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Restoring Control: Get Those Lead Pipes Outta Here

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Restoring Control: Get Those Lead Pipes Outta Here

TABLE OF CONTENTS

Introduction	703
I. Background	705
A. Flint, Michigan Water Crisis	705
B. Safe Drinking Water Act	707
C. Lead and Copper Rule	708
1. Corrosion Control, Source Water Treatment, and Public Notice	709
2. Lead Service Line Replacement.....	710
II. So What’s the Big Deal About Partial Lead Service Line Replacements and How Are the Issues Resolved?.....	711
A. Battle of the Lead and Copper Rule.....	711
1. The Original 1991 Lead and Copper Rule	712
2. 2000 Revision: A Presumption, a Lawsuit, and a New Approach.....	712
3. Minor Revisions to LCR	714
B. Failures of the Current Lead and Copper Rule	715
1. Public Health Implications	715
2. Let’s be Clear: Flint Is Not an Anomaly	717
3. Environmental Justice: What about the Poor and Renters?.....	718
C. All or Nothing: Full Lead Service Line Replacement	720
D. Could Redefining “Control” be the Solution?	724
1. Legal Authorization with Consent	725
2. Legal Authorization without Consent	726
E. Who Foots the Bill?	727
Conclusion.....	728

INTRODUCTION

Imagine starting your morning by sipping your favorite Frappuccino through a half-clean and half-poisonous straw. This is essentially what communities all over the nation face every morning while consuming their drinking water. The Environmental Protection Agency’s (EPA) current Lead and Copper Rule authorizes public water system consumers to potentially receive drinking water that flows through half-clean and half-

lead filled pipes.¹ Although the federal regulation was enacted to prevent water crises like that in Flint, Michigan, the Lead and Copper Rule does not fully protect the public from lead exposure in our drinking water.

Lead service lines are often partially owned by private homeowners.² The current Lead and Copper Rule (LCR) mandates that public water systems are required to replace only portions of the lead service line that they own.³ If a homeowner does not replace their portion of the pipe, due to either their inability to pay or ineffective utility education, then the public water system will replace only the portion of the pipe that runs from the water main in the street to the curb.⁴ The new portion of the line, which is usually made of copper, is then reconnected to the remaining old lead pipe that runs to the house.⁵ Partial replacement of lead service lines results in short-term increased lead levels and does not effectively reduce lead levels in drinking water.⁶

This Comment will address the need for full lead service line replacement and how this can be implemented through a revision of the LCR⁷ under the Safe Drinking Water Act (SDWA).⁸ Three components of full lead service line replacement will be addressed in this Comment: the character of the problem, the need for legal authorization, and the economic complications. This Comment is divided into five parts. The first part of this Comment covers the history of the LCR by highlighting the revisions that led to the current issue of partial lead service line replacements. The second part critically examines the negative ramifications of the current rule by discussing the negative impact of

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1. 40 C.F.R. §§ 141.80–141.91 (2018).

2. Ownership depends on local private property laws. See Tiffany Stecker, *Federal Law Makes Lead-Pipe Removal Anything but a Cinch*, E&E NEWS (July 7, 2016), <https://www.eenews.net/stories/1060039790> [<https://perma.cc/3L3L-84TQ>].

3. See 40 C.F.R. § 141.84(d) (2018).

4. 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> [<https://perma.cc/6QXG-TJYU>].

5. *Id.*

6. Letter from Dr. Deborah L. Swackhamer, Chair, EPA Science Advisory Board, and Dr. Jeffrey K. Griffiths, Chair, SAB Drinking Water Committee, to Lisa P. Jackson, Administrator, U.S. Environmental Protection Agency (Sept. 28, 2011), https://www.epa.gov/sites/production/files/2015-09/documents/sab_evaluation_partial_lead_service_lines_epa-sab-11-015.pdf [<https://perma.cc/DQ7N-SPCC>].

7. 40 C.F.R. §§ 141.80–141.91 (2018).

8. Safe Drinking Water Act, 42 U.S.C. §§ 300f–300j (2012).

partial lead service line replacements and the underlying environmental justice issues. The third part focuses on the need for full lead service line replacements.

A revision to the LCR that requires full lead service line replacements has been taken under advisement by the EPA. This Comment discusses some of the legal arguments raised in opposition to full lead service line replacements. The fourth part analyzes whether restoring the broad definition of “control” from the 1991 LCR in place of the current “ownership” approach facilitates full lead service line replacement. Many have argued that this could potentially violate private property rights, an objection this Comment explores by examining possible options for legal authorization to replace the private portion of the lead service line. The final part of this Comment examines the economic issues associated with full lead service line replacements, as well as the applicability of innovative full lead service line programs implemented by other cities to address cost issues.

I. BACKGROUND

A series of governmental failures caused the contamination of the Flint water supply, including enforcement of the SDWA and the LCR.⁹

A. *Flint, Michigan Water Crisis*

Flint, Michigan, became the poster child for the United States’ aging infrastructure and water contamination. The story of the water crisis in Flint shocked the nation, as many realized the massive public health crisis that Flint’s citizens faced.¹⁰ It became national news that the city’s water tested positive for high levels of lead.¹¹ The issue arose after Flint switched its water source from the Detroit Water & Sewerage Department (DWSD) to the Flint River in an effort to save money.¹² Flint was in a state-ordered and controlled emergency financial management program since 2011 due to a decline in population and jobs. While Flint joined a new, regional

9. Jim Shelson, *Lead in the Water – The Flint Water Crisis*, 83 DEF. COUNSEL J. 520, 520-21 (2016).

10. Sebastien Blanc, *Flint, a Poster Child of US Environmental Racism?*, TERRADAILY (Mar. 7, 2016), http://www.terradaily.com/reports/Flint_a_poster_child_of_US_environmental_racism_999.html [<https://perma.cc/89J8-RH84>].

11. Sara Ganim & Linh Tran, *How Tap Water Became Toxic in Flint, Michigan*, CNN (Jan. 13, 2016), <https://www.cnn.com/2016/01/11/health/toxic-tap-water-flint-michigan/index.html> [<https://perma.cc/S727-APUR>].

12. Shelson, *supra* note 9, at 521.

water system that drew water from Lake Huron, this system was not yet built.¹³ To avoid the expensive costs of purchasing water from the DWSD, the city decided to use the Flint River as an interim source of water.¹⁴ Flint's contract with DWSD terminated, and the City began distributing water from the Flint River to its residents in April 2014.¹⁵

The Michigan Department of Environmental Quality incorrectly determined that the water did not have to be immediately treated with corrosion control, which led to the contamination of the water system.¹⁶ Water from the Flint River was more corrosive to iron and lead, which made up the pipes used throughout Flint, than the Detroit water. The water in Flint was not properly treated and lacked phosphate, which prevents corrosion. Lead is released into drinking water when it leaches from lead pipes or solder because of the chemical makeup of the water flowing through it.¹⁷ Lead leached into Flint's drinking water due to the aging pipes being corroded.¹⁸

Residents almost immediately began complaining about the water's smell and taste. Many residents stated that it was causing rashes, hair loss, and other health problems.¹⁹ The city assured residents that the water was safe and met all drinking water standards.²⁰ But then, in August 2014, *E.coli* and *total coliform* bacteria were detected in Flint's water, causing the city to issue two water boil advisories.²¹ General Motors Plant stopped using water from the Flint River due to suspicions that the water was eroding engine parts at its factory less than a month later.²² In 2015, Flint violated the SDWA due to the level of total trihalomethanes in the city's

13. *Id.*

14. Michael Torrice, *How Lead Ended Up in Flint's Tap Water*, 23 ANALYST 34, 35 (2016).

15. Shelson, *supra* note 9, at 520–21.

16. *Id.*

17. Brie D. Sherwin, *Pride and Prejudice and Administrative Zombies: How Economic Woes, Outdated Environmental Regulations, and State Exceptionalism Failed Flint, Michigan*, 88 U. COLO. L. REV. 653, 673 (2017).

