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## **COMMENT: THE FLINT WATER CRISIS: A NATIONAL WARNING OF FAILING INFRASTRUCTURE**

**Andrew J. Lawton\***

I look at the Flint, Michigan Water Crisis from a combined perspective that broadens the scope of one of the worst manmade environmental disasters in the history of the United States. The goal of this examination is to bring attention to preventable environmental catastrophes, and put a spotlight on the policies and governing philosophies, which aggregated into neglect to the health of the people of Flint. I briefly analyze Michigan's emergency manager law's role in fostering the poor oversight that allowed the crisis to spiral out of control. I then pivot to the nation's water infrastructure and regulatory environment at large. Finally, I examine proposals of public policy for financing the repair and removal of toxic lead pipes from other municipalities. This paper highlights the dire consequences of environmental degradation through lead and poorly managed public utilities. It is my hope that such tragedies can be prevented by an increased public awareness.

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## I. INTRODUCTION

The Flint water crisis has proven to be one of the nation's worst environmental disasters.<sup>1</sup> Thousands of Flint residents have had inadequate access to water because of government officials' inability to properly treat the water supply being diverted from the Flint river.<sup>2</sup> Many have been sickened, now suffer from lead poisoning, or worse, fatally succumbed to mistreated water.<sup>3</sup> This paper will focus on the legal and bureaucratic mechanisms that allowed the crisis to unfold and persist. In Michigan, particularly, the emergency manager law the governor instituted to improve the state's fiscal situation allowed the crisis to go unnoticed and worsen.<sup>4</sup> This law allowed the governor to suspend local and city governments across the state, and appoint a single person with the authority to manage all operations of the city.<sup>5</sup> Flint's crisis, at least in part, stems from a lack of care or accountability from emergency managers or state officials.<sup>6</sup>

After looking at the local perspective of Flint, this paper's focus will shift to the Environmental Protection Agency (EPA) and the legal mechanisms that existed and failed to safeguard against the poor decision making of Flint's emergency manager. The EPA was deterred by a dwindling allocation of funding and failed to act when it had the clear authority to do so.<sup>7</sup>

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1. Mark Berman & Brady Dennis, *Flint Water Falls Below Federal Lead Limits, but Residents are Still Asked to Use Filtered Water*, WASH. POST (Jan. 24, 2017), [https://www.washingtonpost.com/news/post-nation/wp/2017/01/24/flint-water-falls-below-federal-lead-limits-but-residents-still-asked-to-use-filtered-water/?utm\\_term=.d3a30cdab9df](https://www.washingtonpost.com/news/post-nation/wp/2017/01/24/flint-water-falls-below-federal-lead-limits-but-residents-still-asked-to-use-filtered-water/?utm_term=.d3a30cdab9df) [<https://perma.cc/44KU-BVX6>].

2. *Id.*

3. See Christianna Silva, *Flint Now: Water Crisis Could Result in Manslaughter Charge for Michigan's Top Medical Official*, NEWSWEEK (Oct. 10, 2017), <http://www.newsweek.com/flint-now-water-crisis-could-result-manslaughter-charges-michigans-top-medical-681779> [<https://perma.cc/V5SK-7Z32>]; see also Jen Christensen et al., *Flint Lead Poisoning: Living With Uncertainty, Long-Term*, CNN (Mar. 5, 2016), <http://www.cnn.com/2016/03/04/health/flint-lead-exposure-long-term-pain/index.html> [<https://perma.cc/9VQA-KU28>].

4. 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, 683 (2017).

5. See *id.* at 682-83.

6. *Id.* at 663.

7. *Watchdog: EPA Delayed Emergency Order for 7 Months in Flint Water Crisis*, CHI. TRIB. (Oct. 20, 2016), <http://www.chicagotribune.com/news/nation-world/midwest/ct-watchdog-epa-delay-flint-water-crisis-20161020-story.html> [<https://perma.cc/U6KW-SHUK>]; Glenn Thrush & Coral Davenport, *Donald Trump Slashes*

Finally, this paper will advocate for broadly overhauling the funding and bureaucratic structure, which failed to safeguard the people of Flint and perhaps many other communities nationwide, underscoring the national imperative for governments at all levels to be properly funded for the good of public health. The people of Flint's concerns over the lack of the most basic of all human needs, clean water, have been largely ignored.<sup>8</sup> The failure to properly address this crisis is a national failing that has serious implications for other public health crises going forward.

## II. FLINT: A FAMILIAR URBAN STORY IN CRISIS

On April 25, 2014, the city of Flint, Michigan switched its water supply from Detroit to the Flint River to save the city a few million dollars in costs while waiting for construction to finish on a regional pipeline to supply water from Lake Huron.<sup>9</sup> Regulations to prevent contamination of the water supply were already in place through policies like the Safe Water Drinking Act, which every municipality is required to comply with.<sup>10</sup> Followed properly, these legislative acts have dramatically improved drinking water quality since enactment.<sup>11</sup> But in Flint, these regulations were not followed properly, and scores of people have been sickened or lead poisoned, and thousands more lacked basic water access.<sup>12</sup>

The context for this bureaucratic failure is set by a common story throughout the American Rust Belt.<sup>13</sup> Flint is a city

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*Funds E.P.A. and State Department*, N.Y. TIMES (Mar 15, 2017), <https://www.nytimes.com/2017/03/15/us/politics/budget-epa-state-department-cuts.html> [https://perma.cc/58AG-P8MG].

8. Ryan Felton & Oliver Milman, *Flint Water Crisis: Michigan Officials Ignored EPA Warnings About Toxicity*, THE GUARDIAN (Feb. 3, 2016), <https://www.theguardian.com/us-news/2016/feb/03/flint-water-crisis-congress-michigan-officials-ignored-epa-warnings-lead> [https://perma.cc/VK2B-HDT2].

9. *Flint Water Crisis: A Timeline*, MSNBC (Jan. 27, 2016), <http://www.msnbc.com/msnbc/flint-water-crisis-timeline> [https://perma.cc/L4L9-79QJ].

10. *See generally* Safety of Public Water Systems, 42 U.S.C. § 300 (2010).

11. *Celebrating a Public Protections Milestone: The 40th Anniversary of the Clean Water Act*, CTR. FOR EFFECTIVE GOV'T (Oct. 10, 2012), <http://www.foreffectivegov.org/clean-water-act-40th-anniversary> [https://perma.cc/TMV3-JCJV].

12. Merrit Kennedy, *Led-Laced Water in Flint: A Step-by-Step Look at the Makings of a Crisis*, NPR (Apr. 20, 2016), <http://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/FY7U-QQMW].

