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THERE'S SOMETHING IN THE WATER: HOW APATHETIC
STATE OFFICIALS LET THE PEOPLE OF
FLINT, MICHIGAN DOWN

I. INTRODUCTION

In February 2015, a rash appeared on Lee-Anne Walters' children due to bathing in water drawn from the Flint River.¹ The family first began to avoid ingesting the water almost four months prior due to its abnormal qualities—a harsh brown tint and unsettling odors that could not be ignored.² After an inspection, the Michigan Department of Environmental Quality (MDEQ) concluded that although there were high levels of lead in the Walters' water, the levels were due to the in-house plumbing, despite Lee-Anne's insistence that her house only had plastic plumbing.³

After unsuccessful follow-ups with MDEQ and the continued presence of visibly contaminated household water, Ms. Walters sought relief from a higher authority.⁴ She contacted the Environmental Protection Agency (EPA) and researchers at the Virginia Polytechnic Institute and State University (Virginia Tech) who each conducted their own investigations of her home.⁵ Results of three subsequent tests of the home's lead levels were so abnormally high they exceeded the capability of the tests' measurements of levels over 3.3 mg/dL.⁶ One preliminary memo penned by EPA employee Miguel Del Toral proved almost prophetic for the remainder of 2015: it laid out grave concerns regarding the city's water

1. See Memorandum from Miguel A. Del Toral, Regulations Manager, Ground Water and Drinking Water Branch, EPA, to Thomas Poy, Chief, Ground Water and Drinking Water Branch, EPA (June 24, 2015), <http://flintwaterstudy.org/wp-content/uploads/2015/11/Miguels-Memo.pdf> (describing timeline of Flint Water crisis).

2. See *id.* (noting that Ms. Walters' family ceased to ingest Flint water in November 2014).

3. See *id.* (confirming Ms. Walters' use of plastic plumbing).

4. See Anurag Mantha & Siddhartha Roy, *Hazardous Waste-Levels of Lead Found in a Flint Household's Water*, FLINTWATERSTUDY.ORG (Aug. 24, 2015), <http://flintwaterstudy.org/2015/08/hazardous-waste-levels-of-lead-found-in-a-flint-house-holds-water/> (noting Ms. Walters' attempts to determine source of water problems).

5. See *id.* (detailing Virginia Tech's independent investigation of Ms. Walters' home).

6. See Del Toral, *supra* note 1, at 3 (describing abnormally high test results).

supply, which would be marginalized or ignored entirely by various officials from the State of Michigan.⁷

The state's habit of denying first and asking questions later included events other than individual instances of lead exposure like Ms. Walters'.⁸ Dr. Mona Hanna-Attisha, director of the pediatric residency program at Hurley Medical Center, announced preliminary findings in September 2015, that children's lead levels had categorically increased in Flint since the city began drawing its water from the Flint River.⁹ Her results showed that in most areas children's lead levels doubled, and in some instances even tripled in size.¹⁰ The state dismissed the findings with such callous directness, Dr. Hanna-Attisha even questioned her own concrete evidence: "You know, you check and you double-check, and you know your research is right. The numbers didn't lie, but when the state is telling you you're wrong, it's hard not to second-guess yourself."¹¹

Any presence of lead in children's blood is considered to be unhealthy.¹² The Center for Disease Control and Prevention (CDC) now considers children to have elevated levels of lead in their blood if the amount is five $\mu\text{g}/\text{dL}$ or greater.¹³ Children with elevated lead levels are at risk for damage to the brain and nervous system, slowed growth and development, as well as learning and behavior difficulties.¹⁴ Additionally, adults with elevated lead levels face complications with "high blood pressure, . . . abdominal pain,

7. See Julie Bosman, Monica Davy & Mitch Smith, *As Water Problems Grew, Officials Belittled Complaints from Flint*, N.Y. TIMES A1 (Jan. 20, 2016), <https://www.nytimes.com/2016/01/21/us/flint-michigan-lead-water-crisis.html> (noting state's poor response to Del Toral's early warning).

8. See Flint Water Advisory Task Force, *Final Report*, 16-21 (2016), https://www.michigan.gov/documents/snyder/FWATF_FINAL_REPORT_21March2016_517805_7.pdf (cataloging instances in which MDEQ's responses to Flint's Water Crisis were belligerent and ineffective).

9. See Dr. Sanjay Gupta, Ben Tinker & Tim Hume, *'Our Mouths Were Ajar': Doctor's Fight to Expose Flint's Water Crisis*, CNN (Jan. 22, 2016, 8:25 AM), <http://www.cnn.com/2016/01/21/health/flint-water-mona-hanna-attisha/> (reporting on Dr. Hanna-Attisha's research findings).

10. See *id.* (describing severity of lead poisoning in Flint after switching water sources).

11. *Id.* (noting state's dismissive and recalcitrant response).

12. See *What Do Parents Need to Know to Protect Their Children?*, CTRS. FOR DISEASE CONTROL AND PREVENTION, https://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm (last updated May 17, 2017) (providing health information on lead blood levels).

13. See *id.* (identifying level at which lead in children become dangerous to children's health and development). The CDC previously identified the level at which health was threatened as ten $\mu\text{g}/\text{dL}$ or greater. *Id.*

14. *Id.* (detailing health risks associated with elevated levels of lead in children); see also *Lead Poisoning: Symptoms and Causes*, MAYO CLINIC (Dec. 6, 2016), <http://www.mayoclinic.org/diseases-conditions/lead-poisoning/symptoms>

. . . [and] mood disorders,” as well as various adverse effects for pregnant women.¹⁵

The Flint Water Crisis is now infamous for misconduct on behalf of the Michigan officials responsible for monitoring water quality, which ultimately endangered the health of Flint’s highly impoverished population.¹⁶ Part II of this Comment will chronicle the decisions responsible for turning to the Flint River as a water source and the complications that ensued from switching.¹⁷ Part III will explain the current regulatory requirements pertaining to lead in drinking water, specifically the EPA’s Lead and Copper Rule.¹⁸ Part IV will identify the ways in which various government officials - including local, state, and federal – failed to enforce the law and protect the people of Flint.¹⁹ Part V will explore other cities in which similar crises have occurred, as well as discuss solutions and preemptive measures to strengthen preventative strategies for safe drinking water.²⁰

II. SAFE DRINKING WATER IS NOT IN THE BUDGET THIS YEAR, FOLKS

In 2011, a financial disaster mired the city of Flint, Michigan.²¹ Following a government-issued state of emergency in the city due to its finances, Governor Rick Snyder announced his decision to place the city under state control for the second time since 2002.²² Among other measures to mitigate Flint’s financial woes, Michael

causes/dxc-20275054 (identifying symptoms of lead poisoning in children and newborns).

15. See MAYO CLINIC, *supra* note 14 (explaining adults also face severe health complications due to lead exposure).

16. See Michael Wines & John Schwartz, *Unsafe Lead Levels in Tap Water Not Limited to Flint*, N.Y. TIMES A1 (Feb. 8, 2016), https://www.nytimes.com/2016/02/09/us/regulatory-gaps-leave-unsafe-lead-levels-in-water-nationwide.html?_r=0 (drawing on Flint Water Crisis’ notoriety to discuss broader issue of lead exposure nationally).

17. For a discussion of the timeline of events leading to the national outcry over the Flint Water Crisis, see *infra* notes 21-54 and accompanying text.

18. For a discussion of the regulatory scheme under which the Flint Water Crisis occurred, see *infra* notes 55-94 and accompanying text.

19. For a discussion of the failure of local, state, and federal officials charged with regulating lead levels, see *infra* notes 95-152 and accompanying text.

20. For a discussion of other examples of national lead exposure instances, see *infra* notes 153-192 and accompanying text.

21. See Kristin Longley, *Emergency Manager Michael Brown Appointed to Lead Flint Through Second State Takeover*, MLIVE (Nov. 29, 2011, 7:34 PM), http://www.mlive.com/news/flint/index.ssf/2011/11/emergency_manager_michael_brow.html (describing financial emergency in Flint and state’s actions).