18. Shelson, *supra* note 9, at 520–21.

19. Libby Nelson, *Flint, Michigan, Tried to Save Money on Water. Now Its Children Have Lead Poisoning.*, VOX (Jan. 19, 2016, 11:00 PM), <https://www.vox.com/2015/12/15/10237054/flint-lead-poisoning> [<https://perma.cc/J5HB-K6BK>].

20. *Id.*

21. Merrit Kennedy, *Lead-Laced Water in Flint: A Step-By-Step Look at The Makings of a Crisis*, NPR (Apr. 20, 2016, 6:39 PM), <https://www.npr.org/sections/thetwo-way/2016/04/20/465545378/lead-laced-water-in-flint-a-step-by-step-look-at-the-makings-of-a-crisis> [<https://perma.cc/E6V5-ZUVX>].

22. Kyle J. Conway, *There's Something in the Water: How Apathetic State Officials Let the People of Flint, Michigan Down*, 29 VILL. ENVTL. L.J. 57, 61 (2018).

water.²³ Tests conducted by a team from Virginia Tech revealed high levels of lead content in the city's water, and a study from the local Hurley Medical Center found elevated blood levels in children age five and under. On October 16, 2015, Flint switched back to the Detroit water supply, but the damage was already done.²⁴ The water contamination in Flint poses the question: What regulations are in place to protect citizens from crises like this?

B. Safe Drinking Water Act

In 1974, Congress enacted the Safe Drinking Water Act (SDWA) to protect public health and public water supplies from harmful contaminants.²⁵ The SDWA authorizes the Environmental Protection Agency (EPA) to set national standards for drinking water to protect against health effects from exposure to naturally-occurring and man-made contaminants.²⁶ Whenever a national primary drinking water regulation is proposed, a maximum contaminant level goal must be proposed simultaneously.²⁷ To ensure the quality of America's drinking water, the SDWA requires owners and operators of public drinking water systems²⁸ to monitor water for contaminants, treat their water to control those contaminants, and provide notice of any action taken to residents who receive the water.²⁹

Regulation of contaminants known or substantially likely to occur in public water systems provide a meaningful opportunity to reduce adverse effects on the health of persons served by these public water systems.³⁰ There have been several amendments to the SDWA aimed at reducing lead in drinking water. In 1986, Congress amended the SDWA to ban the new installation of lead pipes in public water systems and residential housing.³¹

23. Kennedy, *supra* note 21.

24. *Id.*

25. Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j (2012).

26. 42 U.S.C. § 300g-1 (2012).

27. *Id.* A "maximum contaminant level goal" means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. 42 U.S.C. § 300f(3) (2012).

28. A public water system means, "A system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals." 42 U.S.C. § 300f (2012).

29. Sherwin, *supra* note 17, at 688.

30. See 42 U.S.C. § 300g-1(b)(1) (2012).

31. Conway, *supra* note 22, at 65 (citing 40 C.F.R. § 141.84 (2018)) (Materials were considered "lead free" if their solder and flux didn't contain more

The EPA sought to further improve the implementation of drinking water standards designed to protect the public health by enacting its 1991 LCR.³²

C. Lead and Copper Rule

The EPA adopted the Lead and Copper Rule (LCR)³³ to prevent the exact crisis that Flint faced—the leaching of lead from lead pipes and lead solder.³⁴ Under the SDWA, public water systems must control lead through regulations implemented under the LCR. The LCR mandates that all water systems serving more than 50,000 people must either treat their water to optimize corrosion control or demonstrate that they do not need to do so because their water is not corrosive and there are not any lead issues.³⁵ The water system must take measures to reduce the amount of lead leaching into the water if more than ten percent of the tested taps contain lead above the action level³⁶ of 15 parts per billion (ppb).³⁷ According to the EPA, “If the action level for lead is exceeded, the system must also inform the public about steps they should take to protect their health and may have to replace lead service lines under their control.”³⁸ However, being that there is no safe level of lead in drinking water, the

than 0.2% of lead and the pipes, pipe fittings, plumbing, and fixtures contained less than 0.25 of lead.)

32. Sherwin, *supra* note 17, at 689.

33. 40 C.F.R. § 141.80 (2018).

34. See Sherwin, *supra* note 17, at 689.

35. The LCR is known as the “treatment technique rule.” The systems are required to monitor drinking water at customers’ taps and treat water to prevent corrosion and resulting leaching of lead from pipes. See *Lead and Copper Rule*, ENVTL. PROTECTION AGENCY, <https://www.epa.gov/dwreginfo/lead-and-copper-rule> [<https://perma.cc/N3ZR-SE4V>] (last visited Nov. 3, 2019) [hereinafter *Lead and Copper Rule*].

36. Action level is defined as: “The concentration of lead or copper in tap water which determines whether a system may be required to install corrosion control treatment, collect water quality parameter samples, collect lead and copper source water samples, replace lead service lines, and/or deliver public education about lead.” ENVTL. PROT. AGENCY, LEAD AND COPPER RULE: SUMMARY OF REVISIONS 2 (2000), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1005884.txt> [<https://perma.cc/6PJY-LSNF>].

37. 40 C.F.R. § 141.80(c)(1) (2018). Ppb is an acronym for parts per billion, which equates to .001 mg/L. See Terrie K. Boguski, *Understanding Units of Measurement*, ENVTL. SCI. & TECH. BRIEFS FOR CITIZENS, Oct. 2006, at 1–2, <https://www.engg.ksu.edu/CHSR/outreach/resources/docs/2UnitsofMeasure022508.pdf> [<https://perma.cc/K8JV-EN8M>].

38. *Lead and Copper Rule*, *supra* note 35.

LCR set the maximum contaminant level goals at zero.³⁹ The LCR targets lead contamination in four principal ways: corrosion control treatment, source water treatment, lead service line replacement, and public education.⁴⁰

1. Corrosion Control, Source Water Treatment, and Public Notice

Corrosion control is a fundamental aspect of the LCR. The LCR sets forth optimal corrosion control treatment requirements that all water systems must implement.⁴¹ Optimal corrosion control treatment involves the public water system evaluating the effectiveness of: (1) alkalinity and PH adjustment; (2) calcium hardness adjustment; and (3) the addition of a phosphate or silicate-based corrosion inhibitor.⁴² Adding chemicals like phosphates to the water form a protective coating inside the pipes.⁴³ However, this protective coating takes many years to form and is destroyed by highly corrosive, untreated water flowing through the pipes.⁴⁴ Destruction of this coating allows lead to leach into the drinking water.⁴⁵ After implementation of a corrosion control treatment program, the system must continue to operate and maintain the optimal corrosion control treatment, as well as set water quality parameters.⁴⁶ Flint did not comply with these requirements after switching to the Flint River as its water source.⁴⁷ Flint did not implement a corrosion control program, nor did the city set any water quality parameters.⁴⁸ As a result, after the switch

39. ENVTL. PROT. AGENCY, LEAD AND COPPER RULE REVISIONS WHITE PAPER 6 (2016) [hereinafter WHITE PAPER]. An “action level” is different from a maximum contaminant level goal (MCLG). The MCLG is the level at which no known or anticipated adverse health effects would occur. The LCR “action level” is used as a tool to determine when a system needs treatment to remedy high lead or copper concentrations that could be detrimental to public health. Sherwin, *supra* note 17, at 691.