13. STEVEN P. DANDANEAU, *A TOWN ABANDONED: FLINT, MICHIGAN, CONFRONTS DEINDUSTRIALIZATION* xx (Larry Bennett & Ronald Edsforth eds., State University of New York Press 1996).

infamous for the closing of its auto plants, and serves as a case study of globalization and corporate management squeezing great industrial cities of their jobs.<sup>14</sup> After World War II, the city was an economic powerhouse with General Motors factories producing Chevrolet cars and Buicks.<sup>15</sup> But the plants closed in the 1980s, which depressed the economy of Flint.<sup>16</sup> The city has never really recovered after the loss of the auto jobs and economic activity associated with them.<sup>17</sup> The United States census shows that by 2010, the city had lost almost a third of its population from the 1980s.<sup>18</sup> Flint has been plagued by poverty and rampant crime, averaging a violent crime rate four times the national average.<sup>19</sup> Almost 42% of the city lives below the poverty line, and the median income for a household is about \$24,862.<sup>20</sup> Cities like Flint are horror stories of deindustrialization: the number of people living in the city collapses, which leads to declining tax revenues, which means fewer public services and a vicious spiral of economic decline.<sup>21</sup> All of these problems were further exacerbated by economic downturns like the Great Recession in 2008.<sup>22</sup> In 2012, Flint was facing a \$19 million deficit.<sup>23</sup>

These economic conditions have created a political environment in which politicians have sought to impose strict fiscal responsibility.<sup>24</sup> This has generally included policies of cuts

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14. *Id.* at xx-xxi.

15. *Id.*; *Auto Industry*, MICH. HIST., <http://michiganhistory.leadr.msu.edu/auto-industry/> [<https://perma.cc/3YVH-DPQZ>] (last visited Nov. 2, 2017).

16. Dandaneau, *supra* note 13, at xxi.

17. *Id.*

18. U.S. CENSUS BUREAU, *Flint City*, Mich. (2010); U.S. CENSUS BUREAU, *Flint City*, Mich. (1980).

19. Sarah Ganim & Linh Tran, *How Tap Water Became Toxic in Flint, Michigan*, CNN (Jan. 13, 2016), <http://www.cnn.com/2016/01/11/health/toxic-tap-water-flint-michigan/> [<https://perma.cc/C4UG-4CEU>]; *Reported Annual Crime in Flint*, <http://www.areavibes.com/flint-mi/crime/> [<https://perma.cc/E5AB-UENK>] (last visited Nov. 2, 2017).

20. U.S. CENSUS BUREAU, *Flint City*, Mich. (2016).

21. Annie Snider, *Flint's Other Water Crisis: Money*, POLITICO (Mar. 7, 2016), <https://www.politico.com/story/2016/03/flint-lead-water-contamination-money-220391> [<https://perma.cc/3867-CG5T>]; Dandaneau, *supra* note 13, at xx.

22. Edward Hoogterp, *Great Recession Leaves Michigan Poorer, Census Numbers Show*, MICH. NEWS (Oct. 23, 2011), [http://www.mlive.com/news/index.ssf/2011/10/great\\_recession\\_leaves\\_michiga.html](http://www.mlive.com/news/index.ssf/2011/10/great_recession_leaves_michiga.html) [<https://perma.cc/DE7P-RGWU>].

23. Steve Carmody, *Flint May Pursue Loan to Pay Off Remaining Budget Deficit*, MICH. RADIO (April 9, 2015), <http://michiganradio.org/post/flint-may-pursue-loan-pay-remaining-budget-deficit> [<https://perma.cc/JV3P-N3BB>].

24. Eric Levitz, *The Republican Party Must Answer for What It Did to Kansas and Louisiana*, N.Y. MAG. (Mar. 18, 2016), <http://nymag.com/daily/>

to both taxes and public spending for all things, including infrastructure investment.<sup>25</sup> This stringent governing philosophy of the governors and legislatures in states, like Wisconsin, Kansas, and Michigan, has led to vastly reduced public sectors and investment.<sup>26</sup> In 2011, Michigan Governor, Rick Snyder signed Act 4, the state's "emergency manager law."<sup>27</sup> This measure had existed in some form since 1990, but was strengthened by giving unchallenged authority to the managers under Act 4.<sup>28</sup> The act's goal was to help cities in financial distress like Flint and Detroit prosper again.<sup>29</sup> The law allows a manager to be appointed and in charge of a city's finances and municipal decisions, with the ability to override all measures enacted by the locally elected government.<sup>30</sup> The manager can then sell off any assets he or she desires to accomplish financial solvency, while local government is unable to challenge any decision made by the manager.<sup>31</sup> A Federal Appeals Court recently upheld the constitutionality of this law in September of 2016.<sup>32</sup>

Like much of the Rust Belt, Michigan is plagued by aging water infrastructure that is in dire need of upgrade and funding.<sup>33</sup> The American Society of Civil Engineers gave Michigan a grade of D in its infrastructure investment in 2009, even before

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intelligencer/2016/03/gop-must-answer-for-what-it-did-to-kansas.html [https://perma.cc/T3BX-7KYJ].

25. *Id.*

26. *Id.*; Lindsay Vanhulle, *Budget Proposal Includes Spending, Cuts, Making Room for Tax Cut or Debt Payments*, CRAIN'S DETROIT BUS. (Apr. 24, 2017), <http://www.craindetroit.com/article/20170423/NEWS/170429949/budget-proposal-includes-spending-cuts-making-room-for-tax-cut-or> [https://perma.cc/5M3C-N79L]; David Bailey & Stefanie Carano, *Wisconsin Governor Unveils Deep Spending Cuts*, REUTERS (Mar. 1, 2011), <https://www.reuters.com/article/us-wisconsin-budget/wisconsin-governor-unveils-deep-spending-cuts-idUSTRE72041C20110301> [https://perma.cc/7MHL-7APD].

27. Josh Hakala, *How Did We Get Here? A Look Back at Michigan's Emergency Manager Law*, MICH. RADIO (Feb. 3, 2016), <http://michiganradio.org/post/how-did-we-get-here-look-back-michigans-emergency-manager-law> [https://perma.cc/D77E-JG95].

28. *Id.*

29. See Sherwin, *supra* note 4, at 682-83.

30. *Id.*

31. *Id.*

32. Matt Vasilogambros, *Upholding Michigan's Emergency Manager Law*, THE ATLANTIC (Sept. 12, 2016), <http://www.theatlantic.com/news/archive/2016/09/michigan-emergency-manager-law/499658/> [https://perma.cc/7S86-YENH].

33. 2009 *Michigan Infrastructure Report Card*, AM. SOC'Y OF CIV. ENGINEERS 1, 17 (2009), [http://sections.asce.org/michigan/michiganreportcard/\\_files/ASCEMI-Infrastructure-Report.pdf](http://sections.asce.org/michigan/michiganreportcard/_files/ASCEMI-Infrastructure-Report.pdf) [https://perma.cc/4CCY-Q46M].