22. See *id.* (noting Flint’s history with state receivership).

Brown, Flint's first of four emergency managers, drastically raised the water and sewer rates several times, increasing some citizens' monthly water bills by twenty-five percent.²³ These price hikes harmed Flint's already financially fragile and historically underserved population: the median household annual income in Flint is \$24,679, and approximately forty-one percent of the city's majority African-American residents live below the poverty line.²⁴ During these price hikes, the city purchased its water from the Detroit Water and Sewage Department (DWSD), as it had for decades prior to switching its supply source.²⁵ In 2013, however, both the Flint City Council and the State Treasurer approved a decision to join the new Karegnondi Water Authority (KWA), which was building its own direct pipeline from Lake Huron to Genesee, Lapeer, and Sanilac Counties.²⁶ Flint required a temporary water source during the interim, however, and the city leaders remained concerned with the steep costs of purchasing from DWSD.²⁷ To avoid these costs, the city turned to using the Flint River as a temporary water source until the KWA pipeline could be completed.²⁸

In April 2014, Flint officially cut off access to water from DWSD.²⁹ Investigations later revealed that the switch occurred against the advice of Mike Glasgow, Flint's own water quality super-

23. See Kristin Longley, *New Garbage Fee, Water Rate Hike Increase Burden on Greater Number of Flint Residents*, MLIVE (Apr. 29, 2012, 7:50 AM), http://www.mlive.com/news/flint/index.ssf/2012/04/flint_fee_increases_hit_workin.html (describing impact of new policies on community).

24. See *Quickfacts Flint City, Michigan*, U.S. CENSUS BUREAU, <http://www.census.gov/quickfacts/table/PST045215/2629000> (last visited Nov. 20, 2017) (outlining economic statistics of Flint residents).

25. See Dominic Adams, *City Switch to Flint River Water Slated to Happen Friday*, MLIVE (Apr. 24, 2014, 5:50 PM), http://www.mlive.com/news/flint/index.ssf/2014/04/hold_switch_to_flint_river_wat.html (noting Flint's history of purchasing water from DWSD).

26. See Dominic Adams, *Flint City Council Approves Resolution to Buy Water from Karegnondi, State Approval Still Needed*, MLIVE (Mar. 25, 2013, 10:45 PM), http://www.mlive.com/news/flint/index.ssf/2013/03/flint_city_council_approves_re.html (reporting on economic drives for change in water source).

27. See Ron Fonger, *Detroit Gives Notice: It's Terminating Water Contract Covering Flint, Genesee County in One Year*, MLIVE (Apr. 19, 2013, 4:00 PM), http://www.mlive.com/news/flint/index.ssf/2013/04/detroit_gives_notice_its_termi.html (describing termination of water contract with DWSD).

28. See Dominic Adams, *Flint River Now an Option for Drinking Water Following Detroit's Termination of Contract*, MLIVE (July 23, 2013, 6:00 AM), http://www.mlive.com/news/flint/index.ssf/2013/07/city_readying_water_plant_to_t.html (re-marking on past reluctance to use Flint River as drinking water source).

29. See Paul Egan, Todd Spangler & Kristen Jordan Shamus, *E-mails: Flint Water Plant was Rushed into Operation*, DETROIT FREE PRESS (Feb. 12, 2016, 4:18 PM), <http://www.freep.com/story/news/local/michigan/flint-water-crisis/2016/02/12/e-mails-flint-water-plant-rushed-into-operation/80300220/> (accusing state officials of ignoring warning signs).

visor, who said the officials making the decision “seem[ed] to have their own agenda.”³⁰ Residents began complaining about the water’s taste, odor, and appearance in the months that followed.³¹ In August and September of 2014, the city issued two water boil advisories due to the presence of fecal and total coliform bacteria.³² In response to these incidents, Flint began using increased amounts of chemicals to prevent any further bacterial infections.³³

Less than a month later, the General Motors (GM) Plant ceased using water from the Flint River due to suspicions that the amount of chemicals in the water was causing erosion of engine parts at their factory.³⁴ Quelling public response to this, the district engineer for MDEQ reiterated that although the city’s usage of chlorine was higher than usual standards, the chloride levels were “easily within public health guidelines.”³⁵ Around the same time in October, members of the Governor’s legal counsel recommended switching back to “the Detroit system as a stopgap ASAP before this thing gets too far out of control.”³⁶ The state viewed the cost implications of the change as too great to actually consider the sugges-

30. *Id.* (noting switch to Flint River in April was against advice of water quality supervisor).

31. See Ron Fonger, *City Adding More Lime to Flint River Water as Resident Complaints Pour In*, MLIVE (June 12, 2014, 2:30 PM), http://www.mlive.com/news/flint/index.ssf/2014/06/treated_flint_river_water_meet.html (commenting on citizens’ complaints regarding water quality and odor).

32. See Amanda Emery, *Flint Issues Boil Water Notice for Portion of West Side of City*, MLIVE (Aug. 16, 2014, 10:14 AM), http://www.mlive.com/news/flint/index.ssf/2014/08/flint_issues_boil_water_notice.html (reporting on boil water advisory due to bacteria in water supply); Ron Fonger, *Flint Issues Boil Water Advisory for Section of the City After Positive Test for Total Coliform Bacteria*, MLIVE (Sept. 5, 2014, 6:56 PM), http://www.mlive.com/news/flint/index.ssf/2014/09/flint_issues_boil_water_adviso.html (reporting on subsequent water boil advisories). Water boil advisories are issued to indicate harmful bacteria present in the water supply, and direct consumers to boil their water before washing or consuming it in an attempt to kill bacteria in the water. *Id.*

33. Fonger, *supra* note 32 (noting remedial measures taken, including heightened levels of chlorine being added to water supply). City officials also stated their intention to “flush the [water] system in the boil advisory area” *Id.*

34. See Ron Fonger, *General Motors Shutting Off Flint River Water at Engine Plant Over Corrosion Worries*, MLIVE (Oct. 13, 2014, 6:00 PM), http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html (describing factory’s decision not to use Flint water due to corrosive qualities).

35. See *id.* (reporting on MDEQ’s comments on chemical levels in water supply).

36. See Matthew Dolan & Paul Egan, *Top Snyder Aides Urged Going Back to Detroit Water*, DETROIT FREE PRESS (Feb. 26, 2016, 12:04 AM), <http://www.freep.com/story/news/local/michigan/flint-water-crisis/2016/02/26/flint-water-crisis-snyder-detroit/80926138/> (revealing intergovernmental opinions expressing that Flint River water should have been cut off).

tion, however, and Flint's second emergency manager, Darnell Earley, ultimately rejected the proposal.³⁷

Over the next year, state officials repeatedly downplayed the significance of the Flint citizens' persistent complaints about the water's unseemly qualities.³⁸ January 2015 began with an announcement from the city that the water system contained significant amounts of disinfection byproducts, exceeding the maximum contaminant level (MCL), and violating the Safe Drinking Water Act.³⁹ This led to dwindling confidence in the water system by Flint's citizens and eventually to citizens confronting officials with dirty water bottles at public meetings, with Lee-Anne Walters at the front of the line.⁴⁰ Around the end of the month, the state actively avoided commenting on the water supply, even internally suggesting not "to say publicly that the water in Flint is safe until we get the results of some county health department traceback work on [forty-two] cases of Legionnaires disease in Genesee County since last May."⁴¹

Legionnaire's Disease is similar to pneumonia, and includes symptoms such as fever, cough, shortness of breath, muscle aches, and headaches.⁴² The *Legionella* bacteria, which occurs naturally in freshwater environments and multiplies best in warm water, creates health concerns such as Legionnaire's when spread through human-made water systems.⁴³ Eighty-seven cases of Legionnaires'

37. See *id.* (stating state's financially motivated reasons for continued Flint River use).

38. See Bosman, Davey & Smith, *supra* note 7 (characterizing state response as belittling and dismissive).

39. See Ron Fonger, *City Warns of Potential Health Risks After Flint Water Tests Revealed Too Much Disinfection Byproduct*, MLIVE (Jan. 2, 2015, 9:09 PM), http://www.mlive.com/news/flint/index.ssf/2015/01/flint_water_has_high_disinfect.html (reflecting growing concerns over total trihalomethane levels (TTML) in water supply).