40. 40 C.F.R. § 141.80(b) (2018).

41. 40 C.F.R. § 141.82 (2018).

42. 40 C.F.R. § 141.82(c)(1) (2018).

43. Sherwin, *supra* note 17, at 691.

44. *Id.*

45. *Id.*

46. 40 C.F.R. § 141.82(g) (2018).

47. Siddhartha Roy, *Commentary: MDEQ Mistakes and Deception Created the Flint Water Crisis*, FLINT WATER STUDY (Sept. 30, 2015), <http://flintwaterstudy.org/2015/09/commentary-mdeq-mistakes-deception-flint-water-crisis/> [<https://perma.cc/6EJ5-A3FQ>].

48. *Id.*

to the Flint River, Flint residents were unprotected from the elevated lead in water.⁴⁹

Not only are water systems required to monitor and treat water at the “tap,” they are also required to monitor lead levels at the “source.”⁵⁰ If a water system does not meet the action level on the basis of tap samples collected, then the water system is required to take samples from the “source,” which includes groundwater systems and surface water systems.⁵¹ The state is required to complete an evaluation to determine if it is necessary to treat the source water to minimize lead or copper levels in water delivered to the users’ taps.⁵²

Providing notice to the public of unsafe drinking water is also a key component of the LCR. The LCR requires that tap water test results be reported to the state agency and that consumer notices are provided when individual testing is performed on tap water samples collected from homes.⁵³ The LCR mandates that public education materials be provided in this notice, which includes information on health impacts of lead and how it gets into drinking water.⁵⁴ It must also include steps that individuals can take to reduce lead exposure. This is yet another requirement of the LCR that Flint officials failed to implement.⁵⁵ Michigan governmental agencies failed to provide adequate notice and education to the citizens of Flint.

2. Lead Service Line Replacement

The LCR requires that a water system replace the lead service line⁵⁶ if the water system fails to meet the lead action level in tap samples after installing corrosion control or source water treatment.⁵⁷ According to the LCR, “A water system must replace annually at least seven percent of the

49. *Id.*

50. See 40 C.F.R. § 141.88 (2018). See also 40 C.F.R. § 141.83 (2018).

51. 40 C.F.R. § 141.88 (2018).

52. 40 C.F.R. § 141.83(b) (2018).

53. 40 C.F.R. § 141.85 (2018). The LCR mandates what public education materials must be included in this notice.

54. CLEAN WATER ACTION, <https://www.cleanwateraction.org/features/background-federal-regulation-lead-drinking-water> [<https://perma.cc/F65P-H8GU>] (last visited Nov. 11, 2019).

55. Sherwin, *supra* note 17, at 696.

56. Lead service line is defined as, “a service line made of lead which connects the water main to the building inlet. It also includes any lead pigtail, gooseneck, or other fitting which is connected to the lead service line.” ENVTL. PROT. AGENCY, *supra* note 36.

57. 40 C.F.R. § 141.84(a) (2018).

initial number of lead service lines in its distribution system,” and must identify the number of lead lines in place at the time of the replacement program.⁵⁸ Water systems are only required to replace the portion of the lead service line that they own.⁵⁹ If the system does not own the entire lead service line, then the owner of the line must be provided notice and the system shall offer to replace the owner’s portion of the line.⁶⁰ The system is not required to pay for replacing the privately-owned portion of the line. This is a primary issue with the current LCR. The “ownership” approach to lead service line replacement has resulted in partial lead service line replacements, which are problematic. This Comment focuses on the lead service line replacement requirement of the LCR and ways to address the issues resulting from partial replacements.

II. SO WHAT’S THE BIG DEAL ABOUT PARTIAL LEAD SERVICE LINE REPLACEMENTS AND HOW ARE THE ISSUES RESOLVED?

A. Battle of the Lead and Copper Rule

The LCR has faced much criticism over the years. Critics have argued that gaps in the rule allowed for the “gaming of compliance” by utilities, such as “pre-flushing” water lines before taking the sample, which temporarily lowers lead levels, and testing where they know there is not a problem, rather than focusing on testing residences with the highest risk of lead contamination.⁶¹ Although the rule has faced minor revisions over the years, many still believe that the LCR is outdated and needs significant revisions to the lead action level, drinking water testing, lead service line replacement, and transparency and education requirements.⁶²

58. 40 C.F.R. § 141.84(b) (2018).

59. 40 C.F.R. § 141.84(d) (2018).

60. *Id.*

61. Brady Dennis, *The EPA’s Lead-in-Water Rule Has Been Faulted for Decades. Will Flint Hasten a Change?*, WASH. POST (May 5, 2016), https://www.washingtonpost.com/national/health-science/epas-lead-in-water-rule-has-been-faulted-for-decades-will-flint-hasten-a-change/2016/05/04/8d25bb12-0de9-11e6-bfa1-4efa856caf2a_story.html?utm_term=.64901816bf94 [<https://perma.cc/JV4P-7JMT>].

62. Sarah Okeson, *Hey, EPA, Get the Lead Out!*, D.C. REPORT, <https://www.dcreport.org/2017/08/24/hey-epa-get-the-lead-out/> [<https://perma.cc/YLV6-9BZP>] (last visited Nov. 14, 2019); DAN KILDEE HOUSE OF REPS., <https://dankildee.house.gov/media/press-releases/congressman-dan-kildee-re-introduces-legislation-strengthen-and-update-lead-and> [<https://perma.cc/BRU6-HFNG>] (last visited Nov. 14, 2019).

1. *The Original 1991 Lead and Copper Rule*

The 1991 Lead and Copper Rule (LCR) was adopted to minimize lead and copper exposure at the tap.⁶³ The 1991 LCR included a provision mandating the replacement of lead service pipes if corrosion control did not bring the water into compliance with the action level of lead.⁶⁴ However, the 1991 rule differed from the current rule as to what extent of the lead service line the public water system was required to replace.⁶⁵ Originally, the rule stated that public water systems were responsible for the portion of the line that was under the system's control. The system was required to notify the user served by the line that it would replace the portion of the line under its control and offer to replace the building owner's portion.⁶⁶ A system was presumed to control the entire lead service line (up to the building inlet) unless the system could demonstrate to the state that it did not have any of the following forms of control over the line: authority to set standards for construction, repair, or maintenance of the line; authority to replace, repair, or maintain the service line; or ownership of the service line.⁶⁷ The State was to review the information and determine whether the system controlled less than the full service line and determine the extent of the system's control.⁶⁸

2. *2000 Revision: A Presumption, a Lawsuit, and a New Approach*

The "control" approach to lead service line replacement has nonetheless faced opposition. In 1994, the Environmental Protection Agency (EPA) was sued by the American Water Works Association (AWWA) over this broad "control" approach.⁶⁹ The final rule of the 1991 LCR established a presumption that the public water system controlled every service line up to the wall of the building it served and could be

63. *Lead and Copper Rule*, *supra* note 35.

