UNDER NEW (EMERGENCY) MANAGEMENT: THE FLINT WATER CRISIS, LEGIONNAIRES’ DISEASE AND RECREANCY

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I am submitting herewith a thesis written by Nadya Vera entitled "UNDER NEW (EMERGENCY) MANAGEMENT: THE FLINT WATER CRISIS, LEGIONNAIRES' DISEASE AND RECREANCY." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Sociology.

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UNDER NEW (EMERGENCY) MANAGEMENT:
THE FLINT WATER CRISIS, LEGIONNAIRES’ DISEASE AND
RECREANCY

A Thesis Presented for the
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Nadya Michelle Vera
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To Jonathan, my perfect husband, and Wesley, my amazing boy, you are my everything. I thought I knew what it meant to love and be loved, but I find myself in awe every single day of how much our love grows. Thank you for being my world.
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ABSTRACT

The environmental injustice evident in the events that led to the Flint Water Crisis shocked the nation and beyond. How could water from a municipal source with systematic measures in place for safeguarding be a source of harm to an entire community? Theoretical motivation for this study is rooted in Freudenburg’s (1993) concept of “recreancy,” the failure of government institutions to discharge their responsibilities to citizens appropriately and reliably. Researchers have documented recreancy in institutional responses to technological disasters, but it remains unclear what routine behaviors in government institutions lead to failure.
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CHAPTER 1
THE RESEARCH PROBLEM

Introduction

Modern societies based on democratic principles, representative government, and the rule of law inculcate in citizens a basic trust in their government institutions and the expectation that the institutions will minimize the risks to citizens’ health, safety, and environment. When institutions fail to manage risks responsibly, people are harmed. Freudenburg held that institutional failures in risk management deserved greater analytical attention from sociologists due to the nature of contemporary society.

Analysts such as Beck and Giddens contend that postwar modernization has generated a risk society—a society organized around unique risks to public health and safety created by complex, tightly coupled production technologies (Beck 1992, 1995, 1996; Giddens 1990, 1991). Risky technologies require multiple specialists to design, implement, and regulate them. Because the technologies are incomprehensible to most citizens, we are dependent on “whole armies of specialists” (Freudenburg 2003: 105). Institutions and specialists charged with regulation of the technologies are granted substantial power to define, estimate, and publicize the associated risks.

Freudenburg argued that risk society’s requirement of more specialists and more risk managers renders risk management institutions more likely to fail than previously. He developed the concept of recreancy to refer specifically to institutional failures and contended that the study of risks and risk management be expanded beyond individual perceptions of risk to include the larger institutional framework responsible for risk management.

Many researchers have deployed the notion of recreancy in their empirical work. But it generally fails to do justice to the full character of Freudenburg’s conception of the term. My aim in this project is to address that deficiency.
I first conduct a detailed examination of Freudenburg’s development of the concept of recreancy. I then provide an overview of the use of the concept in the literature to demonstrate the divergence of empirical applications of recreancy from Freudenburg’s conception. I use a deeper understanding of recreancy to generate research questions that better reflect elements of Freudenburg’s ideas. Empirically, I look for evidence of those elements in a case study of the institutional failures in the State of Michigan that resulted in the Flint water crisis.

Freudenburg’s Conception of Recreancy

Social institutions are enduring systems of patterned interactions and relationship among members of society that structure and regulate the actions of individuals. Institutions are crucial parts of society, mechanisms for maintaining social order in vital areas of society—the family, religion, education, the economy, and the political. Institutions are interdependent, integrated systems of norms and rules that structure social interactions, governing not only the individual’s behavior but her expectations of societal operations.

Citizens’ particular expectations of government institutions are that its operations are transparent and accountable to the public and that institutional actors are competent and responsible enough to attend to their prescribed obligations in ways that can be counted on to protect citizens’ rights, maintain social order, and promote the general welfare (Freudenburg 2000).

Liberal democratic governments are charged with two contradictory obligations: to facilitate capital accumulation and to maintain legitimacy (O’Connor 2002). Government institutions fulfill the accumulation obligation through policies supporting the private sector’s pursuit of profits. Federal taxes on profits provide the government with revenues. The government fulfills its legitimacy obligation by using its revenues to provide social policies that benefit the majority of citizens, such as the Social Security Act and Medicaid.
The obligations are inherently contradictory because they serve different social classes: corporate elites benefit from the government’s accumulation obligation, while middle and working classes benefit from the government’s legitimation obligation. One obligation is fulfilled only at the expense of the other. The neoliberal agenda calls for an emphasis on accumulation, which leads to pollution and the failure of institutions in their obligations to manage risks to public health and safety.