40. See *Disaster Day by Day: A Detailed Flint Crisis Timeline*, BRIDGE MAGAZINE (Mar. 1, 2016), <http://bridgemi.com/2016/03/flint-crisis-timeline-part-2/> (highlighting email from MDEQ employee to colleagues regarding lack of public confidence in drinking water safety).

41. See Jonathan Oosting, *Legionnaires' Fear Led Staffer to Warn Against Calling Water Safe*, THE DETROIT NEWS (Feb. 26, 2016, 12:07 AM), <http://www.detroitnews.com/story/news/michigan/flint-water-crisis/2016/02/26/flint-legionnaires-safe-water-wyant-snyder/80966744/> (analyzing released emails indicating official attempts to downplay potential public safety concerns regarding Flint River water).

42. *Legionella (Legionnaires' Disease and Pontiac Fever): Signs and Symptoms*, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/legionella/about/signs-symptoms.html> (last updated July 18, 2016) (describing signs and symptoms of diseases related to Legionella bacteria).

43. *Legionella (Legionnaires' Disease and Pontiac Fever): Causes, How it Spreads, and People at Increased Risk*, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/legionella/about/causes-transmission.html> (last updated June 1, 2017)

disease occurred throughout the crisis, resulting in nine deaths and universal outrage regarding the state's failure to intervene or request aid from the CDC.⁴⁴

Throughout these and later instances of public endangerment, Flint's state-appointed emergency managers and other officials focused primarily on the financial cost of changing from the Flint River and their ability to hit the bare minimum of compliance with water regulations.⁴⁵ The city turned down an offer from Detroit to reconnect with its water system, despite a waiver of the four million dollar reconnection fee.⁴⁶ In March 2015, the emergency manager overruled a city council vote electing to reconnect with Detroit's water supply, calling the council's vote "incomprehensible."⁴⁷

This course of conduct continued well into the fall of 2015, with Flint and state officials' continued insistence that Flint's water met applicable EPA regulations, and was therefore safe.⁴⁸ Some of the state officials' most egregious instances of misconduct and failure came to light during this period, finally leading to publication of both Virginia Tech's and Dr. Hanna-Attisha's findings.⁴⁹ State officials did not publicly admit that Flint's water was not safe to drink until October 2015, after inquiries such as the Virginia Tech Study revealed that water from Flint River was nineteen times more corrosive than water provided by the DWSD.⁵⁰ The study's prelimi-

(detailing ways in which Legionella bacteria transmits to humans); see also *Legionella (Legionnaires' Disease and Pontiac Fever): Prevention*, CTNS. FOR DISEASE CONTROL AND PREVENTION, <https://www.cdc.gov/legionella/about/prevention.html> (last updated June 7, 2016) (noting complications relating to bacteria in warm water).

44. See Oosting, *supra* note 41 (noting CDC intervention may have lessened severity of outbreaks and saved lives).

45. See Flint Water Advisory Task Force, *supra* note 8, at 40, 44 (finding Flint emergency managers gave little consideration to changing water sources despite public demands to do so).

46. See Ron Fonger, *Detroit Offers Flint 'Long-Term' Deal for Lake Huron Water with No Reconnection Fee*, MLIVE (Jan. 16, 2015, 5:51 PM), http://www.mlive.com/news/flint/index.ssf/2015/01/detroit_offers_flint_deal_for.html (noting tension between state officials' cost of reconnection concerns and citizens' water quality concerns).

47. See Ron Fonger, *Emergency Manager Calls City Council's Flint River Vote 'Incomprehensible'*, MLIVE (Mar. 24, 2015, 1:35 PM), http://www.mlive.com/news/flint/index.ssf/2015/03/flint_emergency_manager_calls.html (citing costs of reconnection as motivating emergency manager's veto decision).

48. See *Water Quality Update*, CITY OF FLINT (July 1, 2015), <https://www.cityof-flint.com/wp-content/uploads/July-2015-Letter-to-Water-Customers.pdf> (assuring safety and compliance of Flint water).

49. For a detailed inspection of state misconduct during the Flint water crisis, see *infra* notes 95-152 and accompanying text.

50. See Dr. Marc Edwards, *Test Update: Flint River Water 19x More Corrosive than Detroit Water for Lead Solder; Now What?*, VA. TECH. FLINT WATER STUDY (Sept. 11, 2015), <http://flintwaterstudy.org/2015/09/test-update-flint-river-water-19x-more>

nary findings suggested that a large portion of Flint homes were exposed to high levels of lead contamination.⁵¹ Soon thereafter, Flint officially reconnected to Detroit's water system, but not before almost a year and a half of silence and downplaying of the extent of lead exposure by state officials.⁵² Advisories to only drink from filtered or bottled water still remain in place.⁵³ The extent of lead exposure's effects on the population will not be fully known for years, especially given the long-term nature of lead exposure's impact on children.⁵⁴

III. HOW MUCH POISON IS TOO MUCH? THE LEAD AND COPPER RULE AND THE "ACTIONABLE" LEVELS OF LEAD

A. The Safe Drinking Water Act

Congress enacted the Safe Drinking Water Act (SDWA) in 1974, charging the EPA to establish national health-based standards for drinking water, and to prevent contaminants in drinking water, whether man-made or naturally occurring.⁵⁵ Congress subsequently amended the Act twice, first in 1986 and again in 1996.⁵⁶ Although the SDWA's original purpose focused on the safety of water at the tap, the later amendments significantly expanded the

corrosive-than-detroit-water-for-lead-solder-now-what/ (compiling findings from various studies on Flint's poor water quality).

51. See Dr. Marc Edwards, *Our Sampling of 252 Homes Demonstrates a High Lead in Water Risk: Flint Should be Failing to Meet the EPA Lead and Copper Rule*, VA. TECH. FLINT WATER STUDY (Sept. 8, 2015), <http://flintwaterstudy.org/2015/09/our-sampling-of-252-homes-demonstrates-a-high-lead-in-water-risk-flint-should-be-failing-to-meet-the-epa-lead-and-copper-rule/> (announcing study results which contradicted official statements claiming to be in compliance with EPA regulations).

52. See Amanda Emery, *Flint Reconnects to Detroit Water, May Take 3 Weeks to Clear All Pipes*, MLIVE (Oct. 16, 2015, 6:08 PM), http://www.mlive.com/news/flint/index.ssf/2015/10/flint_reconnecting_to_detroit.html (noting additional efforts required to minimize damage).

53. Jason Hanna, *Flint Water Crisis: Deliver Bottles to Homes, Judge Rules*, CNN (Nov. 11, 2016), <http://www.cnn.com/2016/11/11/health/michigan-flint-water-crisis/> (discussing federal court order).

54. See Gupta, Tinker & Hume, *supra* note 9 (discussing health impacts of lead and multi-disciplinary care required to treat and minimize exposure side effects). For further discussion of lead's effects on human health, see *supra* notes 12-15 and accompanying text.

55. See 42 U.S.C. § 300f (2015) (defining applicable terms in act, including maximum contaminant level); see also *Summary of the Safe Drinking Water Act*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/laws-regulations/summary-safe-drinking-water-act> (last updated Aug. 24, 2017) (introducing statute's history and purpose).