64. ENVTL. PROT. AGENCY, *supra* note 36.

65. *Id.*

66. *Id.*

67. *Id.*

68. *Id.*

69. *Am. Water Works Ass'n v. E.P.A.*, 40 F.3d 1266 (D.C. Cir. 1994). The rule originally said that public water systems were responsible for pipes that they control, not just the pipes that they own. Lindsey Smith, *EPA Regional Administrator Says "Tweaks" to Lead and Copper Rule Alone Won't Fix Problems*, MICH. RADIO (Mar. 9, 2017), <http://www.michiganradio.org/post/epa-regional-administrator-says-tweaks-lead-and-copper-rule-alone-won-t-fix-problems> [<https://perma.cc/JZ8Y-YK M9>].

rebutted by demonstrating that its control was limited by state statute, local ordinance, public service contract, or other legal authority.⁷⁰ The AWWA raised three other issues, but this Comment will only address the challenges regarding the lead service line replacement.

The AWWA argued that the definition of “control” in the final rule was not included in the proposed rule; therefore, the public did not have notice or an opportunity to comment upon it.⁷¹ The EPA argued that it stated in its notice of proposed rulemaking that it was considering adopting a lead service line replacement requirement under this rebuttable presumption, and the agency’s definition of control in the final rule was spelled out in slightly more precise terms than discussed in the notice of proposed rulemaking.⁷²

The D.C. Circuit Court held that the AWWA could not have reasonably “anticipated the final rulemaking from the draft [rule],” because there was no indication that private ownership might not preclude a public water system from having “control” over a service line.⁷³ There was no indication in the notice that the EPA was contemplating that a public water system might be said to control a service line simply because it has the authority to set construction standards or to repair.⁷⁴ The court further reasoned that the EPA did not mention a recent Georgia case that interpreted the definition of a “public water system” as confining authority to the portions of the line not underlying the private property. The court held that under those circumstances, it was reasonable for the AWWA to believe that its control over a service line ends at the private property line.⁷⁵

The AWWA also contended that the EPA’s expansive definition of control extended beyond the agency’s authority under the SDWA, and the definition was impermissibly vague because it seemed to require water systems to enter private property without indicating if the regulation intended to create a right of entry.⁷⁶ The court vacated the rule for lack of public notice and did not bother addressing these substantive issues.⁷⁷

In the 2000 LCR revisions, the EPA addressed the issues arising from the legal challenges to the 1991 rule.⁷⁸ The EPA changed the “control”

70. *Am. Water Works Ass’n*, 40 F.3d at 1270.

71. *Id.* at 1274.

72. *Id.*

73. *Id.* at 1275.

74. *Id.*

75. *Id.*

76. *Id.*

77. *Id.*

78. *Lead and Copper Rule*, *supra* note 35.

approach to lead service line replacement.⁷⁹ In its place, an ownership rule was adopted, which put the cost on property owners.⁸⁰ The current version of the LCR requires the public water system to replace only the portion of the service line that it owns.⁸¹ If the system does not own the entire lead service line, then the system must notify the owner of the line that it will replace the portion that the system owns and offer to replace the owner's portion of the line.⁸² The system is not required to replace the line if the owner chooses not to pay the cost of replacing the privately-owned portion or if replacing the privately-owned portion of the line is precluded by state, local, or common law.⁸³ The 2000 revisions also made minor changes to public education, monitoring, reporting and record keeping, and optimal corrosion control requirements.⁸⁴ According to the EPA, the revisions are minor because they don't affect the lead and copper maximum contaminant level goals, action levels, or other basic regulatory requirements to monitor for lead and copper at the tap and to optimize corrosion control.⁸⁵

3. Minor Revisions to LCR

In 2004, there were additional minor revisions that reinstated text that was inadvertently dropped from the rule during the previous revisions.⁸⁶ The LCR undertook short term revisions that enhanced implementation of the rule in the areas of monitoring, treatment, customer awareness, and lead service line replacement.⁸⁷ The rule clarified language regarding the monitoring requirements and made it clear that all samples must be taken within the same calendar year.⁸⁸ The 2007 revisions changed the content

79. Stecker, *supra* note 2.

80. *Id.*

81. 40 C.F.R. § 141.84(d) (2007). This portion of the 2000 rule revision has not been changed.

82. *Id.*

83. *Id.*

84. ENVTL. PROT. AGENCY, LEAD AND COPPER RULE MINOR REVISIONS: FACT SHEET, (1999), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P10051YP.txt> [<https://perma.cc/LMB4-EUPM>] (last visited Nov. 3, 2019). The revisions streamlined and reduced monitoring and reporting requirements. *Lead and Copper Rule*, *supra* note 35.

85. ENVTL. PROT. AGENCY, *supra* note 36.

86. *Lead and Copper Rule*, *supra* note 35.

87. *Id.*

88. ENVTL. PROT. AGENCY, FACT SHEET: REVISIONS TO THE REGULATIONS CONTROLLING LEAD IN DRINKING WATER (2007), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=60000I0Q.txt> [<https://perma.cc/NMT2-8PYQ>].

of the public education materials that must be provided to customers and changed how and when the materials must be delivered.⁸⁹ In regard to lead service line replacement, the new rule required all previously “tested-out”⁹⁰ lines to be tested again or added back into the sampling pool and considered for replacement.⁹¹ The “ownership” approach to lead service line replacement remained intact.

B. Failures of the Current Lead and Copper Rule

The current “ownership” approach of the LCR inadequately protects citizens from lead exposure in drinking water and needs to be revised. Requiring public water systems to replace only the portion of the lead service line that they own is problematic because it sparks partial replacements.⁹² Lead service lines are often times partially owned by private homeowners.⁹³ Under the current rule, the public system is only required to replace the portion of the line that it owns, which usually runs from the water main to the property line.⁹⁴ If a homeowner is unwilling or unable to pay for replacing their portion of the service line, then a public water system can undertake a partial lead service line replacement of the portion of the line that it owns.⁹⁵

1. Public Health Implications

There are both public health and policy concerns with partial lead service line replacement. Partial lead service line replacements (PLSLRs) have been shown to cause spiked increases in lead levels.⁹⁶ In 2010, the

89. *Id.*

90. The previous rule allowed lines that had tested below the action level to be considered “replaced” for purposes of compliance. *Id.*

91. *Id.*

92. Partial replacement: This phrase refers to any lead service line replacement effort in which the system does not replace the entire length of a lead service line up to the building inlet. ENVTL. PROT. AGENCY, *supra* note 36.

93. Ownership depends on local private property laws. *See* Stecker, *supra* note 2.

94. WHITE PAPER, *supra* note 39, at 6.

95. Letter from Jennifer C. Chavez, Attorney, Earthjustice, to Environmental Protection Agency 5 (Nov. 11, 2014), https://www.eenews.net/assets/2016/06/30/document_daily_01.pdf [<https://perma.cc/5QYY-P4GY>].