Governor Snyder signed the emergency manager law.<sup>34</sup> This includes a D report card rating for drinking water infrastructure, and a C rating for treating wastewater.<sup>35</sup> The group estimates that \$13.8 billion is needed just in Michigan over the next 20 years to make the necessary upgrades for safe drinking water, and an additional \$3.7 billion is needed for treating wastewater.<sup>36</sup>

Slashing public expenditure while balancing the need to make necessary infrastructure upgrades is challenging.<sup>37</sup> These budget priorities and pressures in a struggling city like Flint encouraged the emergency manager—whose primary focus was stabilizing the city’s budget—to push the city to save a few million dollars by immediately switching Flint’s water source while the city prepared to pipe in water from Lake Huron.<sup>38</sup> While the city council symbolically supported the piping project to Lake Huron by a 7-1 vote, the council did not make any decision in regards to switching the city to the Flint River, and because of the emergency manager law, had no power to make the decision anyway.<sup>39</sup>

### III. BUREAUCRATIC FAILURE

#### A. *Negligence on the Part of Michigan State Government*

The responsibility for the Flint water crisis falls, first and foremost, on the officials of Flint and Michigan who repeatedly failed to heed warning signs.<sup>40</sup> The most obvious failure is that the state government simply failed to properly test the water to assure that it was safe for drinking.<sup>41</sup> Given the city’s industrial nature, the Flint River was victim to industrial runoff and waste since at least the 1830s.<sup>42</sup> Furthering the river’s poor health, the auto manufacturers contributed their own share of chemicals over the booming industrial periods.<sup>43</sup> Raw sewage was also disposed

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34. *Id.* at 1.

35. *Id.* at 15, 48.

36. *Key Facts About Michigan’s In*, AM. SOC’Y OF CIV. ENGINEERS (2017), <https://www.infrastructurereportcard.org/wp-content/uploads/2016/10/Michigan-Final.pdf> [<https://perma.cc/8N9B-4Y5E>].

37. *See generally* Vasilogambros, *supra* note 33.

38. Sherwin, *supra* note 4, at 683, 698.

39. *Id.* at 661.

40. *Id.* at 663, 696.

41. *Id.* at 661.

42. *Id.* at 658.

43. *Id.* at 659.

of in the river, and evidence of runoff of ammonia, chlorine, and phenol in the river is present.<sup>44</sup> Multiple environmental disasters, including several accidental exposures to waste from ruptured sewer lines, also contribute to the river's poor health.<sup>45</sup> As early as 1999, James Helmstetter, the Genesee County Director of Environmental Health, stated, "[a]s far as we know, no [community] uses the Flint River for a drinking water source," in response to concerns about the excess pollution in the river.<sup>46</sup> According to experts, this repeated pollution made the river nineteen times more corrosive than the previous water system used by Flint from Detroit.<sup>47</sup> Given the river's history and exposure to various forms of pollution, the consequences of not testing the water were catastrophic.<sup>48</sup>

In the summer of 2014, just a few months after the switch from the Detroit water supply to the Flint River, residents in parts of Flint were told by Flint officials to boil their water due to elevated levels of *E. Coli* in the tap water.<sup>49</sup> In June 2014, there was an outbreak of Legionnaires disease, a pneumonia that forms when water is exposed to untreated sewage.<sup>50</sup> The outbreak sickened eighty-nine and killed nine.<sup>51</sup> To treat these problems, the city put disinfectants into the water supply, a byproduct of which was Trihalomethane (THM), a compound linked to organ failure as well as cancer.<sup>52</sup> State officials publicly said that the outbreak of Legionnaires could not be linked to the Flint River water supply, but privately, state officials expressed concerns in internal emails of just that as early as October of 2014.<sup>53</sup> In January of 2015, an environmental health supervisor stated he believed the outbreak closely corresponded with the switch to the Flint River water supply,<sup>54</sup> but a spokesman for the State

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44. *Id.*

45. *Id.* at 659-60.

46. *Id.* at 660 (quoting Tim Carmondy, *How Flint River Got so Toxic*, THE VERGE (Feb. 26, 2016), <https://www.theverge.com/2016/2/26/11117022/flint-michigan-water-crisis-lead-pollution-history> [<https://perma.cc/24QB-CZG2>]).

47. Ganim & Tran, *supra* note 19.

48. Sherwin, *supra* note 4, at 661.

49. *Id.* at 661-62.

50. *Id.* at 662-63.

51. *Id.* at 663.

52. *Id.* at 662.

53. Leonard N. Fleming & Michael Gerstein, *Email: Legionnaires Assertion Would 'Inflame Situation'*, THE DETROIT NEWS (June 19, 2017), <http://www.detroitnews.com/story/news/michigan/flint-water-crisis/2017/06/19/flint-emails-legionnaires-water/103026954/> [<https://perma.cc/3YPR-3XMW>].

54. Jim Lynch, Michigan Officials Warned of Legionnaires' Link, THE DETROIT

Department of Environmental Protection declared the suggestion “beyond irresponsible.”<sup>55</sup>

In February of 2015, a utilities administrator tested the lead levels in the Flint family home of Lee Ann Walters.<sup>56</sup> The administrator told her that lead levels in her water showed 104 parts per billion in one test, and 397 in another, both far above the federally mandated action level of 15 parts per billion.<sup>57</sup> Her four-year-old tested positive for lead poisoning.<sup>58</sup> The city continually assured her and the community that the water was safe to drink.<sup>59</sup> Walters contacted the EPA, and water specialist Miguel Del Toral traveled to Flint to conduct a test of her water.<sup>60</sup> Del Toral’s test revealed the water contained lead levels of 13,200 parts per billion, which is twice the level of what is considered hazardous waste by the EPA.<sup>61</sup>

The high concentration of lead in the water can be attributed to the toxic, bacteria-infested water’s severe corrosiveness.<sup>62</sup> Because the Flint River’s water is nineteen times more corrosive than the water from Detroit, toxic lead particles began flaking off Flint’s pipes, allowing lead to leach into the city’s water.<sup>63</sup> Residents immediately complained to the city about the color, smell, and taste of the water.<sup>64</sup> State officials continued to assure residents that their water was completely safe to drink, as Michigan employee Michael Prysby did when he issued a press release for the Michigan Department of Environmental Quality (MDEQ) on April 25, 2014, stating, “[t]he quality of the water being put out meets all of our drinking water standards and Flint water is safe to drink.”<sup>65</sup>

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NEWS (Feb. 4, 2016) <http://www.detroitnews.com/story/news/michigan/flint-water-crisis/2016/02/04/flint-water-crisis-lehionnaires/79828822/> [<https://perma.cc/6CS5-B5W9>].

55. Sherwin, *supra* note 4, at 664.

56. *Id.* at 664, 694.

57. *Id.* at 664, 693.

58. *Id.* at 664.

59. *Id.*

60. *Id.*

61. *Id.*

62. Ganim & Tran, *supra* note 19.

63. *Id.*

64. Julie Bosman et al., *As Water Problems Grew, Officials Belittled Complaints From Flint*, THE NEW YORK TIMES (Jan. 20, 2016), <https://www.nytimes.com/2016/01/21/us/flint-michigan-lead-water-crisis.html> [<https://perma.cc/E5QM-QTJ7>].