Freudenburg urged analysts to adopt a more sociological, institutional level of analysis in studies of risk management. Past studies, he observed, focused almost exclusively on the individual characteristics of the risk manager or the risk perceiver (Freudenburg 1993). But institutions can produce disastrous outcomes even when no bad actor is identifiable. Often, Freudenburg contends, “the most significant failings are not so much those of individuals as of organizations and institutions” (Freudenburg 1993: 917).

Freudenburg advocated for investigations of the influences of the larger institutional context in which individual managers act. He claimed that, to discuss institutional failure—the behaviors of institutions as well as of individuals—in the risk society, “[w]e need a specialized word if we are to refer to behaviors of institutions or organizations...” (1996: 47). He offered the concept of “recreancy” to describe cases in which institutional responsibilities “are not being carried out properly—whether the ‘fault’ is one of individual actors or of a broader system in which important responsibilities may fall through the institutional cracks” (1993: 915). Elsewhere, he indicates that recreancy encompasses the “behaviors of persons and/or of institutions that hold positions of trust, agency, responsibility, or fiduciary or other forms of broadly expected obligations to the collectivity, but that behave in a manner that fails to fulfill the obligations or merit the trust” (1993:916–17).

Because his focus was institutions, Freudenburg turned to Max Weber’s work to flesh out his conception of recreancy. Weber described modern institutions and organizations as characterized by a complex, interdependent division of labor which
specifies the regulations and duties assigned to distinct roles in an established hierarchy of command. Individuals who fulfill those positions possess particular, certified qualifications enabling them to maintain the regular and continuous execution of the institution’s social obligations. The desired outcome is effective and efficient institutional operations.

Freudenburg (1993) detected a paradox in regard to the interdependencies of an increasingly complex division of labor distinguish the institutions in the risk society. On the one hand, our current division of labor promotes institutional efficiency of performance and permits a level of prosperity, prowess, and even physical health and safety, that is altogether unprecedented. But, on the other hand, the division of labor substantially increases the institution’s vulnerability to failure, where duties are not carried out properly by institutional actors or where the responsibilities in a broader system fall through the institutional cracks. Institutional failure – recreancy – is “the failure of institutional actors to carry out their responsibilities with the degree of vigor necessary to merit the societal trust they enjoy” (1993: 909). How has Freudenburg’s conceptualization of recreancy been treated by other analysts?

**Criticism of Analysts’ Empirical Use of Recreancy**

I examine other analysts’ uses of the concept of recreancy with a focus on the unit of analysis used in the study, the object of individuals’ perceptions regarding recreancy, and the social consequences of recreancy to highlight the difference between their uses of the concept with Freudenburg’s.

**The Unit of Analysis**

The hallmark of Freudenburg’s conceptualization of recreancy is his insistence on the importance of viewing institutional failure at the institutional level of analysis. Yet the individual is the unit of analysis in nearly all of the relatively sparse research applying the concept of recreancy (Cope, Slack, Blanchard, and Lee 2016; Gill 2007; Gill, Ritchie, and Picou 2016; Ladd 2012; Ladd, Gill, and Marszalek 2007; Marshall, Picou, and
The Object of Perception

Regardless of the institution or the recreant act examined, research applying the concept of recreancy regularly focuses on individuals’ perceptions. Studies of individuals’ perceptions related to the 1989 grounding of the Exxon-Valdez tanker and the consequent oil spill in the Gulf of Alaska vary in the objects of perception, for example: individual perceptions of recreancy (Ladd 2012; Ladd, Gill, and Marszalek 2007); individual perceptions of blame (Ritchie, Gill, and Farnham 2013; Cope, Slack, Blanchard, and Lee 2016; Ritchie, Gill, and Long 2018; Gill 2007; McSpirit, Scott, Hardesty, and Welch 2005); perceptions of an institution as recreant (Cope, Slack, Blanchard, and Lee 2016), and perceptions of governmental or organizational failure (Picou, Marshall, and Gill 2004).

Cope, Slack, Blanchard, and Lee (2016) and Ritchie, Gill, and Long (2018) examined individuals’ perceptions of distrust and blame related to the 2010 explosion and fire on the Horizon drilling rig and subsequent oil spill in the Gulf of Mexico. Analytical attention to individuals’ perceptions of blame in technological disasters was also drawn to Hurricane Katrina (Gill 2007; Ladd, Gill and Marszalek 2007), and a Kentucky coal ash spill (McSpirit, Scott, Hardesty, and Welch 2005).

The Social Consequences of Recreancy

A number of researchers describe a variety of psychosocial impacts of institutional recreancy, including: heightened perceptions of risk, high levels of psychological distrust, and loss of trust in institutional support systems (Picou, Marshall, and Gill 2004; Ladd, Gill, and Marszalek 2007; Sapp, Arnot, Fallon, Fleck, Soorholtz, Sutton-Vermueulen, and Wilson 2009); psychological stress and the loss of social capital (Gill 2007); distrust in institutions (Cope, Slack, Blanchard, and Lee 2016) (Gill, Ritchie, and Picou 2016); anger, frustration, despair, and demands for accountability (Ladd, Gill, and Marszalek 2007); and secondary stress and long-term psychosocial issues (Marshall, Picou, and Gill 2003).