56. Office of Water, *Understanding the Safe Drinking Water Act*, U.S. ENVTL. PROT. AGENCY, EPA 816-F-04-030 (June 2004), <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf> (describing legislative history of SDWA amendments).

scope of the regulation, targeting areas such as source water protection, water system improvements, as well as funding for public information initiatives.⁵⁷ Lead is, of course, a contaminant regulated by the EPA under the SDWA.⁵⁸

The SDWA banned any new installation of lead pipes in public water systems and in residential housing after June 19, 1986.⁵⁹ In regards to what does not qualify as a “lead pipe,” construction materials are deemed “lead free” if their solder and flux do not contain more than 0.2 percent of lead and the “wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures” contain less than 0.25 percent of lead.⁶⁰ This ban does not, however, extend to lead materials for other services, “such as manufacturing, industrial processing, irrigation, outdoor watering, or any other uses where the water is not anticipated to be used for human consumption[.]”⁶¹

Pertinently, the SDWA specifically requires notices to be given to individuals potentially affected by lead contamination, when construction materials included in their public water distribution system contain any lead and, if so, how much.⁶² Further, public notice requirements also demand the public water system to identify whether the “[c]orrosivity of the water supply [is] sufficient to cause leaching of lead.”⁶³ Such notices must include not only the possible lead sources, but also any potential health impacts of the contamination, mitigation methods reasonably available to the individual consumers, as well as any possible need to seek a substitute water supply.⁶⁴

The EPA sets primary drinking water standards by first identifying which contaminants pose a threat to public health and appear

57. *Id.* (noting expansion of SDWA’s scope and ability to regulate).

58. *See* Office of Water, *Lead in Drinking Water Regulation: Public Education Guidance*, U.S. ENVTL. PROT. AGENCY, EPA 816-R-02-010, 3 (June 2002), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10058E4.txt> (explaining regulatory scheme and public education methods).

59. 42 U.S.C. § 300g-6(a)(1)(A) (2015) (declaring subsequent use of lead pipes illegal).

60. *Id.* § 300g-6(d)(1)(A)-(B) (defining which pipes fall under regulation).

61. *Id.* § 300g-6(a)(4)(A) (excluding pipes used for services not related to human consumption or use from regulation).

62. *See id.* § 300g-6(a)(2)(A) (detailing public notice requirements of SDWA).

63. *Id.* § 300g-6(a)(2)(A)(ii) (including water corrosivity in notice requirements). Leaching refers to the process by which highly corrosive water extracts elements such as lead from the pipe in which it is travelling. *See* Goodnough et al., *infra* note 96 (discussing leaching in Flint and its causes). Leaching occurs after the water leaves the water treatment facility, and is primarily combatted by adding corrosion control treatment at the treatment facility prior to distribution. *See id.*

64. 42 U.S.C. § 300g-6(a)(2)(B) (explaining notice requirements).

with such frequency that they warrant regulation.⁶⁵ Next, the EPA sets a maximum contaminant goal level, which reflects the contamination level that does not threaten expected health risks.⁶⁶ Finally, using treatment techniques and the available technology, a maximum contaminant level for each contaminant is established and subsequently enforced by the EPA.⁶⁷

B. The Lead and Copper Rule

The primary rule addressing lead levels in drinking water is 40 C.F.R. § 141.80, or The Lead and Copper Rule.⁶⁸ The EPA's stated maximum contaminant level goal for lead levels is zero.⁶⁹ This is due to the disastrous effects of lead in the blood stream, which "[make it] difficult to clearly identify what [exposure] level is an appropriate criterion or 'threshold' below which there are no adverse health effects."⁷⁰ As previously noted, although maximum contaminant level goals are uniform, they are not *enforceable*.⁷¹

In 1991, the EPA initially identified three main reasons why uniform lead decontaminant regulations would be ineffective.⁷² First, most lead poisoning occurs not from source water contamination, but from corrosive interaction with water and plumbing materials after the water leaves the treatment center.⁷³ Second, the public water system cannot control privately-owned plumbing materials, which make up a significant portion of current lead plumbing.⁷⁴ Finally, the first two factors cause lead levels in individual homes to vary greatly, making a uniform lead concentration dif-

65. See Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, 56 Fed. Reg. 26460, 26462 (June 7, 1991) (to be codified at 40 C.F.R. pts. 141, 142) (explaining process for regulating lead and copper).

66. See *id.* at 26467 (discussing MCL for lead in water systems).

67. See *id.* at 26472 (explaining rationale for setting current MCL for lead in water systems).

68. 40 C.F.R. § 141.80 (2007) (addressing permissible lead and copper levels in drinking water).

69. See Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, 56 Fed. Reg. at 26463 (stating purpose and goal of Lead and Copper Rule).

70. *Id.* at 26468 (explaining zero tolerance goal for lead blood levels).

71. See *Understanding the Safe Drinking Water Act*, *supra* note 56 (distinguishing enforceability of maximum contaminant level goals) (emphasis added).

72. See Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, 56 Fed. Reg. at 26471 (explaining difficulties of uniform regulatory regime).

73. See *id.* (noting lack of source water contamination with lead).

74. See *id.* (explaining ownership of lead plumbing and regulatory limitations).

difficult to maintain or enforce.⁷⁵ These difficulties led to the current regulatory regime.⁷⁶

The Lead and Copper Rule targets lead contamination in four principal ways: “[C]orrosion control treatment, source water treatment, lead service line replacement, and public education.”⁷⁷ All water systems are required by law to install and operate corrosion control treatment, which ensure that systems do not leach lead while water travels from treatment centers to customers.⁷⁸ When enacted in 1991, the Lead and Copper Rule required water system managers (hereinafter “water systems”) to conduct two initial six-month monitoring periods to determine and designate the optimal corrosion control treatments, which were to be installed by 1997 and reviewed by the state in 1998.⁷⁹

States must adopt schedules and protocols for testing the water supply at set intervals, depending on population size and risk of exposure.⁸⁰ A public water system exceeds the lead action level if its concentration of lead is higher than .015 mg/L in “more than [ten] percent of tap water samples collected during any monitoring period”⁸¹ Crucially, the samples are meant to be collected from areas and locations “that may be particularly susceptible to high lead or copper concentrations.”⁸²

If a water system exceeds the action levels, the source water treatment requirements are triggered.⁸³ A water system in this circumstance must make a treatment recommendation to the state within 180 days of the failure.⁸⁴ From there, the state either accepts the water system’s recommended treatment or imposes a different treatment.⁸⁵ The four recognized methods for treating contami-

75. *See id.* (pointing to disproportionate amounts of lead at tap sources as rationale for regulatory regime).

76. *See id.* (justifying lack of uniform tap regulations by pointing out practical limitations to such regulations).

77. 40 C.F.R. § 141.80(b) (2007) (stating scope of Rule’s treatment techniques).

78. *See id.* § 141.82 (requiring corrosion control treatment).

79. *See id.* § 141.81 (listing corrosion control treatment steps and deadlines for large water systems).

80. *See id.* § 141.86 (setting forth guidelines for corrosion control treatments for respective water system sizes).

81. *Id.* § 141.80 (establishing actionable level of lead contaminant in public water systems).

82. 40 C.F.R. § 141.86 (2007) (providing considerations for determining which homes are at highest risk).

83. *Id.* § 141.80 (explaining triggering event for source water treatment).

84. *Id.* § 141.83 (creating timeline for required recommendations to state).

85. *Id.* (noting state’s options for enforcing water treatment).

nated source water are “ion exchange, reverse osmosis, lime softening or coagulation/filtration.”⁸⁶

Pursuant to a 2007 amendment to the Lead and Copper Rule, water systems must replace a minimum of seven percent of lead lines in their distribution system annually.⁸⁷ Moreover, whenever a public water system exceeds the action level for lead, it must take further actions to subsequently replace lead lines.⁸⁸ If part of the lead pipe is privately owned, the water system must make the owner aware of the line’s existence and “offer to replace the owner’s portion of the line.”⁸⁹

Finally, the Lead and Copper Rule mandates that the water system inform the public of failures to comply with the lead contamination efforts.⁹⁰ The “public education” section sets forth specific requirements for the form, content, and scope of the public notification.⁹¹ The notice’s first four factors have precise wording instructing the water systems exactly how to inform the public of the requisite information regarding their water’s elevated lead levels.⁹² The rule sets forth precise, standard language for the water system to use in informing the customers on the presence of elevated levels of lead, the health effects of lead, and contacts for additional information.⁹³ Further, the water system must provide information

86. *Id.* (allowing options for water source treatment).

87. 40 C.F.R. § 141.84 (2007) (setting initial requirements for lead service pipe removal).