65. Merrit Kennedy, *Lead-Laced Water in Flint: A Step-By-Step Look At The Makings Of A Crisis*, NPR (Apr. 20, 2016), <http://www.npr.org/sections/thetwo-way/2016/04/20/465545378/lead-laced-water-in-water-in0flint-a-step-by-step-look-at->

To control corrosion of pipes, cities are required by the EPA to add corrosion control to the water supply to be within compliance of the Federal Safe Water Drinking Act of 1974.<sup>66</sup> The act requires consistent testing and proper notice to users of the water when contaminants are detected.<sup>67</sup> Corrosion control of lead pipes originated from the EPA in a 1991 regulation known as the Lead and Copper Rule (LCR), which tried to mitigate the immense costs required for upending the entire plumbing of the U.S. to remove lead pipes<sup>68</sup> (which was banned from use in 1986);<sup>69</sup> as a stop gap measure, corrosion control chemicals create a protective film coating on the inside of pipes to reduce the leaching of lead from these pipes.<sup>70</sup> The MDEQ simply failed to require the city to implement this proper corrosion control, and the corrosion of the pipes in the city caused irreversible damage that couldn't be fixed by belatedly applying the corrosion control.<sup>71</sup> The addition of the proper, basic corrosion control to the Flint water supply would have cost the city approximately one hundred dollars per day.<sup>72</sup>

Marc Edwards, a scientist from Virginia Tech whose team broke the story of the Flint contamination to the national media, said that the MDEQ failed to meet testing protocol of water set out by the EPA in critical ways.<sup>73</sup> In February of 2015, the same month Lee Ann Walter's water was tested positive for harmful levels of lead exposure, a state official at MDEQ inaccurately told an EPA official that Flint had proper corrosion control in place.<sup>74</sup> Additionally, the state denied that it was required to comply with corrosion control until further testing had been completed.<sup>75</sup> The

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the-making-of-a-crisis [<https://perma.cc/NUT7-N8YC>] (citing Press Release, City of Flint, Mich. City Hall, City of Flint Officially Begins Using Flint River as Temporary Primary Water Source (Apr. 25, 2014) (on file with City of Flint, Mich. City Hall).

66. Ganim & Tran, *supra* note 19; Sherwin, *supra* note 4, at 688.

67. Sherwin, *supra* note 4, at 688.

68. *Id.*

69. *Id.* at 688-89.

70. *Id.* at 691.

71. *Id.* at 692.

72. Ganim & Tran, *supra* note 19.

73. Sherwin, *supra* note 4, at 693.

74. *Id.* at 694; Lindsey Smith, *State Admits Flint Did Not Follow Federal Rules Designed to Keep Lead Out of Water*, NPR MICH. RADIO (Oct. 18, 2015), <http://michiganradio.org/post/state-admits-flint-did-not-follow-federal-rules-designed-keep-lead-out-water> [<https://perma.cc/4MG3-MQ7H>].

75. Mark Brush, *Who's to Blame for Flint's Water Crisis? Virginia Tech Researcher Points the Finger at MDEQ*, NPR MICH. RADIO (Oct. 1, 2015), <http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech>.

state justified its sparse monitoring and quality standards by pointing to a change in the Lead and Copper Rule regulation in the year 2000, which allowed water quality departments more relaxed standards for reporting and monitoring.<sup>76</sup> Edwards found the lead sampling the city conducted to be ineffective and deliberately minimizing the results with incorrect testing methodology.<sup>77</sup> On July 28, 2015, the MDEQ tested seventy-one samples where the 90<sup>th</sup> percentile measured at 18.8 parts per billion with lead, notably 3.8 parts per billion higher than the federally mandated action level of fifteen.<sup>78</sup> On August 20, 2015, two of the higher testing samples of lead parts were removed by the MDEQ and water operating company, which reduced the 90<sup>th</sup> percentile measurement down to 12.2 parts per billion.<sup>79</sup> The MDEQ claimed a sampling error.<sup>80</sup>

Marc Edwards further pointed out the failure of MDEQ testing in a blog post:

“By law [under the Safe Water Drinking Act], at least 50 percent of the homes sampled must be verified to have lead pipe, and the remainder of homes sampled must have been built before 1986 and known to have lead solder. There is no basis for believing that this requirement was met in either the 2014 or 2015 LCR sampling events conducted by the City. Hence, the City of Flint has not had a valid LCR sampling event since the switch to Flint River water.”<sup>81</sup>

Health officials were failing in their duty to do basic testing of the waters, and were using the LCR as an excuse for inaction.<sup>82</sup>

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researcher-points-finger-mdeq [<https://perma.cc/B7HA-CUBL>].

76. *Lead and Copper Rule: Drinking Water Requirements for States and Public Water Systems*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/dwreginfo/lead-and-copper-rule> [<https://perma.cc/G2MH-NQCH>] (last visited Oct. 6, 2017).

77. Sherwin, *supra* note 4, at 694.

78. *Id.* at 695.

79. *Id.*

80. *Id.*

81. Marc Edwards et al., *Commentary: MDEQ Mistakes and Deception Created the Flint Water Crisis*, FLINT WATER STUDY UPDATES (Sept. 30, 2015), <http://flintwaterstudy.org/2015/09/commentary-mdeq-mistakes-deception-flint-water-crisis/> [<https://perma.cc/S5JW-DZ6B>].

82. Brush, *supra* note 75; Lindsey Smith, *Michigan Pushes to Have Nation's Toughest Lead Water Rules*, NPR MICH. RADIO (Nov. 13, 2017),

There is also evidence that state officials outside of the MDEQ were concerned that the water switch was causing harm early on.<sup>83</sup> In October of 2014, emails from staffers within the governor's office expressed concern of a possible connection between the Legionnaires outbreak and the new water supply.<sup>84</sup> Michael Gadola, Governor Snyder's legal counsel at the time, said the city "should try to get back on the Detroit system as a stopgap ASAP before this thing gets too far out of control."<sup>85</sup>

As late as July of 2015, only a few months after tests were showing harmful levels of lead, an MDEQ spokesman said, "anyone who is concerned about lead in the drinking water in Flint can relax."<sup>86</sup> Despite these huge warning flags and the emergence of a real public health crisis, when the federal EPA issued orders to Flint to act on the crisis, the MDEQ asserted that the EPA lacked authority to order it to do anything:

We would note that under Section 1431, the administrator has the authority to consult with the State and local authorities to confirm the correctness of the information on which [the order] is based and to ascertain the action which such authorities are or will be taking. We welcome such a consultation.<sup>87</sup>

As of November 22, 2016, 2.5 years after the crisis began, residents of Flint still did not have guaranteed access to clean drinking water.<sup>88</sup> The current Mayor of Flint isn't confident that

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<https://www.npr.org/2017/11/13/563692086/michigan-pushes-to-have-nations-toughest-lead-water-rules> [<https://perma.cc/C79F-H597>].

83. Matthew Dolan & Paul Egan, *Top Snyder Aides Urged Going Back to Detroit Water*, DETROIT FREE PRESS (Feb. 26, 2016), <http://www.freep.com/story/news/local/michigan/flint-water-crisis/2016/02/26/flint-water-crisis-snyder-detroit/80926138/> [<https://perma.cc/JBH2-A5GX>].