96. ENVTL. PROT. AGENCY, SCI. ADVISORY BD., SAB EVALUATION OF THE EFFECTIVENESS OF PARTIAL LEAD SERVICE LINE REPLACEMENTS 10 (2011), https://www.epa.gov/sites/production/files/2015-09/documents/sab_evaluation_

EPA asked its Science Advisory Board (SAB) to evaluate current scientific data to determine the effectiveness of PLSLR in comparison to full line replacement.⁹⁷ Among the issues evaluated by SAB were the association between PLSLR and blood lead levels in children, lead tap water sampling data before and after PLSLR, and comparisons between partial and full lead service line replacement (LSLR).⁹⁸ SAB found that the quantity and quality of the available data was inadequate to fully determine the effectiveness of PLSLR in the reduction of lead concentration in drinking water.⁹⁹ However, using the small number of studies available, SAB concluded that “PLSLRs have not been shown to reliably reduce drinking water lead levels in the short term, ranging from days to months, and potentially even longer.”¹⁰⁰ Additionally, SAB found that PLSLRs are frequently associated with short-term elevated drinking water levels after replacement, which suggests harm rather than benefit during that time period.¹⁰¹

SAB evaluated a study from the Centers for Disease Control and Prevention (CDC), which examined associations between childhood blood lead levels and PLSLR.¹⁰² The results suggested that there was a potential for harm resulting from PLSLR and provided no evidence of childhood blood lead levels benefitting from PLSLR in the short term.¹⁰³ Several studies of tap water lead levels before and after PLSLR indicated that PLSLR causes tap water lead levels to increase for a period of days, weeks, or sometimes even months.¹⁰⁴ SAB concluded that unlike PLSLR, full LSLR appeared effective in achieving long-term reduction in water lead levels.¹⁰⁵ The available information led SAB to find that PLSLR may pose a risk to the population, due to the short-term elevation in drinking water lead concentrations.¹⁰⁶

Exposure to lead has detrimental effects to public health. There is no safe level of lead, and young children are particularly vulnerable to the

partial_lead_service_lines_epa-sab-11-015.pdf [<https://perma.cc/X2WN-49EW>]
[hereinafter SCI. ADVISORY BD.].

97. WHITE PAPER, *supra* note 39, at 8; Swackhamer, *supra* note 6, at 1.

98. Swackhamer, *supra* note 6, at 1–2.

99. *Id.* at 2.

100. SCI. ADVISORY BD., *supra* note 96, at 23.

101. *Id.*

102. Swackhamer, *supra* note 6, at 2.

103. *Id.*

104. *Id.*

105. *Id.*

106. *Id.* at 2–3.

toxic effects of lead.¹⁰⁷ High levels of lead exposure can affect the brain and central nervous system, causing comas, convulsions, or even death.¹⁰⁸ Children who survive severe lead poisoning may be left with behavioral and learning problems.¹⁰⁹ Even low exposures of lead can affect children's brain development and result in lower IQs, learning problems, and hypertension.¹¹⁰ Exposure to lead also causes long-term health effects in adults.¹¹¹ These long-term health effects include an increased risk of high blood pressure and kidney damage, as well as risk of miscarriage, stillbirth, or premature birth in pregnant women.¹¹²

2. *Let's be Clear: Flint Is Not an Anomaly*

It is important to note that Flint, Michigan, is not alone in the battle with unsafe drinking water. Cities all over the United States are battling with issues of contaminated water due to aging infrastructures made out of lead.¹¹³ A 1990 report from the American Water Works Association estimates that there are millions of lead service lines in the United States.¹¹⁴ In 2016, *USA Today* conducted an investigation that identified almost 2,000 additional water systems, spanning over all fifty states, experiencing excessive levels of lead contamination over the past four years.¹¹⁵ The water systems with lead levels exceeding the EPA's standards collectively supply water to six million people, which signifies the gravity of this issue.¹¹⁶

The Natural Resources Defense Council (NRDC) conducted an analysis of the EPA's data and found that 5,363 water systems, which provide water to more than eighteen million people, breached the LCR in

107. *Lead Poisoning and Health*, WORLD HEALTH ORG. (Aug. 23, 2019), <http://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health> [<https://perma.cc/A23H-WH4W>].

108. *Id.*

109. *Id.*

110. *Id.*

111. *Id.*

112. *Id.*

113. See Mark Nichols, *Beyond Flint: Excessive Lead Levels Found in Almost 2,000 Water Systems Across All 50 States*, USA TODAY (Mar. 11, 2016), <https://www.usatoday.com/story/news/2016/03/11/nearly-2000-water-systems-fail-lead-tests/81220466/> [<https://perma.cc/MD64-62DW>].

114. Torrice, *supra* note 14, at 37.

115. Nichols, *supra* note 113.

116. *Id.*

2015.¹¹⁷ These violations included failure to properly test the water for lead and failure to appropriately treat the water to prevent lead from leaching into the drinking supply.¹¹⁸ The NRDC also documented underreporting problems in the EPA's drinking water database.¹¹⁹ The NRDC called for a significant investment in national water infrastructure, which includes replacing the more than six million lead service lines nationwide, replacing or repairing decaying or outdated parts of distribution systems, and improving drinking water treatment plants.¹²⁰

3. *Environmental Justice: What about the Poor and Renters?*

In addition to the public health concerns associated with lead service lines, there is also an underlying issue of environmental discrimination at play within the current LCR. Environmental justice demonstrates the reality that vulnerable communities are subject to the disproportionate burden of pollution and contamination.¹²¹ Lead in drinking water disproportionately affects lower-income people who cannot afford to replace their private lead service lines.¹²² The NRDC noted that "low-income households and communities of color across the country are at the front lines of our national water crisis."¹²³ Older cities with high poverty rates, like Detroit and Flint, tend to have more lead pipes.¹²⁴ In 2017, the United States Census Bureau reported that the median income of a Flint resident is about \$26,330, and forty-one percent of Flint's residents, most

117. ERIK OLSON & KRISTI PULLEN FEDINICK, NAT. RES. DEF. COUNCIL, WHAT'S IN YOUR WATER? FLINT AND BEYOND 3 (2016), <https://www.nrdc.org/sites/default/files/whats-in-your-water-flint-beyond-report.pdf> [<https://perma.cc/RXZ5-8NLH>].

118. *Id.*

119. *Id.* When the NRDC conducted its analysis, Flint still was not listed among the systems in violation of the Lead and Copper Rule.

120. *Id.*

121. *What Is Environmental Justice?*, NAT. RESOURCES DEF. COUNCIL (Dec. 13, 2017), <https://www.nrdc.org/stories/what-is-environmental-justice> [<https://perma.cc/TC66-2S3W>].

122. See Julia Craven & Tyler Tynes, *The Racist Roots of Flint's Water Crisis*, HUFFINGTON POST (Feb. 3, 2016, 8:02 AM), https://www.huffingtonpost.com/entry/racist-roots-of-flints-water-crisis_us_56b12953e4b04f9b57d7b118 [<https://perma.cc/9CH2-KGDQ>].