88. *Id.* (requiring expedited measures in event of failure to comply with action level).

89. *Id.* (noting impact of private ownership on removal).

90. *See id.* § 141.85 (requiring consumer notice when lead levels in tap water exceed action level).

91. *See id.* (noting specificity with which water systems are required to inform consumers).

92. *See* 40 C.F.R. § 141.85 (a)(1)(i)-(iv) (2007) (setting explicit language requirements for certain public disclosures).

93. *Id.* (stating areas requiring strict adherence to language of Lead and Copper Rule). The template public education materials include:

(i) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

(ii) *Health effects of lead.* Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be

on the sources of lead, ways for consumers to reduce their exposure to lead, and an explanation for the elevated levels of lead.⁹⁴

IV. AIMING FOR THE LOWEST BAR POSSIBLE AND COMING UP SHORT

A. Failures in Enforcing the Law

The Flint Water Treatment Plant, acting under the Michigan Department of Environmental Quality's (MDEQ) recommendations, failed to provide corrosion control treatment.⁹⁵ While Flint purchased water from DWSD, the water came treated with a compound designed to prevent lead and copper leaching into the water supply.⁹⁶ After the switch, however, no such corrosion control treatment was added despite the river's notoriety for being less safe than the DWSD water supply.⁹⁷ MDEQ did not recommend any such treatment because according to MDEQ's interpretation of the Lead and Copper Rule, no treatment was required until after two consecutive six-month monitoring periods passed.⁹⁸

Even worse, MDEQ's water sample collection procedure made it substantially less likely to obtain an accurate report.⁹⁹ The state instructed residents to "pre-flush" and failed to sample the areas

affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

.....

(vi) For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our Web Site at [INSERT YOUR WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's web site at <http://www.epa.gov/lead> or contact your health care provider.

40 C.F.R. § 141.85(a)(1)(i)-(ii), (vi).

94. See 40 C.F.R. § 141.85(a)(1)(iii)-(v) (identifying areas which, although required, can be explained in water systems' own words).

95. See Flint Water Advisory Task Force, *supra* note 8, at 27-28 (noting lack of corrosion control required at time of transition).

96. See Abby Goodnough, Monica Davey & Mitch Smith, *Fouled Water and Failed Politics*, N.Y. TIMES, Jan. 23, 2016, at A1, https://www.nytimes.com/2016/01/24/us/when-the-water-turned-brown.html?_r=0 (identifying that Detroit treated its water with orthophosphate, which prevents corrosion in water supply).

97. *Id.* (comparing Flint's corrosion control before and after switching water sources).

98. See Flint Water Advisory Task Force, *supra* note 8, at 28 (explaining department's choice not to require corrosion control treatment). The Task Force determined that 1) MDEQ's interpretation of the text of the Lead and Copper Rule was erroneous, and 2) MDEQ failed to promptly require corrosion control even under its own misinterpretation. *Id.*

99. See *id.* at 29, 44 (describing MDEQ's sample collection process as "fundamentally flawed").

most likely to be affected by lead contamination.¹⁰⁰ Pre-flushing involves residents running tap water for a short period before collecting the sample, which clears much of the built-up lead residue in the faucet and pipes before the sample is collected.¹⁰¹

This made test results, such as those from the Walters' home, even more concerning because the actual lead levels were presumably even more astronomical.¹⁰² Although pre-flushing is not prohibited by federal regulations, it reduces the accuracy of the lead assessment and allows for serious health issues to potentially go ignored.¹⁰³ This procedure goes directly against the Lead and Copper Rule's stated purpose, which is to gauge the lead level at its worst in the areas most likely to be affected by lead exposure.¹⁰⁴

Beyond the state's initial failure to comply with the Lead and Copper Rule, commentators described their response to the community's cries for help and action as disinterested and full of scorn.¹⁰⁵ Such disinterest is demonstrated in the state's defensive response to Dr. Hannah-Attisha's findings, which were categorically denied.¹⁰⁶ Similarly incredulous was MDEQ's insistence that the amount of lead in Lee-Anne Walters' water was due to non-existent lead pipes.¹⁰⁷ The lack of action following Ms. Walters' complaint is particularly shocking given Miguel Del Toral's memo, which not only highlighted the abnormally high lead levels, but prophetically raised concerns about MDEQ's pre-flushing protocol and its possible implications for lead level results across the city.¹⁰⁸

Due to severe public pressure, Governor Rick Snyder released thousands of emails related to the Flint Water Crisis that contained surprising revelations.¹⁰⁹ One email from September 2015, de-

100. See Del Toral, *supra* note 1, at 2-3 (highlighting pre-flushing procedure and its potential impact).

101. *Id.* (explaining pre-flushing process and its implications).

102. *Id.* (noting gravity of Ms. Walters' situation and MDEQ's impact).

103. *Id.* (expressing concern pre-flushing affects accuracy of monitoring sample).

104. *Id.* (noting practice's counterintuitive nature, despite its legality).

105. See Julie Bosman, Monica Davey & Mitch Smith, *As Water Problems Grew, Officials Belittled Complaints from Flint*, N.Y. TIMES A1 (Jan. 21, 2016), <https://www.nytimes.com/2016/01/21/us/flint-michigan-lead-water-crisis.html> (describing apathetic response to community outcry).

106. See Gupta, Tinker & Hume, *supra* note 9 (noting state's denial of doctor's research findings).

107. Del Toral, *supra* note 1, at 3 (contradicting state's assertions of lead piping in Ms. Walters' home).

108. *Id.* (suggesting that poor monitoring could cause significant lead exposure).

109. See Jim Lynch, Chad Livengood & Jonathan Oosting, *Snyder Emails Detail State's Missteps in Flint Crisis*, THE DETROIT NEWS (Jan. 20, 2016, 12:23 PM), <http://>

scribed a state official's belief that the Flint community was turning children's lead exposure into "a political football."¹¹⁰ Many of the emails focused more heavily on suppressing potentially bad news and only addressed the economic impact of Flint's crisis, rather than the health concerns.¹¹¹

For instance, state officials were very dismissive of any potential ties between the change in water supply and an increase in Legionnaires' disease.¹¹² Since June 2014, eighty-seven cases of Legionnaires' disease surfaced in Genesee County.¹¹³ This uptick in outbreaks corresponded conspicuously with the switch to the Flint River water.¹¹⁴ Although one supervisor at the Genesee County Health Department (GCHD) described the outbreak as a "significant and urgent public health issue," it received little attention from state officials.¹¹⁵ The acting MDEQ communications director at the time suggested that without concrete proof, raising even a suspicion of such a correlation was "beyond irresponsible."¹¹⁶ State officials did little to investigate the GCHD official's "leap" and never informed the Governor of the possible link.¹¹⁷

B. Impartial Investigations

In late October 2015, Governor Snyder convened the Flint Water Advisory Task Force (FWATF) to conduct an independent investigation into the crisis as well as to suggest more protective guidelines for the future.¹¹⁸ In its final report, issued in March of

www.detroitnews.com/story/news/politics/2016/01/20/snyder-flint-emails/79062418/ (covering release of emails and state leaders' mistakes).

110. E-mail from Dennis Muchmore to Governor Rick Snyder & Brian Calley (Sept. 25, 2015, 10:29 AM), <http://somcsprod2govm001.usgovcloudapp.net/files/snyder%20emails.pdf> (characterizing public outcry as political mechanism).

111. *See generally id.* (focusing on cost of reconnection rather than impact on public health).

112. *See generally* Monica Davey & Mitch Smith, *Emails Reveal Early Suspicions of a Flint Link to Legionnaires' Disease*, N.Y. TIMES A17 (Feb. 4, 2016), <https://www.nytimes.com/2016/02/05/us/emails-reveal-early-suspicions-of-a-flint-link-to-legionnaires-disease.html> (noting emails suggested state awareness of problem).

113. *Id.* (stating amount of cases presented after switch to Flint River water).

114. *Id.* (commenting on timeline of outbreak in relation to water source switch).

115. *Id.* (describing local official's request for help and clarification).