**Research Questions Based on Freudenburg’s Conception**

Freudenburg emphasized the need to move past studies of individuals in risk studies. He advocated investigations using the lens of the institutional unit of analysis to focus on the behaviors of institutional actors as they are influenced by institutional arrangements. I developed three research questions formed specifically from elements of Freudenburg’s conceptualization of recreancy. I used the following elements from Freudenburg’s concept of recreancy to develop my first research question:

- “[W]ork to date needs to be complemented with work that focuses on the organizations that are responsible for managing risks and on the larger societal context in which we live” (Freudenburg 2003: 102).
- Given periodic pressures for organizations to cut costs: “Organizations will generally seek to protect what they consider to be their core functions and cut back on those they consider peripheral” (Freudenburg 2003: 116).
- “[P]rotection of health, safety, and the environment tends to be secondary” (Freudenburg 2003: 117).

Research Question 1: *Is the level of institutional resources adequate for enabling officials to carry out their responsibilities with the degree of vigor necessary to merit the societal trust they enjoy?*
I used the following elements from Freudenburg’s work to develop my second research question:

- “[W]e need a specialized word if we are to refer to behaviors as well as of individuals and, importantly, if the focus of attention is to be on actual behaviors” (1996: 47).
- “Rather than responding to the substance of citizen complaints, policy makers employ diversionary reframing—divert attention away from citizens’ real concerns by reframing the debate as being about something else” (Freudenburg 2003: 119) and “...calling into question the legitimacy of citizen concerns about those institutional failings” (Freudenburg 1993: 917).
- Institutional actors...are likely to have considerable interest in claiming that their own behaviors reflect responsibility and competence (Freudenburg 1993: 917).
- Frequently, the institutional actors with the greatest monitoring authority have interests that systematically differ from those of the larger society (Freudenburg, O’Leary, and Wilson 1999). “Threats to public health, safety, and the environment are often embedded in a particular structure of interests in which a small but powerful set of actors will stand to benefit from policy actions that can create serious problems for society-at-large” (Freudenburg, O’Leary, and Wilson 1999: 6).

Research Question 2: *What behaviors by which institutional actors resulted in recreancy?*

**The Flint Water Crisis**

I use the research questions that reflect Freudenburg’s concept of recreancy in an exploratory case study of institutional failures in Flint, Michigan, a decaying rust-belt city with a majority African American population. The multiple failures of state, county, and city government institutions resulted in contaminated drinking water that caused elevated blood lead levels in residents and a lethal outbreak of Legionnaires’ disease.
The institutional failures are nested within Flint’s long-term financial problems. I investigate the recreant actions of state and local governmental officials that led to the multi-faceted phenomenon to which I refer as the Flint Water Crisis.

In 2011, Michigan Governor Rick Snyder placed the City of Flint, a majority African American city, under state receivership because of financial debts. Consistent with state law, the governor appointed an emergency manager to operate the city. Michigan’s law granted emergency managers broad authority to implement austerity measures to restore financial solvency.

In 2013, Flint’s emergency manager decided to reduce city expenditures by ending the city’s contract for drinking water with the Detroit Water and Sewerage Department (DWSD) in favor of a new water utility. Since the new company’s pipeline was under construction, the emergency manager ordered that the city’s old water distribution system be used as a temporary source. The 50-year old water treatment plant would draw and treat the corrosive water from the Flint River, polluted for decades by General Motors factories, and distribute it via old pipelines to Flint homes, schools, and businesses.

The switchover to Flint River water was made in April 2014. Residents’ complaints about water quality followed almost immediately. Officials from the Michigan Department of Environmental Quality determined that corrosion control chemicals need not be added to water at the treatment plant.

In October 2015, Governor Snyder released a 10-point action plan to address high lead levels in the Flint’s drinking water. He was responding to scientific studies that found high lead levels in the drinking water and high blood lead levels in children. Flint’s water distribution system was shut down and the city again contracted with DWSD for drinking water.

The governor held a press conference in January 2016 to announce that outbreaks of Legionnaires’ disease that occurred in the summer months of 2014 and
2015 had killed 12 people in the Flint region. The outbreaks were linked to the 2014 change in drinking water source.

In 2017, 15 current or former government officials were criminally charged in connection with the Legionnaires’ disease outbreak. The disastrous outcome was the complex product of a broad series of decisions and non-decisions by government institutional officials at state, county, and local levels.

Bacterial microbes are ubiquitous in water distribution systems. Bacteria grow and attach to the inner surfaces of pipelines with biofilm, the slime formed by bacteria for protection from disinfecting agents.