84. *Id.*

85. *Id.*

86. Lindsey Smith, *Leaked Internal Memo Shows Federal Regulator's Concerns About Lead in Flint's Water*, NPR MICH. RADIO (July 13, 2015), <http://michiganradio.org/post/leaked-internal-memo-shows-federal-regulator-s-concerns-about-lead-flint-s-water> [<https://perma.cc/A932-G5EK>].

87. Sherwin, *supra* note 4, at 703 (quoting Letter from Keith Creagh, Dir., Mich. Dep't of Env'tl. Quality, to Gina McCarthy, Adm'r, EPA (Jan. 22, 2016), [http://www.epa.gov/sites/production/files/2016-01/documents/mdeq-response\\_0.pdf](http://www.epa.gov/sites/production/files/2016-01/documents/mdeq-response_0.pdf) [<https://perma.cc/84X2-L9LX>]).

88. Katie Herzog, *Flint Still Doesn't Have Safe Drinking Water*, BUS. INSIDER (Nov. 22, 2016).

she can recommend residents drink their tap water without a filter for at least another two years either, when crews are expected to finish removing every lead service line in the city.<sup>89</sup>

### ***B. The EPA Did Not Sound the Alarm***

The EPA also bears some blame in the agency's decision not to publicly raise the alarm. The EPA had the combination of complaints from Flint citizens, warnings from EPA employees, and the total authority through the Safe Water Drinking Act to act on enforcing existing law that may have prevented the worst damage now felt by Flint.<sup>90</sup> Proposed solutions by the EPA ignore the fact that these existing regulations were simply unenforced.<sup>91</sup> While such regulatory changes might be a positive step, they do not effectively address the serious deficiencies of the inter-agency handling of the crisis as it unfolded.

In July 2015, after Miguel Del Toral conducted the test showing lead contamination greater than twice the level of hazardous waste in a home, he sent a memorandum to his superiors: “[r]ecent drinking water sample results indicate the presence of high lead results in the drinking water, which is to be expected in a public water system that is not providing corrosion control treatment.”<sup>92</sup> EPA superiors, who appeared more concerned with the appearance of sounding alarmist, brushed Del Toral's concerns aside.<sup>93</sup> EPA supervisor Jennifer Crooks said in an email, “I’ll bet that the state will take this personally since they are responsible . . . which isn’t a bad thing, but they may get VERY defensive.”<sup>94</sup> When the internal memo was leaked to the ACLU

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89. Jonathan Oosting, *Flint: ‘All Clear’ For Drinking Water Still Years Away*, THE DETROIT NEWS (Mar. 7, 2017), <http://www.detroitnews.com/story/news/michigan/flint-water-crisis/2017/03/07/flint-water-conference/98862674/> [https://perma.cc/G4KV-943M].

90. Bosman et al., *supra* note 63; Safety of Public Water Systems, 42 U.S.C. § 300i (2002); *see generally* Sherwin, *supra* note 4.

91. *See generally* U.S. ENVTL. PROTECTION AGENCY, LEAD AND COPPER RULE REVISIONS WHITE PAPER, Oct. 26, 2016, [https://www.epa.gov/sites/production/files/201610/documents/508\\_lcr\\_revisions\\_white\\_paper\\_final\\_10.26.16.pdf](https://www.epa.gov/sites/production/files/201610/documents/508_lcr_revisions_white_paper_final_10.26.16.pdf) [https://perma.cc/EAC9-UPZL].

92. ENVTL. PROTECTION AGENCY, HIGH LEAD LEVELS IN FLINT, MICHIGAN-INTERIM REPORT, June 24, 2015, <http://flintwaterstudy.org/wp-content/uploads/2015/11/Miguels-Memo.pdf> [https://perma.cc/ZQ95-M28A].

93. Todd Spangler & Paul Egan, *Emails: EPA Indecision Led to Inaction in Flint Crisis*, DETROIT FREE PRESS (May 13, 2016), <http://www.freep.com/story/news/local/michigan/flint-water-crisis/2016/05/12/epa-concerns-contradictions-flint/84299484/> [https://perma.cc/6WMU-8H2A].

94. *Id.*

in July of 2015, Region 5 director Susan Hedman apologized to the Flint mayor for the information not being fully vetted.<sup>95</sup> The discrediting of Del Toral was underscored by the Flint Mayor's statement saying, "[i]t's dangerous for a candidate to make allegations that are not based on fact," and an MDEQ spokesman who said, "rogue employee" wrote the report.<sup>96</sup>

Despite the emergency powers that allow the EPA to act in this situation<sup>97</sup>, they appeared more interested in applying non-public pressure to Michigan behind the scenes, as to not upset Michigan state officials at MDEQ. This was evidenced by Jennifer Crooks in another email where she wanted to avoid the information coming off as "from my perspective . . . aggressive/controversial."<sup>98</sup> "If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it," Marc Edwards said in a statement,<sup>99</sup> referencing the text of the Safe Water Drinking Act which provides the EPA with broad authority to dictate local municipalities:

SDWA section 1431, 42 U.S.C. §300i gives the EPA Administrator broad authority to act to protect the health of persons in situations where there may be an imminent and substantial endangerment. Specifically, section 1431 provides that, **upon receipt of information that a contaminant that is present in or likely to enter a public water system or an underground source of drinking water**, or there is a threatened or potential terrorist attack or other intentional act, that may present an imminent and substantial endangerment to the health of persons, **the EPA Administrator may take any action she deems necessary to protect human health.**<sup>100</sup>

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95. Lindsey Smith, *After Blowing the Whistle on Flint's Water, EPA "Rogue Employee" Been Silent. Until Now*, MICH. RADIO (Jan. 21, 2016), <http://michiganradio.org/post/after-blowing-whistle-flints-water-epa-rogue-employee-has-been-silent-until-now> [<https://perma.cc/J9JV-QLNJ>].

96. *Id.*; *The EPA Flint Abdication*, THE WALL STREET J. (Mar. 17, 2016) <https://www.wsj.com/articles/the-epas-flint-abdication-1458258027> [<https://perma.cc/S47B-7CW4>].

97. Brush, *supra* note 75.

98. Spangler & Egan, *supra* note 93.

99. Brush, *supra* note 75.

100. Safe Drinking Water Act (SDWA) and Federal Facilities: Enforcement, U.S.

The failure to act on this authority in the face of an unfolding catastrophe showcases a toxic political environment. It was deemed less harmful for administrators in Michigan and the EPA to simply sit on its hands, ignoring irrefutable evidence that something was terribly wrong, than to act in the public interest.