116. *Id.* (quoting state official's response to local concern over correlation).

117. Davey & Smith, *supra* note 112 (observing lack of executive action following possibility of correlation).

118. Office of the Governor Rick Snyder, *Gov. Rick Snyder Announces Flint Water Task Force to Review State, Federal and Municipal Actions, Offer Recommendations*, MICHIGAN.GOV (Oct. 21, 2015), http://www.michigan.gov/snyder/0,4668,7-277-57577_57657-367761--,00.html (announcing Task Force's creation, purpose, and members).

2016, the FWATF described the Flint Water Crisis as “a story of government failure, intransigence, unpreparedness, delay, inaction, and environmental injustice.”¹¹⁹ The FWATF assigned primary responsibility for the crisis to MDEQ, which suffered from “cultural shortcomings” that caused the department to misinterpret and fail to enforce the Lead and Copper Rule.¹²⁰ As a result, lead levels in Flint’s water went under-reported and ultimately, uninvestigated.¹²¹

The FWATF’s preliminary findings, released in December 2015, described the culture at MDEQ as one that aimed for “technical compliance” with the Lead and Copper Rule, regardless of the practical consequences.¹²² This was especially apparent in MDEQ’s decision not to require corrosion control treatment, an action that ran counter to the purpose of minimizing health risks, and was later justified with the vague language found in the regulations.¹²³ Addressing the department’s reaction to citizen’s outcries, the Task Force termed MDEQ’s response as dismissive, full of scorn, and “more determined to discredit the work of others—who ultimately proved to be right—than to pursue its own oversight responsibility.”¹²⁴

Similarly culpable in the eyes of the FWATF was the Michigan Department of Health and Human Services (MDHHS), the agency that prematurely dismissed Dr. Hanna-Attisha’s research.¹²⁵ The FWATF noted this dismissal, along with a failure to evaluate and appreciate its own research, resulted in leadership’s failure to prevent childhood lead exposure.¹²⁶ The FWATF also found MDEQ

119. See Flint Water Advisory Task Force, *supra* note 8, at 1 (noting universal nature of governmental failure).

120. *Id.* at 28 (critiquing and condemning MDEQ’s environmental failures).

121. *Id.* (noting ways in which MDEQ’s actions directly contributed to elevated lead levels). The report specifically identified the MDEQ’s Office of Drinking Water and Municipal Assistance as the office primarily at fault. *Id.*

122. Letter from Flint Water Advisory Task Force to Governor Rick Snyder, FLINT WATER STUDY (Dec. 29, 2015), <http://flintwaterstudy.org/wp-content/uploads/2015/12/FWATF-Snyder-Letter-12-29-15.pdf> (criticizing cultural shortcomings of MDEQ which improperly aimed for bare minimum compliance practices).

123. *Id.* at 2-3 (reiterating regulatory purpose and spirit of Lead and Copper Rule).

124. *Id.* (criticizing MDEQ’s reaction to citizen demands for transparency).

125. See Flint Water Advisory Task Force, *supra* note 8, at 32 (mentioning Dr. Hanna-Attisha and Virginia Tech’s findings, and MDHHS’ reaction).

126. *Id.* at 33 (noting MDHHS’ role of leadership in preventing lead exposure and protecting children).

and MDHHS did not adequately cooperate in their joint goals.¹²⁷ “Communication was infrequent, and when it did occur, the default position was to conclude that the health problems were not related to the water supply switch”¹²⁸

The FWATF’s findings noted that although the Governor’s Office’s knowledge was limited due to bad information disseminated from MDEQ and MDHHS, there were also plenty of warning signs.¹²⁹ The FWATF highlighted an email between the Governor’s executive staff suggesting that Flint switch back to DWSD’s water as early as October 2014.¹³⁰ This email alone “should have resulted, at a minimum, in a full and comprehensive review of the water situation in Flint, similar to that which accompanied the earlier decision to switch to [the Karegnondi Water Authority].”¹³¹

As the source of the decision to switch to Flint River water, the FWATF naturally questioned the soundness of the emergency managers’ positions in Flint.¹³² Noting that they are first and foremost financial decision makers, the FWATF highlighted the managers’ lack of “necessary expertise to manage non-financial aspects of municipal government.”¹³³ This led the FWATF to recommend future emergency managers act not only in the best financial interest of the community, but for the broader goal of public health and safety.¹³⁴ The report cited local authorities as being unprepared and inadequate for the protection of the local population.¹³⁵ The FWATF noted, however, that Flint’s Public Works Department relied, perhaps foolishly, upon improper guidance from MDEQ, and was hindered by emergency manager rule.¹³⁶

127. *Id.* at 34 (identifying departments’ shared responsibilities and failure to collaborate thereon).

128. *Id.* (describing unwillingness to consider Flint River as source of health concerns).

129. *Id.* at 38 (highlighting lack of adequate information).

130. *See* Flint Water Advisory Task Force, *supra* note 8, at 38 (pointing to instance of executive acknowledgment of problem).

131. *Id.* (questioning lack of response and reconsideration on Governor’s behalf).

132. *Id.* at 40 (discussing impact of emergency managers on Flint Water Crisis).

133. *Id.* at 41 (questioning appropriateness of emergency managers making public health decisions).

134. *Id.* at 42 (suggesting alternative arrangement for Emergency Manager provisions).

135. *See* Flint Water Advisory Task Force, *supra* note 8, at 44-45 (considering impact of local authorities’ misunderstanding of law, procrastination, and lack of expertise).

136. *Id.* (noting impact of emergency managers on local autonomy).

Finally, the FWATF's analysis of the crisis confronted the issue of environmental injustice.¹³⁷ Noting the population's race and socioeconomic status, the FWATF concluded that the population of Flint "did not enjoy the same degree of protection from environmental and health hazards as that provided to other communities."¹³⁸ Further, they noted that "Flint residents were not provided equal access to, and meaningful involvement in, the government decision-making process" due to the authority of the emergency managers.¹³⁹ Echoing these statements, the Michigan Civil Rights Commission issued a report contextualizing the injustice of the water crisis with decades of structural inequality between races in Flint and issues of implicit bias in governmental decision-making.¹⁴⁰

C. Other Investigations

The EPA likewise conducted its own investigation into the adequacy of the response to the Flint Water Crisis.¹⁴¹ The EPA Office of the Inspector General (OIG) concluded that the EPA could have independently intervened in the crisis as early as June 2015.¹⁴² Although the EPA expressed concerns over jurisdictional authority in June 2015, the OIG's report noted the EPA has the authority to take emergency action to protect the public when a state's actions are insufficient.¹⁴³ The OIG report stated that once the EPA was aware that no corrosion control was being administered, and that several homes' lead levels were above the action level of the Lead

137. *See id.* at 54 (highlighting non-discrimination and "meaningful public involvement" of community).

138. *Id.* (discussing impact of social status on representation and efficiency).

139. *Id.* (pointing to limitations on community's access to public influence and decision-making).

140. *See generally* *The Flint Water Crisis: Systemic Racism Through the Lens of Flint*, MICH. CIVIL RIGHTS COMM'N (Feb. 17, 2017), http://www.michigan.gov/documents/mdcr/VFlintCrisisRep-F-Edited3-13-17_554317_7.pdf (addressing Flint Water Crisis while recognizing historic socio-economic struggles of Flint's residents). This Comment focuses on the specific legal and environmental shortcomings that resulted in the water crisis, and thus did not address racial injustice, which is all too crucial to understand the Crisis' importance from a socio-economic and cultural perspective.

141. *See* Office of Inspector General, *Protecting America's Waters Management Alert: Drinking Water Contamination in Flint, Michigan, Demonstrates a Need to Clarify EPA Authority to Issue Emergency Orders to Protect the Public*, U.S. ENVTL. PROT. AGENCY (Oct. 20, 2016), https://www.epa.gov/sites/production/files/2016-10/documents/_epaog_20161020-17-p-0004.pdf (investigating EPA's role in prolonging Flint Water Crisis).

142. *See id.* at 4 (identifying time at which EPA had sufficient information to intervene).

