

Just days after the state of emergency was declared in Flint, I found myself on the receiving end of a phone call from EPA. They were seeking my assistance in responding to the unfolding crisis. It was not a mere professional duty though; it was deeply personal for me. With loved ones directly affected, I dove headfirst into a twelve-month collaboration with EPA, focusing on community engagement and support.

Throughout that period, I realized that Flint was just one of numerous cities around the country grappling with the enduring repercussions of the toxic legacy of lead water infrastructure. This realization fueled my passion and subsequent vision for addressing our nation's problem. My vision of what must happen to ensure a lead-free future has remained clear ever since: a lower LAL that aligns more closely with health-based standards, mandating water systems to conduct thorough inventories for identifying LSLs, and, most importantly, implementing a nationwide LSLR mandate.<sup>89</sup>

I am encouraged by the reforms proposed by the Lead and Copper Rule improvements, as they resonate with my own long-standing convictions. The LCRI's implications cannot be understated, as EPA is saying that we can eradicate lead from our water within the next decade. But we must first ensure the LCRI is finalized with these improvements intact. That requires engaging in the rule-making process. Before finalizing a rule, a proposed rule is published for public notice, inviting feedback through verbal and written comments. Stakeholder engagement is crucial in shaping improvements to the final rule. The LCRI presents an opportunity for truly transformative change, granting legal

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87. *Id.* [84] at 85036.

88. *Id.* [84] at 84947.

89. Arielle Duhaime-Ross & Vice News, *Poisoning America: The US' Lead Pipe Problem*, YOUTUBE, at 11:11 (Jun. 24, 2021), <https://youtu.be/tbRB1kvmd0U?si=tSDTQ2KXNPW2BcZq&t=577>.



protections and tools to hold water systems accountable for ensuring safe water. It's imperative that we do not miss this opportunity to remove these lead pipes from the ground and relegate them to their rightful place—in the history books.<sup>90</sup>

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90. Elin Warn Betanzo, *Lead Water Service Lines Belong in the Hist. Books*, CRAIN'S CHICAGO BUS. (Apr. 01, 2021), <https://www.chicagobusiness.com/opinion/lead-water-service-lines-belong-history-books>.