#### IV. CAUSES OF THE INSTITUTIONAL FAILURE

In proposing solutions, agencies and authors including the EPA, suggest making changes to the Safe Water Drinking Act, the LCR, in addition to providing better education for local municipalities, and generally requiring better reporting to bring concerns forward faster.<sup>101</sup> But what these solutions ignore is that the EPA had sufficient emergency authority powers to respond to the Flint crisis like the extreme environmental catastrophe it was.<sup>102</sup>

Michigan state officials—like those at the MDEQ—had ample information to understand the basic dangers the Flint water had.<sup>103</sup> Furthermore, both officials in Michigan and the EPA disregarded and lied about clear evidence that Flint's water had effectively been poisoned, and that its citizens were experiencing harmful effects.<sup>104</sup> The proposed reforms that target the alleged confusion in water control action might be welcomed by public observers, but the notion that these reforms would have prevented the Flint crisis neglects to address the criminal negligence of MDEQ officials.<sup>105</sup> It should have been obvious with basic research to MDEQ workers that the Flint water was toxic and corrosive. Clear warning signs went ignored even after numerous complaints.<sup>106</sup> Failures to admit or recognize these facts has created a severe health crisis that could result in the cost of hundreds of millions of dollars in social and economic costs for Flint, a city already reeling from the decline of the auto

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ENVTL. PROTECTION AGENCY, <https://www.epa.gov/enforcement/safe-drinking-water-act-sdwa-and-federal-facilities> [<https://perma.cc/742G-HHEC>], (last visited Oct. 29, 2017) (emphasis added).

101. Sherwin, *supra* note 4, at 719.

102. Safety of Public Water Systems, 42 U.S.C. § 300hh (2006).

103. See Sherwin, *supra* note 4.

104. *Id.*

105. Sara Ganim & Ray Sanchez, *Flint Water Crisis: New Criminal Charges Are Brought*, CNN (Aug. 3, 2016), <http://www.cnn.com/2016/07/29/us/flint-water-crisis-charges/> [<https://perma.cc/XC9C-5WDZ>].

106. *Id.*

industry.<sup>107</sup>

The EPA should have recognized the Flint water crisis unfolding as a major public health emergency that required immediate action. The EPA's hesitance to sound public alarm bells represents a horrifying failure of the core of what a federal environmental agency is supposed to do. The necessary regulations for the EPA to act were present and totally sufficient.<sup>108</sup> It rightly thought that it had proper authority to intervene when it did, and yet it still waited nearly a year after the initial reporting level for lead contamination was met and internally reported by one of its agents.<sup>109</sup>

A better problem to address might be the institutional culture that has contributed to the behaviors of state and federal agencies here. What could be a far more determinative factor in causing this crisis are the cold realities of finance and politics.<sup>110</sup> The EPA is now a frequent target to the most critical condemnations and political battles in Washington.<sup>111</sup> In June of 2015, Republicans in the House Appropriations Committee passed a bill that slashed the EPA's funding by nine percent.<sup>112</sup> The committee chair hailed the cuts as necessary to rein in an "unnecessary, job-killing regulatory agenda."<sup>113</sup> Senate Majority Leader Mitch McConnell called Obama administration regulatory actions "an all-out assault on the American economy."<sup>114</sup> In January, 2016, a year after the Flint crisis became a national news story, Speaker of the House Paul Ryan wrote an op-ed criticizing unrelated water regulations the EPA was proposing: "Congress will continue to make sure people who depend upon

107. Josh Sanburn, *Flint Water Crisis May Cost the City \$400 Million in Long Term Social Costs*, TIME (Aug. 8, 2016), <http://time.com/4441471/flint-water-lead-poisoning-costs/> [https://perma.cc/X3EB-YS47].

108. Safety of Public Water Systems, 42 U.S.C. § 300 (2006).

109. Smith, *supra* note 95.

110. Sherwin, *supra* note 4, at 697.

111. Jack Fitzpatrick, *Cuts to EPA Staff Would Entail Political Battle Over Regional Offices*, MORNING CONSULT (Apr. 24, 2017), <https://morningconsult.com/2017/04/24/cuts-epa-staff-entail-political-battle-regional-offices/> [https://perma.cc/FU9H-XKRRK].

112. Devin Henry, *House Panel Approves \$30.17B Bill Cutting EPA Funds, Blocking Rules*, THE HILL (June 16, 2015), <http://thehill.com/policy/energy-environment/245137-house-panel-approves-3017b-bill-to-cut-epa-funds-block-climate> [https://perma.cc/UE6N-HNFG].

113. *Id.*

114. Geof Koss, *Tempers Flare as Senate Panel Oks Interior-EPA Spending Bill*, GREENWIRE (June 18, 2015), <https://www.eenews.net/stories/1060020491> [https://perma.cc/2Z5S-E8VY].

this indispensable resource are not imperiled by an overzealous federal bureaucracy.”<sup>115</sup> Lawsuits regarding proposed power plant and water regulations against the EPA have become increasingly common as well.<sup>116</sup>

The point is not that everything the EPA proposes or does is good or bad. The point is that the EPA is now seen by many states and conservative leaders as an enemy regulatory agency and political tool of radical environmental policy. As a result, the EPA is facing a declining budget, numerous lawsuits, and severe pushback from states.<sup>117</sup> Given all of this, it is easier to understand why the director of the EPA region overseeing Flint, especially after reading Del Toral’s report, tried to quietly apply pressure to MDEQ officials to start adding proper corrosion control rather than asserting EPA emergency authority against a state in the face of a public health catastrophe.<sup>118</sup> The political willpower to insert itself into the negligent action of state officials carries necessary blowback. In released emails, EPA employees expressed concern about the defensiveness they were likely to get from telling MDEQ about problems in Flint.<sup>119</sup> And indeed, state officials at MDEQ were openly defiant until the crisis was in full swing.<sup>120</sup> Spokesmen and others in Michigan continually assured Flint residents their water was fine, even though they were being given every indication that it was not.<sup>121</sup> The EPA has exercised its emergency powers under section 1431 before,<sup>122</sup> but the agency has never faced the kind of local governmental pushback that it has received from Michigan officials during this crisis.

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115. Paul Ryan, *Water Rules Show EPA’s Overreach*, OMAHA WORLD-HERALD (Jan. 13, 2016), [http://www.omaha.com/opinion/paul-ryan-water-rules-show-epa-s-overreach/article\\_79487f96-cca1-5afa-a194-4d63a398c2aa.html](http://www.omaha.com/opinion/paul-ryan-water-rules-show-epa-s-overreach/article_79487f96-cca1-5afa-a194-4d63a398c2aa.html) [https://perma.cc/H43U-PR5P].

116. Timothy Cama, *Two Dozen States Sue Obama Over Coal Plant Emissions Rule*, THE HILL (Oct. 23, 2015), <http://thehill.com/policy/energy-environment/257856-24-states-coal-company-sue-obama-over-climate-rule> [https://perma.cc/GF8E-6EJ2].

117. *Id.*; see also Henry, *supra* note 112.

118. Spangler & Egan, *supra* note 93.

119. *Id.*

120. E-mail from Keith Creagh, Dir. of Mich. Dep’t. of Env’tl. Quality, to Gina McCarthy, Adm’r U.S. Env’tl. Protection Agency (Jan. 22, 2016) (on file with the Dep’t of Env’tl. Quality).