123. OLSON & FEDINICK, *supra* note 117.

124. Smith, *supra* note 69.

of whom are African American, live in poverty.¹²⁵ Forty percent of Detroit's population is below the poverty line and there are an estimated 100,000 lead service lines underground.¹²⁶

In addition to a large number of lead service lines remaining in low-income communities, many argue that polluters target poor, black communities.¹²⁷ In the 1960s, plants like Buick City and GM Motors dumped millions of gallons of waste per day into the Flint River, which was used as the city's water supply until 1967.¹²⁸ Carl S. Taylor, a sociology professor at Michigan State University, believes that this is both a class and race issue.¹²⁹ Taylor states that there has been a pattern for some time of companies dumping everything into the water and into poor communities.¹³⁰ A 1966 EPA study showed that the water quality in Flint was poor decades before the issue of lead pipes and poisoning arose.¹³¹ In 2015, researchers at Virginia Tech found that the Flint River was nineteen times more corrosive than Lake Huron.¹³² This highly corrosive water was then supplied to the residents of Flint, Michigan, without the proper anti-corrosive agent treatment. The untreated, corrosive water combined with lead service lines led to the water crisis that the citizens of Flint now face.¹³³

The EPA has estimated that the cost of replacing a lead service line is between \$2,500 to \$5,500 per line, but some industries have estimated an average replacement as high as \$8,700 per line.¹³⁴ Lead in drinking water disproportionately affects people of poverty who simply cannot afford to replace their portion of the lead service line. As previously noted, the majority of the residents in cities like Flint and Detroit live below the poverty line.¹³⁵ Under the current LCR, the public water system is required to replace only the portion of the line that they own if the homeowner cannot bear the cost of replacing their private portion of the lead service

125. QUICKFACTS, UNITED STATES CENSUS, FLINT CITY, MICHIGAN, <https://www.census.gov/quickfacts/fact/table/flintcitymichigan/PST045217> [<https://perma.cc/G2SR-XNDV>] (last visited Nov. 14, 2019).

126. Okeson, *supra* note 62.

127. Craven & Tynes, *supra* note 122.

128. *Id.*

129. *Id.*

130. *Id.*

131. *Id.*

132. *Id.*

133. See Shelson, *supra* note 9, at 521.

134. WHITE PAPER, *supra* note 39, at 7.

135. Smith, *supra* note 69.

line.¹³⁶ These poor communities should be entitled to safe drinking water notwithstanding their inability to pay for it.

The current LCR also has a detrimental effect on renters. Under the current ownership approach, renters are not protected from landlords who refuse to pay for the private portion of the lead service line replacement.¹³⁷ The current rule for lead service line replacement under the LCR leaves poor homeowners and renters who do not have the money or control to replace the private portion of the lead service line unprotected from lead exposure in drinking water.

C. All or Nothing: Full Lead Service Line Replacement

It is imperative that the EPA revise the current rule for lead service line replacement under the LCR to provide for full lead service line replacement at little to no cost to the homeowner. Safe drinking water should be provided to all citizens, regardless of their ability to pay. The current “ownership” rule has allowed water companies to avoid replacing the whole line and impose partial replacements of the lead service line, which has been shown to be ineffective in regards to reducing lead levels in drinking water and has disproportionate effects on the poor.¹³⁸ In addition to water companies not being required to replace the entire lead service line, there have been widespread violations of the LCR, which was designed to protect people from lead.¹³⁹ Ineffective corrosion treatment, combined with partial lead service lines remaining intact makes nationwide water crises like Flint, Michigan, almost inevitable.

The Natural Resources Defense Council (NRDC) and many other critics of the LCR called for the rule to be amended to require the full replacement of all lead service lines.¹⁴⁰ Some cities and towns across the nation have already taken matters into their own hands. Most recently, Michigan passed the country’s strictest standards against lead in drinking water.¹⁴¹ The new rule was issued on June 14, 2018, and prohibits partial

136. 40 C.F.R. § 141.84(d) (2018).

137. See WHITE PAPER, *supra* note 39, at 10. The EPA has noted that there is a need to address lead service line replacement in rental properties, particularly where low income residents do not control the property or cannot contribute to the cost.

138. Swackhamer, *supra* note 6.

139. OLSON & FEDINICK, *supra* note 117.

140. *Id.*

141. Alex Ebert, *All Lead Water Lines to Be Replaced Under New Michigan Plan*, BLOOMBERG BNA (June 14, 2018), <https://news.bloombergenvironment>

lead service line replacements.¹⁴² The public utilities are required to replace all lead service lines, including those privately owned, free of charge within the next 20 years. The lead service line replacements will begin in 2021.¹⁴³ The Michigan Department of Environmental Quality also dropped the state's action level from 15 parts per billion to 12 parts per billion by 2025.¹⁴⁴

The EPA also recognizes the need to strengthen and modernize the LCR in order to further reduce exposure to lead from drinking water.¹⁴⁵ In 2015, the National Drinking Water Advisory Council (NDWAC)¹⁴⁶ recommended to the EPA that improvement of public health protection requires the removal of lead service lines from contact with drinking water.¹⁴⁷ In March of 2016, the Board of the American Water Works Association, which represents water utilities who provide drinking water, expressed its support for the NDWAC's recommendation of full lead service line replacement.¹⁴⁸ In 2016, the EPA released its "White Paper on the Lead and Copper Rule Revisions," which stated some of the options that the EPA is considering as part of the revisions.¹⁴⁹ The paper also provides regulatory options that the EPA is evaluating and highlights the key challenges, opportunities, and analytical issues presented by these options.¹⁵⁰ The primary potential revision is focused on mandatory,

.com/environment-and-energy/all-lead-water-lines-to-be-replaced-under-new-michigan-plan-1 [<https://perma.cc/YKT7-2GU5>].

142. *Id.*

143. *Id.*

144. *Id.*

145. Peter Chawaga, *Meet the New Lead and Copper Rule*, WATER ONLINE (Nov. 21, 2016), <https://www.wateronline.com/doc/meet-the-new-lead-and-copper-rule-0001> [<https://perma.cc/ZZ6S-KTHN>].

146. "The National Drinking Water Advisory Council (NDWAC) is a Federal Advisory Committee that supports EPA in performing its duties and responsibilities related to the national drinking water program. The council was created through a provision in the SDWA of 1974." The NDWAC LCR Working Group was formed to provide advice to EPA in considering potential revisions to the WHITE PAPER, *supra* note 39, at 7.

147. Letter from Jill D. Jonas, Chair, National Drinking Water Advisory Council, to Gina McCarthy, Administrator, U.S. Environmental Protection Agency (Dec. 15, 2015), https://www.epa.gov/sites/production/files/2017-01/documents/ndwacrecommtoadmin121515_0.pdf [<https://perma.cc/RAY5-X2HY>].

148. WHITE PAPER, *supra* note 39, at 8.

149. *Id.* at 7.

150. *Id.* at 9.

proactive lead service line replacement, which would reduce the reliance on corrosion control to reduce lead in drinking water.¹⁵¹

The EPA's white paper notes the substantial economic, legal, technical, and environmental justice issues presented by lead service line replacement programs. Lead service line replacement (LSLR) is costly with estimated costs ranging from \$2,500 to more than \$8,000 per line.¹⁵² There are also legal issues associated with full lead service line replacement.¹⁵³ As noted above, often times lead service lines are partially or fully owned by private homeowners.¹⁵⁴ Mandating full lead service line replacement, including the private portion owned by the homeowner, can lead to private property rights issues, such as trespassing or the "taking" of private property if the homeowner objects. The EPA notes that there are important legal questions about the EPA's authority to mandate replacement of privately-owned portions of the lead service line and the water system's ability under state or local law to require or pay for such replacement.¹⁵⁵ The EPA is currently assessing how to provide for a full lead service line replacement where the utility does not own the full line.¹⁵⁶ To resolve this legal hurdle, the EPA is evaluating whether a potential change to the definition of "control" under SDWA would facilitate full lead service line replacement.¹⁵⁷

Over the years, the publication of the revision to the LCR has not been released as expected.¹⁵⁸ The head of the EPA pledged that lead regulations would be a prominent feature of the EPA's work in 2018.¹⁵⁹ However, the draft revision's publication has been delayed three times by the Trump administration.¹⁶⁰ Revisions to the LCR were scheduled to be released in the summer of 2017, January 2018, and August 2018.¹⁶¹

151. *See id.*

152. *Id.*

153. *Id.*

154. *See Stecker, supra* note 2.