143. *Id.* at 5 (explaining legal basis for EPA emergency authority).

and Copper Rule, it was authorized to intervene.¹⁴⁴ This hesitancy prolonged the public health dangers and the people of Flint's suffering.¹⁴⁵

There have been approximately thirteen criminal cases filed against state and local officials related to the crisis.¹⁴⁶ Michigan's Attorney General announced the first three in April 2016, charging two former MDEQ employees as well as a Flint water plant operator.¹⁴⁷ That July, three more MDEQ officials were charged as well as three MDHHS employees.¹⁴⁸ Five months later, two former emergency managers, a former Flint utilities administrator, and a former Flint Public Works director were charged with various offenses.¹⁴⁹ Finally, MDHHS Director Nick Lyon and four other individuals were charged with involuntary manslaughter in connection with their failures to protect the people of Flint.¹⁵⁰ Multiple private lawsuits have been filed as well.¹⁵¹ These include individual and class action suits filed against the state, officials, as well as the EPA, seeking damages and specific performance in the form of lead line replacement.¹⁵²

144. *Id.* (noting events after which EPA had sufficient cause to act).

145. *Id.* at 5-6 (stating lack of action prolonged public health risks).

146. For a discussion of the various criminal claims brought against officials, see *infra* notes 147-149 and accompanying text.

147. See Amanda Emery, *Two State DEQ Workers Arraigned on Criminal Charges in Flint Water Crisis*, MLIVE (Apr. 20, 2016, 4:52 PM), http://www.mlive.com/news/flint/index.ssf/2016/04/two_state_employees_arraigned.html (detailing arraignments and case statuses).

148. See Dominic Adams, *New Charges Announced in Flint Water Crisis*, MLIVE (July 29, 2016, 9:25 AM), http://www.mlive.com/news/flint/index.ssf/2016/07/new_charges_announced_in_flint.html (updating information on charges filed against officials).

149. See Ron Fonger, *Two Former Flint Emergency Managers Charged with Water Crisis Crimes*, MLIVE (Dec. 20, 2016, 9:51 AM), http://www.mlive.com/news/flint/index.ssf/2016/12/former_state_emergency_manager.html (announcing recent charges against former Flint officials).

150. See Vann R. Newkirk II, *Five Involuntary Manslaughter Charges in the Flint Water Crisis*, THE ATLANTIC (June 14, 2017), <https://www.theatlantic.com/politics/archive/2017/06/an-involuntary-manslaughter-charge-in-the-flint-water-crisis/530280> (describing Michigan Attorney General's decision to charge high ranking officials in connection with Flint Water crisis). The other four officials charged were "former Flint Emergency Manager Darnell Earley, former state environmental official Liane Shekter-Smith, former Flint Public Works director Howard Croft, and state water supervisor Stephen Busch." *Id.*

151. See *4 Families Sue Over Lead in Flint Water*, THE DETROIT NEWS (Nov. 15, 2015, 10:39 PM), <http://www.detroitnews.com/story/news/local/michigan/2015/11/15/flint-water-lawsuit/75851902/> (describing civil suits against state and city officials).

152. See Gary Ridley, *New Flint Water Lawsuit Seeks Replacement of Lead Service Lines*, MLIVE (Jan. 27, 2016, 10:07 AM), <http://www.mlive.com/news/flint/in->

V. HOLD ON TO YOUR WATER FILTERS KIDS,
THIS COULD TAKE AWHILE

A. Other Incidents in the U.S.

Unfortunately, the misinformation and reporting delays behind Flint's lead exposure are not isolated occurrences.¹⁵³ Notable instances of unreported and untreated elevated lead levels across the country are indicative of a much larger problem.¹⁵⁴ In the early 2000s, Washington, D.C.'s water supply contained lead levels much higher than the acceptable limit.¹⁵⁵ Most individuals found out about the lead exposure when the CDC acknowledged the inaccuracy of earlier statements that claimed that no children were at risk for lead poisoning.¹⁵⁶

In February 2016, the water in Jackson, Mississippi, likewise contained an unacceptable amount of lead.¹⁵⁷ Although the city received results of fifty-eight home samplings in July 2015, the Lead and Copper Rule's language allowed the city to avoid calculating the percentage of lead exposure until the end of the compliance period in January, almost six months later.¹⁵⁸ In Sebring, Ohio, a water treatment operator faced criminal charges in January 2016, after "seven of [twenty] homes where the water is routinely tested . . ." had levels of lead of twenty-one parts per billion.¹⁵⁹ Similar to

[dex.ssf/2016/01/new_flint_water_lawsuit_seeks.html](http://www.demdex.ssf/2016/01/new_flint_water_lawsuit_seeks.html) (reporting on recent federal suit).

153. Michael Wines & John Schwartz, *Unsafe Lead Levels in Tap Water Not Limited to Flint*, N.Y. TIMES A1 (Feb. 8, 2016), http://www.nytimes.com/2016/02/09/us/regulatory-gaps-leave-unsafe-lead-levels-in-water-nationwide.html?_r=0 (noting instances of lead exposure outside of Flint).

154. *See generally id.* (describing several instances of lead exposure in past decade).

155. *See id.* (recalling Washington, D.C. lead exposure).

156. *See id.* (noting lack of public notice in Washington, D.C. lead exposure incident).

157. Anna Wolfe, *Lead, Water: Still Questions in Jackson*, THE CLARION LEDGER (Feb. 3, 2016, 5:32 PM), <http://www.clarionledger.com/story/news/local/2016/02/03/lead-water-still-questions-jackson/79760794/> (covering recent lead exposure in Jackson).

158. *See id.* (noting delay in timeline of reporting requirements). Step One of the Lead and Copper Rule's corrosion control adoption requirement states that water systems will "conduct initial monitoring (§ 141.86(d)(1) and § 141.87(b)) during two consecutive six-month monitoring periods . . ." 40 C.F.R. § 141.81(d)(1).

159. *See Ohio Town May be the Next Flint with its Water Crisis*, CBS NEWS (Jan. 25, 2016, 8:48 AM), <http://www.cbsnews.com/news/sebring-ohio-next-flint-water-crisis-lead-copper/> (describing lead exposure incident leading to criminal consequences).

Flint, the residents of Sebring were not informed in a timely manner.¹⁶⁰

Many of these instances occurred due to unforeseen consequences of chemicals added to the water supply, which were initially aimed at making it safer.¹⁶¹ Switching from chlorine to chloramine contributed to the lead exposure in Washington, D.C.¹⁶² In Maine, an anion exchange program designed to remove arsenic from well water caused levels of lead to spike dramatically.¹⁶³ In Flint, heavy amounts of chlorine combatting bacteria accelerated the amount of leaching already occurring.¹⁶⁴

B. The Problem with the Current System

The Lead and Copper Rule leaves too many possibilities for inaccurate sampling, such as “failure to pick the worst-case houses, [and] not allowing water to stand long enough before sampling . . .” being just a couple.¹⁶⁵ Further, systems whose sample results could come dangerously close to the action level and still be deemed within compliance.¹⁶⁶ Effectively, a sampling could have nine percent of the homes reporting “hazardous levels of lead . . .” and still be in full compliance with EPA regulations.¹⁶⁷

Error margins such as these led some to argue that current lead monitoring efforts are “‘focused on how to achieve a passing score, not how to inform the public and to truly and effectively address the underlying problem of lead levels in drinking water.’”¹⁶⁸

160. *Id.* (addressing local official’s failure to provide adequate testing or notice to consumers). A spokesperson for the Ohio Environmental Protection Agency stated of Sebring’s Water Superintendent that “incomplete data time and time again, and not submitting the required documents, made it difficult for our field office to determine whether or not they had notified their customers.” *Id.* For a further discussion of the lack of transparency between water authorities and the people of Flint, see *supra* notes 34-48, and accompanying text.