121. Kennedy, *supra* note 65.

122. U.S. ENVTL. PROTECTION AGENCY, ADMINISTRATIVE ORDER ON CONSENT (Mar. 19, 2013), [https://www3.epa.gov/region10/pdf/sites/yakimagw/consent\\_order\\_yakima\\_valley\\_dairies\\_march2013.pdf](https://www3.epa.gov/region10/pdf/sites/yakimagw/consent_order_yakima_valley_dairies_march2013.pdf) [https://perma.cc/454N-GTPN]; U.S. ENVTL. PROTECTION AGENCY, ADMINISTRATIVE ORDER ON CONSENT (Nov. 20, 2006), <https://www.epa.gov/sites/production/files/2016-05/documents/sdwadupont06.pdf> [https://perma.cc/SE9N-43DN].

Michigan officials at all levels were under intense pressure to squeeze the budgets of troubled cities like Detroit and Flint, and were disregarding common sense measures of public health and safety.<sup>123</sup> Emergency managers like the one in Flint are put in charge to manage the city with the purpose of getting the deficit under control. These managers act as political appointees with no local accountability to the people that are most impacted by these decisions.<sup>124</sup> Critical observers have noted the disproportionate effect on the poor and minority communities of Flint, even suggesting that officials would be less likely to ignore such warning signs in more affluent, white communities.<sup>125</sup> A pragmatic view from the eyes of Michigan officials obsessed with budgetary matters makes a crisis such as this all but inevitable, particularly for a poor community like Flint.<sup>126</sup> In the wake of the financial crisis that squeezed state resources, the most pressing concern in their eyes was the red ink in the budget. As of June 14, 2017, fifteen people, including two former emergency managers of Flint, have been charged by Michigan's Attorney General for crimes related to the crisis ranging from involuntary manslaughter to obstruction of justice.<sup>127</sup>

## V. PREVENTING FUTURE FLINTS

### A. *Immediate Relief*

Flint is one of many aging industrial cities that were at risk for a manmade catastrophe such as this.<sup>128</sup> The EPA has flagged many other cities in the rust belt, like Milwaukee, WI, as having the same kinds of risks with lead pipes delivering drinking water.<sup>129</sup> Even replacing these lead lines for houses in cities can

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123. Bosman et al., *supra* note 83.

124. *Id.*

125. Shawna J. Lee et al., *Racial Inequality and the Implementation of Emergency Management Laws in Economically Distressed Urban Areas*, 70 CHILD AND YOUTH SERVICES REV. 1, 1, 6 (2016).

126. Bosman et al., *supra* note 83.

127. Sara Ganim, *Michigan Officials Charged in Flint Legionnaires' Outbreak*, CNN (June 14, 2017), <http://www.cnn.com/2017/06/14/health/flint-water-crisis-legionnaires-manslaughter-charges/index.html> [<https://perma.cc/DA7D-W3NR>].

128. Michael Wines & John Schwartz, *Unsafe Lead Levels in Tap Water Not Limited to Flint*, N.Y. TIMES (Feb. 8, 2016), <https://nyti.ms/2jLogr4> [<https://perma.cc/L8NZ-JCWS>].

129. John Seewer & David Eggert, *Lead Pipes Lurk in Older Neighborhoods Across the Nation*, SUN-SENTINEL (Jan. 23, 2016), <http://www.sun-sentinel.com/news/nationworld/sfl-lead-pipes-lurk-in-older-neighborhoods-across-the>

disturb the water systems and release toxic flakes.<sup>130</sup> Short of an entire infrastructure upgrade in both public and private property throughout these cities, the danger of lead or other harmful contamination to water supplies will be prone to potential bureaucratic failures or changes in water chemistry.

The solution to both the problems of institutional indifference in enforcing regulation and decrepit water infrastructure must come from the federal government. State governments, usually by law, cannot run budget deficits.<sup>131</sup> Their resources and tax bases are smaller, and the problems of water infrastructure investment will cost billions for nearly every state government, and by some estimates, up to several trillion dollars nationwide.<sup>132</sup> Contamination issues and lack of supply without these upgrades will cost local economies like those in Flint millions of dollars in worker output and domestic spending.<sup>133</sup> The federal government, on the other hand, is not under the constraint of running a balanced budget, as it can issue debt.<sup>134</sup> It has the resources, but currently lacks the will to make the massive investment needed to make base level improvements in public health. Current programs like the Drinking Water State Revolving Fund and Clean Water State Revolving Fund provide capitalization grants and financing mechanisms to provide local infrastructure upgrades.<sup>135</sup> However, the improvements are financially too small to make a large impact on national infrastructure, and are at best stopgap measures to a national problem that could lead to public health crises like Flint. In the short term, what is widely accepted is the need for Flint and similarly situated cities to provide lead filters to at risk residents

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nation-20160123-story.html [https://perma.cc/2QP2-YYKZ].

130. Cheryl Corley, *Chicago's Upgrades to Aging Water Lines May Disturb Lead Pipes*, NPR (Apr. 14, 2016), <http://www.npr.org/2016/04/14/474130954/chicagos-upgrades-to-aging-water-lines-may-disturb-lead-pipes> [https://perma.cc/T266-L3H8].

131. NAT'L CONF. OF ST. LEGISLATURES, STATE BALANCED BUDGET REQUIREMENTS EXECUTIVE SUMMARY (Apr. 12, 1999), <http://www.ncsl.org/research/fiscal-policy/state-balanced-budget-requirements.aspx> [https://perma.cc/M8XY-Z6N7].

132. *2013 Report Card for America's Infrastructure*, AM. SOC'Y OF CIV. ENGINEERS 1, 5 (Mar. 2013), <http://2013.infrastructurereportcard.org/> [https://perma.cc/Q7CP-CEAQ].

133. Sanburn, *supra* note 107.

134. GRANT A. DRIESSEN, CONG. RESEARCH SERV., R40767, HOW TREASURY ISSUES DEBT (2016).

135. U.S. ENVTL. PROTECTION AGENCY, LEARN ABOUT THE CLEAN WATER STATE REVOLVING FUND (CWSRF) (2017), <https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf> [https://perma.cc/LD2A-ZE4G].

who may have lead service lines.<sup>136</sup> A combination of local, state, and federal government funding needs to be allocated to these communities immediately to prevent the present and real threat of lead exposure, particularly for children, who are most at risk. In the past twenty years, there have been great strides in new filtration technologies like Granular Activated Carbon (GAC), which has a lead removal effectiveness of over ninety-nine percent, while also requiring only a fraction of operating costs compared to other standard brand filters.<sup>137</sup> The best short-term solution is to apply massive and immediate filtration investment to communities with lead pipes, delaying and mitigating the potential long term social and economic costs associated with accidental lead exposure through water systems, and therefore providing the necessary relief of emergency conditions to allow the fostering of carefully drafted plans by experts and lawmakers for the long term.

### ***B. Solutions for the Future***

For long-term solutions to lead contamination in the water supply, the United States will need to upgrade its entire aging water infrastructure system, including replacing all the lead service lines nationwide. What the federal government needs to do is supercharge the funding for water structure and water quality upgrades throughout the country in both infrastructure spending and EPA enforcement. These are basic public health investments that could boost economic activity, create thousands of infrastructure jobs, and prevent more man-made catastrophe like Flint from happening in the future. This funding will relieve pressures on state budgets and embolden the EPA to act with greater authority for the public good. The logistics of creating such legislation and enforcement are straightforward. The challenges of such legislation come from the political difficulty of pushing through a bill with the price tag of trillions of dollars in a clash of political will and fiscal choice.