155. *Id.*

156. *Id.* at 10.

157. *Id.*

158. Thad Plumley, *Revised Lead and Copper Rule Delayed Again*, WATER WELL J. (May 25, 2018), <https://waterwelljournal.com/revised-lead-and-copper-rule-delayed-again/> [<https://perma.cc/2M4G-43LB>].

159. Brett Walton, *EPA Delays Lead and Copper Rule Again, Promises 'War on Lead'*, ECOWATCH (Dec. 15, 2017), <https://www.ecowatch.com/epa-regulationslead-2517638349.html> [<https://perma.cc/H2W7-6H5G>].

160. Plumley, *supra* note 158.

161. *Id.*

On October 10, 2019, EPA Administrator Andrew Wheeler announced a proposed rule that revises the LCR.¹⁶² The EPA's proposal focused on six key areas. Under the proposal, a community water system will be required to take new actions, including, but not limited to:

- (1) identifying the most impacted areas by requiring water systems to prepare and a publicly-available inventory of lead service lines and requiring water systems to fix sources of lead when a sample in a home exceeds 15 parts per billion (ppb);
- (2) strengthening drinking water treatment by requiring corrosion control treatment based on tap sampling results and establishing a new trigger level of 10 ppb;
- (3) replacing lead service lines by requiring water systems to replace the portion of the line owned by them when a customer choose to replace their portion of the line;
- (4) increasing drinking water reliability by requiring water systems to follow new sampling procedures and adjust sampling sites to better target locations with higher lead levels;
- (5) improving risk communication to customers by requiring water systems to notify customers within 24 hours if a sample collected in their home is above 15 ppb; and
- (6) better protecting children in schools and children care facilities by requiring water systems to take drinking water samples from the schools and child care facilities.¹⁶³

The EPA is proposing a new lead trigger level of 10 ppb, which would enable systems to react more quickly.¹⁶⁴ The action level would remain at 15 ppb.¹⁶⁵ However, according to the EPA, "Water systems above 15 ppb would be required to annually replace a minimum of three percent of the number of known or potential LSLs in the inventory at the time the action level exceedance occurs."¹⁶⁶ As of the date this Comment was submitted for publication, this proposal was still open for public comment.¹⁶⁷

162. *EPA Proposes Updates to Lead and Copper Rule to Better Protect Children and At-Risk Communities*, ENVTL. PROTECTION AGENCY (Oct. 10, 2019), <https://www.epa.gov/newsreleases/epa-proposes-updates-lead-and-copper-rule-better-protect-children-and-risk-0> [<https://perma.cc/5MBM-K82Z>].

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

167. *Id.*

D. Could Redefining “Control” be the Solution?

The current “ownership” approach of the LCR undermines the purpose of the SDWA and the LCR. In a letter to the EPA, Jennifer Chavez, an attorney with Earthjustice, urged the EPA to restore the broad interpretation of “control” for the purposes of lead service line replacement that was previously adopted in the 1991 LCR.¹⁶⁸ Originally, there was a presumption that the system controlled the entire lead service line unless it could demonstrate lack of the following forms of control: authority to set standards for construction, repair, or maintenance of the line; authority to replace, repair, or maintain the service line; or ownership of the service line.¹⁶⁹ Ms. Chavez makes a compelling argument that the current ownership rule encourages the public water systems to use this narrow interpretation of their own control of service lines, which further undermines public health and the goal of removing sources of lead from drinking water.¹⁷⁰

Expanding the definition of “control” was also discussed by members of an advisory group to the EPA.¹⁷¹ In a 2015 report, the Lead and Copper Rule Working Group (LCRWG) noted that some members advocated for a revised definition of the term “control.”¹⁷² However, the LCRWG decided against this expansion, noting that gaining physical access to private property poses significant legal issues when a property owner objects.¹⁷³

Gaining physical access to private property without the homeowner’s consent could lead to property rights issues, such as trespass and taking. A “taking” occurs when the government encroaches upon, occupies private land for its own proposed use, or licenses a third party to title to do either.”¹⁷⁴ The public water system will need legal authorization to replace the private portion of the line in order for the EPA to mandate full lead service line replacement.

168. Chavez, *supra* note 95, at 1.

169. ENVTL. PROT. AGENCY, *supra* note 36, at A-15.

170. *Id.* at 1.

171. See LEAD & COPPER RULE WORKING GRP., FINAL REPORT OF THE LEAD & COPPER RULE WORKING GROUP TO THE NATIONAL DRINKING WATER ADVISORY COUNCIL 18 (2015), <https://www.epa.gov/sites/production/files/2017-01/documents/ndwaclcrwgfinalreportaug2015.pdf> [<https://perma.cc/5BV9-BZWW>].

172. *Id.*

173. See *id.*

174. 10 A.L.R. Fed. 2d 231 (Originally published in 2006); *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419 (1982).

1. Legal Authorization with Consent

If the EPA revises the LCR to provide for full lead service line replacements, the systems will need legal authorization to enter private property and replace the private portion of the line.¹⁷⁵ In its final 2000 rule, the EPA stated that in practice the issue of replacing the private portion of a line would likely be resolved by obtaining the homeowners' consent.¹⁷⁶ Ideally, most of the homeowners will grant the water systems authorization to replace the private portion of their line, because it is beneficial to the homeowners to have lead-free pipes and clean water.¹⁷⁷ Ms. Chavez notes that while focusing on the homeowners' consent as a solution, the EPA did not address the homeowners' inability or unwillingness to pay.¹⁷⁸ Revising the LCR to shift the cost of the private portion from the homeowner would help facilitate this consent.

The public water systems will need to obtain an easement from the private homeowners to replace the private portion of the lead service line. An easement is a right given by the owner to another person or entity to trespass upon or use land.¹⁷⁹ Easements run with the land and almost every home already has an easement for utility access of some sort.¹⁸⁰ Historically, easements have been given to utility companies to bury cables, access utility lines, and for various other reasons.¹⁸¹ Express easements are created by grants through an executed instrument between the property owner and utility company.¹⁸² This is one solution to the EPA's question of how to provide for full lead service line replacement when the public water system does not own the entire line. The broad "control" approach will mandate that the public water systems replace the entire line and the easement will give them legal authorization to do so.

175. Chavez, *supra* note 95, at 16.

176. *Id.* at 12.

177. *Id.*

178. *Id.*

179. See 11 IND. LAW ENCYC. *Easements* § 1; 87 C.J.S. *Trespass* § 43.

180. Elizabeth Weintraub, *Definition of Easements Made Simple*, BALANCE (July 22, 2017), <https://www.thebalance.com/definition-of-easements-1798543> [<https://perma.cc/N9PQ-FU7R>].

181. *Id.*

182. Jessica Clancy Crowson & Christopher L. Boguski, *Utility Easements in South Carolina What to Know When Buying Property That May Have Existing Utility Easements*, S.C. LAW. 26, 28 (2015).