161. See Wines & Schwartz, *supra* note 153 (describing effects of added chemicals on New Jersey town’s lead supply).

162. Rebecca Renner, *Out of Plumb: When Water Treatment Causes Lead Contamination*, 117 ENVTL. HEALTH PERSPECTIVES A 542, A 544 (Dec. 2009), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2799485/pdf/ehp-117-a542.pdf> (discussing cause of Washington, D.C. lead exposure from 2001-2003).

163. *Id.* (exploring unintended consequences of chemical additives on drinking water).

164. See Fonger, *supra* note 33 (describing how increased chlorine levels led to increased corrosion levels).

165. Renner, *supra* note 162, at A 546 (listing ways in which lead sampling can be misleading).

166. See *id.* (discussing shortcomings of actionable levels of lead).

167. *Id.* (postulating worst case scenarios for incompetent lead sampling).

168. *Id.* at A 547 (quoting Washington, D.C. water official deflecting blame for lead exposure to incompetency of Lead and Copper Rule).

Critics of the current system are calling for increased transparency in the absence of a more cohesive monitoring system; the State of North Carolina petitioned the federal government to adopt a requirement to report any excessive lead results to the consumer within forty-eight hours.¹⁶⁹ In October 2016, the EPA released a White Paper describing revisions to the Lead and Copper Rule under consideration, citing the crises in Flint and Washington as examples of the need for an “overhaul” of the current regulatory regime.¹⁷⁰ Among its stated goals were more transparency, clearer rules that are easier to enforce, and a “focus on minimizing” the amount of lead in drinking water.¹⁷¹

Addressing the complexities of lead service line replacement, the EPA stated that it is attempting to work around the problems associated with requiring full lead service line replacement across the country.¹⁷² The national estimated costs range anywhere from sixteen to eighty billion dollars, and the legal intricacies of privately owned lead service lines still remain.¹⁷³ The White Paper also suggests that the EPA update the corrosion control treatment guidelines every six years and for states to subsequently adapt to these updates, ensuring the most up to date scientific practices are utilized to guarantee the water supply’s safety.¹⁷⁴ Another proposal includes making corrosion control treatment an assumed requirement: “Requiring all systems to assume that their distribution system includes the presence of [Lead Service Lines] . . .” or affirmatively disprove that fact to the EPA.¹⁷⁵

The White Paper acknowledged that the current sampling requirements “were designed to assess the adequacy of [corrosion control treatment], not the level of human exposure to lead,” and

169. *State Demands Federal Rule Changes in Response to Flint Water Crisis*, N.C. DEP’T OF ENVTL. QUALITY (Mar. 24, 2016), <https://deq.nc.gov/press-release/state-demands-federal-rule-changes-response-flint-water-crisis> (responding to lack of public notice in Flint, Michigan).

170. Office of Water, *Lead and Copper Rule Revisions White Paper*, U.S. ENVTL. PROT. AGENCY 3 (Oct. 2016), https://www.epa.gov/sites/production/files/2016-10/documents/508_lcr_revisions_white_paper_final_10.26.16.pdf (announcing potential revisions to Lead and Copper Rule).

171. *Id.* at 4 (framing stated goals of proposed revisions).

172. *Id.* at 9-10 (addressing difficulties with requiring complete lead service line replacement).

173. *Id.* (computing cost of complete lead replacement nationally).

174. *Id.* at 11 (recommending increased vigilance for sufficiency of corrosion control treatment regimes).

175. *See White Paper, supra* note 170, at 8-11 (suggesting improvements for lead service line replacement efficiency).

should be abrogated for a more health-based standard.¹⁷⁶ Further, the White Paper frankly addressed the need for more transparent sampling and information sharing, with a focus on taking steps to accurately determine lead levels and keep the public informed about them.¹⁷⁷ Highlighting the wrongdoing in Flint, the EPA noted that it released a memorandum to state agencies to discourage the use of procedures such as pre-flushing or removing faucet aerators, both mistakes made by MDEQ.¹⁷⁸

Finally, the White Paper confronted the shortcomings of current public education requirements.¹⁷⁹ Their recommended improvements included specific outreach to customers with lead service lines, public access for anyone to the lead service line inventory, as well as a more thorough notification system of irregularities and individual measures.¹⁸⁰ Although the White Paper's thoughtful solutions suggest that the EPA is aware of the Lead and Copper Rule's deficiencies, these policies have yet to be enacted.¹⁸¹

C. Flint Moving Forward

Meanwhile, the people of Flint remain at risk for lead exposure.¹⁸² Although the lead contamination dropped significantly after the city resumed purchasing water from Detroit, the city is still recommending residents only drink filtered or bottled water.¹⁸³ In addition to the state distributing filters and bottles at distribution points, Federal District Court Judge David Lawson issued a ruling in November 2016 requiring the state to deliver bottled water to homes that do not have verified working filters.¹⁸⁴ The results of MDEQ's July to December 2016 sampling period demonstrated that ninety percent of the samples taken contained twelve parts per billion or less of lead, officially falling below the action level.¹⁸⁵ The

176. *Id.* at 11, 17 (discussing overarching issues with lead regulation).

177. *See generally id.* at 12-15 (confronting need for updated sampling procedures).

178. *Id.* at 13 (drawing on failures of Flint sampling administration).

179. *Id.* at 15-16 (commenting on potential improvements to public education materials on lead).

180. *White Paper, supra* note 170, at 15-16 (suggesting improvements to public education requirements).

181. *See id.* at 18 (noting that EPA is *considering* these changes).

182. *See* Hanna, *supra* note 53 (reporting on court ruling amid continued public health concerns).

183. *Id.* (discussing current water policies of Flint, Michigan).

184. *Id.* (describing court ruling due to difficulties with distribution center).

185. Steve Almasy, *Flint Water Lead Amounts Improve, Below Federal Limits*, CNN (Jan. 25, 2017, 5:50 PM), <http://www.cnn.com/2017/01/24/health/flint-water-crisis/index.html> (announcing recent sampling results).

new sampling results did not, however, change the recommendation that residents use filtered water for drinking and cooking.¹⁸⁶

On March 17, 2017, the EPA awarded a \$100 million grant to MDEQ to aid water infrastructure upgrades in Flint.¹⁸⁷ Additionally, on March 28, 2017, District Judge Lawson approved an eighty-seven million dollar settlement.¹⁸⁸ The settlement agreement required that the lead pipes be replaced at a rate of approximately six thousand per year, with a total replacement goal by January 2020.¹⁸⁹ Further, the settlement required continued access to clean water, filters, and filter education specialists.¹⁹⁰

The state will also continue to cover pregnant women and children under twenty-one under Medicaid up to four hundred percent over the poverty line through March 2021, as well as providing “case management services, for children with elevated blood levels . . .” through September 2018.¹⁹¹ Notwithstanding these victories, health implications of the crisis will not be fully understood for years, and it is unclear whether the people of Flint’s trust in their government can ever be regained.¹⁹²

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186. *Id.* (noting continued need for water precautions).

187. *EPA Awards \$100 Million to Michigan for Flint Water Infrastructure Upgrades*, U.S. ENVTL. PROT. AGENCY (Mar. 17, 2017), <https://www.epa.gov/newsreleases/epa-awards-100-million-michigan-flint-water-infrastructure-upgrades> (announcing federal award for infrastructure repairs).

188. Tresa Baldas & Paul Egan, *Judge Approves \$87 Million Settlement in Flint Water Lawsuit*, DETROIT FREE PRESS (Mar. 28, 2017, 1:26 PM), <http://www.freep.com/story/news/local/michigan/flint-water-crisis/2017/03/28/judge-flint-water-lawsuit-settlement/99731876/> (announcing approval of settlement requiring lead service line replacement).

189. *Id.* (enumerating lead service line schedule and requirements).

190. *Id.* (noting additional state requirements of water resources under approved settlement).

191. *Id.* (discussing settlement requirement for continued medical coverage and treatment).

192. See Jim Lynch, *Flint Water Town Hall Leaves Residents Discouraged*, THE DETROIT NEWS (Jan. 11, 2017, 10:54 AM), <http://www.detroitnews.com/story/news/michigan/flint-water-crisis/2017/01/11/flint-water/96441578/> (emphasizing continued lack of trust in officials).

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