But the costs of not upgrading the United States' water infrastructure are devastating.<sup>138</sup> Estimates on the current

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136. Jonathan Oosting & Michael Gerstein, *Expert: Without Filter, No Water Safe From Lead Pipes*, *Detroit News* (Sept. 28, 2016), <http://www.detroitnews.com/story/news/michigan/flint-water-crisis/2016/09/28/snyder-flint-water-crisis/91213822/> [https://perma.cc/E3ND-QYPQ].

137. Mohamed Ahmedna et al., *The Use of Nutshell Carbons in Drinking Water Filters for Removal of Trace Metals*, 38 *WATER RESEARCH* 1062, 1066-1067 (2004).

138. Am. Soc'y of Civ. Engineers, *supra* note 133, at 18.

amount of water wasted each day in the United States through leaky infrastructure total to around seven billion gallons per day.<sup>139</sup> An increasing population, the potential effects of climate change, and contamination issues on a strained water supply will only exacerbate the current water shortages that much of the country faces.<sup>140</sup> And it's not just California that would be effected. Forty states are projected to have water shortages in the next few years, according to a Government Accountability Office Survey in 2013.<sup>141</sup> These conditions have the potential to downsize prospects for economic growth and standards of living for people all around the United States. The United States could greatly benefit in treating water more like the precious commodity it is. By instituting real pricing for water and committing to strenuous conservation policies practiced by less water rich nations,<sup>142</sup> the United States could control water costs and assure sufficient national supplies during periods of drought or stress.

If water shortages and quality concerns are not enough to entice lawmakers into large infrastructure projects, perhaps the estimated economic benefits would. The Economic Policy Institute estimates that with just \$250 billion of debt financed investment into infrastructure projects, the United States economy would expand by \$400 billion, with a net increase of three million jobs and increased levels of employment over the seven-year life of that investment.<sup>143</sup> Such investments would also potentially improve economy wide productivity growth.<sup>144</sup> The savings from a reduction in water loss would also help, given

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139. Adam James, *The U.S. Wastes 7 Billion Gallons of Drinking Water a Day: Can Innovation Help Solve the Problem?*, THINK PROGRESS (Nov. 3, 2011), <https://thinkprogress.org/the-u-s-wastes-7-billion-gallons-of-drinking-water-a-day-can-innovation-help-solve-the-problem-f7877d6e3574/> [https://perma.cc/BM9M-9GDE].

140. James McBride, *The Beleaguered U.S. Water System*, COUNCIL ON FOREIGN RELATIONS (July 8, 2017), <https://www.cfr.org/backgrounder/beleaguered-us-water-system> [https://perma.cc/3Q77-N4AA].

141. Elaine S. Povich, *Drought is Not Just a California Problem*, USA TODAY (Apr. 18, 2015), <https://www.usatoday.com/story/news/nation/2015/04/18/california-drought-nationwide/25999193/> [https://perma.cc/4HFT-S58N].

142. See SETH SIEGEL, LET THERE BE WATER: ISRAEL'S SOLUTION TO A WATER STARVED WORLD 17-45 (2015).

143. Josh Bivens, *The Short- and Long-Term Impact of Infrastructure Investments on Employment and Economic Activity in the U.S. Economy*, ECON. POL'Y INST. (July 1, 2014), <http://www.epi.org/publication/impact-of-infrastructure-investments/> [https://perma.cc/JJX2-VWFC].

144. *Id.*

the cost of pumping seven billion gallons of water per day that goes to waste.<sup>145</sup> Those water savings could be rolled into new agriculture or industrial development, as well as improving municipal functions and costs. These economic benefits would provide an infrastructure upgrade that could be the foundation for further growth and better urban development.

## VI. CONCLUSION

What should be the final motivating straw for lawmakers, however, is looking at the devastating effects of water contamination that to this day are plaguing Flint.<sup>146</sup> The economic impact and social costs of dealing with the crisis will not be fully realized for decades.<sup>147</sup> While the fixes proposed by legislators to require notifying the public of water quality issues or requiring clarifiers in the Lead Copper Rules aren't meaningless, the emergency regulatory mechanisms were already in place for the EPA to enforce failures in inspection and water treatment in Flint.<sup>148</sup> These mechanisms were either ignored or not given proper weight to the magnitude of the developing problems in the city. It just isn't clear that anything will be as effective at preventing another Flint crisis in the short term but the embarrassment of the EPA and MDEQ officials. But that embarrassment will eventually subside. The EPA has flexed its ability to exercise emergency authority powers before under section 1431, particularly against private entities.<sup>149</sup> But this author could not find a comparable instance in which the EPA was under the pressure of state and local government resisting and disputing facts on the ground. Proposed legislative fixes requiring stricter standards simply reinforce what was already the job of both state and federal agencies.<sup>150</sup> But a dedication to water

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145. James, *supra* note 141.

146. Herzog, *supra* note 87.

147. Sanburn, *supra* note 107.

148. Spangler & Egan, *supra* note 93.

149. U.S. ENVTL. PROTECTION AGENCY, ADMINISTRATIVE ORDER ON CONSENT (Mar. 19, 2013), [https://www3.epa.gov/region10/pdf/sites/yakimagw/consent\\_order\\_yakima\\_valley\\_dairies\\_march2013.pdf](https://www3.epa.gov/region10/pdf/sites/yakimagw/consent_order_yakima_valley_dairies_march2013.pdf) [<https://perma.cc/KX68-ZV5Z>]; U.S. ENVTL. PROTECTION AGENCY, ADMINISTRATIVE ORDER ON CONSENT (Nov. 20, 2006), <https://www.epa.gov/sites/production/files/2016-05/documents/sdwadupont06.pdf> [<https://perma.cc/SE9N-43DN>].

150. Greg Botelho, *No Simple Fix: Infrastructure, Health Issues Loom Large in Flint Water Crisis*, CNN (Jan. 19, 2016), <http://www.cnn.com/2016/01/19/us/flint-water-crisis-whats-next/index.html> [<https://perma.cc/BBQ2-UDV8>]; Josh Sanburn,

infrastructure innovation at the federal level would relieve some of the budgetary pressures off these agencies and other state governments to hopefully discourage future negligent or careless action. In March of 2017, the EPA awarded \$100 million to Michigan to improve water infrastructure in Flint.<sup>151</sup> This much needed funding was supplemented by the State of Michigan after it agreed to settle a class action lawsuit and set aside \$97 million to replace the water lines of at least eighteen thousand Flint households by 2020.<sup>152</sup> In continuing to pursue the dire needs of water infrastructure repair, this country has the opportunity to make major improvements in national public health, and to head off future disastrous water crises like Flint.

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*Why the EPA is Partly to Blame for the Flint Water Crisis*, TIME (Jan. 22, 2016), <http://time.com/4190643/flint-water-crisis-susan-hedman-epa/> [<https://perma.cc/MZ2P-QJ7R>].

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