2. Legal Authorization without Consent

Even if the cost is shifted from the homeowner, some may still refuse to allow the water system to replace the private portion of their line. For example, one Pittsburgh homeowner who refused to give consent stated, “I’m 75, I’ve been living in this house and drinking this water my whole life, and there’s nothing wrong with me, so you’re not touching my line.”¹⁸³ Therefore, if a homeowner refuses to grant the public water system an easement to enter their private property and replace the lead service lines, then an easement may be acquired through the power of eminent domain. Eminent domain is the government’s power to take private property without the owner’s consent.¹⁸⁴ A governmental entity may take property if: (1) the condemnation of the property is reasonably necessary, (2) the property will be used for a public purpose, and (3) the property owner receives just compensation.¹⁸⁵ Eminent domain can be used to obtain an easement on property if the easement satisfies the necessary public use and other requirements.

Great privilege is given to the condemning authority to decide whether the condemnation of the property is necessary.¹⁸⁶ As previously discussed, lead service line replacements are necessary to prevent lead exposure to drinking water consumers. Partial lead service line replacements have adverse health effects, which also supports the notion that condemning a utility easement from homeowners who refuse to consent serves a public purpose.¹⁸⁷ The purpose of both the SDWA and LCR is to protect water consumers from contaminants.¹⁸⁸ Every city, community, and citizen benefits from clean water and lead-free pipes. Likewise, sewer and potable water lines, power lines, and gas lines have been established as valid public purposes.¹⁸⁹

The Takings Clause of the Fifth Amendment requires that the owner of condemned property receive just compensation.¹⁹⁰ The goal of just

183. Rebecca Beitsch, *For Cities Trying To Replace Lead Pipes, The Problem Is Often Beyond Their Reach*, HUFFINGTON POST (Aug. 23, 2018, 11:19 AM), https://www.huffingtonpost.com/entry/lead-wars-public-health-vs-private-property_us_5b7ebd72e4b0682df5ac7baf [<https://perma.cc/ATL6-SF46>].

184. Eminent Domain: Overview, Practical Law Practice Note Overview, available at Westlaw (go to Westlaw Practical Law).

185. *Id.*

186. *Id.*

187. See Swackhamer, *supra* note 6, at 2.

188. See Sherwin, *supra* note 17, at 689.

189. ENVTL. PROT. AGENCY, *supra* note 36, at A-15.

190. U.S. CONST. amend. V.

compensation is to put the property owner in as good of a financial position as if the property had not been condemned. Therefore, the amount of damages is measured by the owner's loss, not the condemner's gain.¹⁹¹ However, any compensation paid to the homeowners would likely be nominal because replacing the lead service line increases the property's value and provides a benefit, not a loss to the homeowner.

E. Who Foots the Bill?

Another issue that has been raised is the economic impact of full lead service line replacement.¹⁹² As previously discussed, lead service line replacement is expensive with estimated costs ranging from \$2,500 to more than \$8,000 per line.¹⁹³ Many homeowners, primarily those communities disproportionately affected by lead service lines in light of the environmental justice argument, cannot afford to replace the private portion of the line. Lead service line replacement is costly and many question how municipalities will pay for replacing the private and public portion of the lead service line.¹⁹⁴ If the EPA revises the LCR to mandate full lead service line replacements, state and city officials will have to create innovative ways to address the costs of lead service line replacement programs.

Two cities have provided interesting approaches to funding lead service line replacement, which could address both the public health and environmental justice issues.¹⁹⁵ Although the EPA cannot specify how to pay for the full lead service line replacements, these are suggestions that states may adopt. Lansing, Michigan, may serve as an innovative approach to addressing full lead service line replacement programs (FLSLRP).¹⁹⁶ Over ten years ago, Lansing decided to implement a full lead service line

191. ENVTL. PROT. AGENCY, *supra* note 36, at A-15.

192. WHITE PAPER, *supra* note 39, at 9.

193. *Id.* at 7.

194. *See id.* at 6.

195. Anna Clark, *The City That Unpoisoned Its Pipes*, NEXT CITY (Aug. 8, 2016), <https://nextcity.org/features/view/flint-lansing-michigan-replaced-lead-water-pipes> [<https://perma.cc/2M7E-PLDF>]; *Information for Utilities on Lead Service Replacement*, CITY OF MADISON, <https://www.cityofmadison.com/water/water-quality/lead-service-replacement-program/information-for-utilities-on-lead-service> [<https://perma.cc/9L5D-8MNW>] (last visited Oct. 30, 2019).

196. The EPA noted in its 2016 White Paper that it is looking at Lansing, Michigan as well as other cities like Madison, Wisconsin, in the context of developing proposed revisions to the Lead and Copper Rule. WHITE PAPER, *supra* note 39, at 9.

replacement and remove all of its lead pipes.¹⁹⁷ The Board of Water and Light built the cost of the FLSLRP into its rates. It is important to note that the Board of Water and Light is a wholly-owned city subsidiary that owns the entire service line, therefore, there were no private and public divide issues.¹⁹⁸ The city also designed a method for execution that cut the costs and time of pipe replacement in half by cutting two squares at either end of the line and using a tool invented by engineers in the city to thread the old lead pipe out and the new copper pipe in with one swift motion.¹⁹⁹

A broad interpretation of “control” would be similar to Lansing’s ownership of the entire service line. This could help alleviate private property issues. The cost of the replacements could be built into the utilities rates, if approved. Lansing has received calls from other cities asking for advice on full lead service line replacement.²⁰⁰

Madison, Wisconsin, is another example of a city that has implemented its own full lead service line replacement program. Madison became the first city to adopt a full lead service line replacement program in 2000 by passing an ordinance requiring full lead service line replacement.²⁰¹ To help fund the costs, property owners received reimbursement for half the cost of the replacement and could apply for financing through the city to help pay for the remaining cost.²⁰² Wisconsin’s Public Service Commission did not allow the customer reimbursements to be funded through rate-payer dollars, however, Madison used revenue generated by renting space on top of their water towers to cell phone companies for their antennas to help fund the cost of replacing the lead service lines.²⁰³

CONCLUSION

The current ownership approach undermines the purpose of the SDWA and the LCR, which is to prevent lead contamination in drinking water and protect public health. Partial lead service line replacements result in short term spiked lead levels and do not reliably reduce lead levels. Revising the “ownership” approach with a broader definition of “control” allows the public water system to replace the private portion of the line, which protects homeowners from lead exposure. This will prevent

197. Clark, *supra* note 195.

198. *Id.*

199. *See id.*

200. *Id.*

201. *Information for Utilities on Lead Service Replacement, supra* note 195.

202. *Id.*

203. *Id.*

harm and advance a legitimate state interest: protecting public health. Many oppose full lead service line replacement in fear that it will violate private property rights and is too costly to implement. However, the private property issues can be resolved by getting the homeowners consent in the form of an easement or condemning an easement using the power of eminent domain. After the Flint water crisis, it is highly unlikely that property owners will object, so this issue is easily resolved.

As for cost issues, a few cities have implemented innovative approaches to funding full lead service line replacements. A full lead service line replacement program similar to Lansing or Madison's would help resolve the environmental justice issues associated with lead contamination in drinking water. Of course, in states like Louisiana, issues could arise with getting these programs approved by Public Service Commissions. However, there is a broad societal benefit to having clean drinking water. The EPA has a chance to prevent another Flint, Michigan water crisis. It is time to implement a full-fledged war on lead by removing all lead service lines and protecting every citizen from lead exposure in drinking water.

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