The highly corrosive water from the Flint River left the water treatment plant without the addition of corrosive control chemicals. The corrosive water coursing through Flint’s old lead service lines eroded the biofilm. Bacteria were released into the water and multiplied.

When elevated levels of coliform bacteria were detected, more chlorine was added to the treatment. The chlorine boost made the water even more corrosive and it ate into the pipe itself, causing heavy metals such as lead, iron, and copper to leach into the water. Lead levels exceeded legal limits, and children manifested high blood lead levels.

Legionella bacteria are commonly found in water distribution systems without reaching a level that causes disease. But the bacteria’s growth is accelerated by the presence of iron and in warm temperatures. Since Flint’s water contained iron, Legionella bacteria rapidly increased in summer months.

If different decisions had been made by institutional actors at any point, the impacts of the water contamination could have been mitigated. In fact, if corrosion control chemicals had been added to the water treatment as soon as the switch to Flint River water was made, a water crisis would have been unlikely.

The case study of the Flint Water Crisis is well-suited for playing out Freudenburg’s conceptualization of recreancy. The maintenance of safe drinking water
requires neither sophisticated technology nor esoteric knowledge—counter to risk society theorists’ focus on dramatic cases of risk management. But Freudenburg urged researchers to examine more common risks: “We will learn more by focusing not on the dramatic risks of a nuclear Armageddon but on more mundane types of risks unlikely to endanger all life on earth but still raise significant concern” (2003: 102). After a description of the research strategy, I will turn to the story of the mundane risks associated with the Flint Water Crisis.
CHAPTER 2
THE RESEARCH STRATEGY

I conducted an exploratory case study of the Flint Water Crisis drawing on archival data which I analyzed thematically. Since criminal cases are ongoing, predicted dates of trial completions cannot be made. I elected to run the case study from January 1, 2011 through December 2018. This date range captures relevant events that occurred since the Michigan governor first declared the City of Flint under the Emergency Manager Law and covers the period in which national discussion on the water crisis emerged.

Archival Data Sources

Under pressure from the public, Michigan Governor Rick Snyder released, in multiple batches that started in January 2016, all email communications about the Flint Water Crisis that were routed through his office. The email contents were publicized in a wide array of news outlets. I did not use the emails themselves as a data source because of the prohibitive costs in time and in the conversion of the emails to an easily searchable data base.

I instead turned to news articles written by investigative journalists with access to the emails. Most of the articles were published after the governor’s January 2016 press conference. These articles revealed the factual actions of institutional actors during the crisis, behaviors that often contradicted the reported actions at the time of the incidents.

I collected news stories from two sources that focused on the Flint Water Crisis. The Flint Journal/MLive presented the local perspective. MLive is a web-based consortium of several former community newspapers including the Flint Journal. These news sources present local perspectives, featuring interviews with Flint residents and
officials and providing detailed information about state government operations relative to the crisis.

A more regional perspective of the water crisis was projected in news coverage by The Detroit News, one of two major daily newspapers in Detroit. It serves the metropolis and six surrounding counties and is the largest media market close to Flint. The Detroit News’s stories about Flint aim at a broader readership, carrying perhaps fewer details but greater context.

I identified relevant articles with search terms such as “Flint water crisis,” “Legionnaires’ disease,” “Flint, Michigan,” and “Legionella.” I copied or downloaded all relevant articles, placing them in chronological order from oldest to newest stories. This 1,858-page file composed my raw data. Next, I summarized each article from each source in two new documents. I then merged the summary documents and treated these combined chronological summaries as the 296-page database for thematic analysis.

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<td>Detroit News</td>
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<td>Totals</td>
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<td>296 total pages of articles</td>
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**Analytical Technique: Thematic Analysis**

Thematic analysis is a technique for identifying patterns or themes in qualitative data (Maguire and Delahunt 2017). The technique organizes and describes the data in a detailed, nuanced account (Braun and Clarke 2006).

The goal is to identify important themes in the database that address research questions or say something about an issue. Thematic analysis goes beyond a mere summary, progressing from a description of organized patterns in the data to an
interpretation of the patterns, a theorization of the significance of the patterns and their broader implications (Braun and Clarke 2006).

Thematic analysis involves a number of choices for researchers which are often not made explicit (Braun and Clarke 2005). Several analysts have examined multiple qualitative studies with the aim of presenting clear guidelines in the analytical process laid out in stages. The stages are non-linear; they have recursive, iterative relationships. In many ways, the guidelines are elaborations of Yin’s (2011) model of analysis of qualitative data. His model is predicated on his observation that most qualitative analyses follow “a general, five-phased cycle” (2011: 176):

1. compiling: organizing all collected data;
2. disassembling: breaking down the compilation into pieces, coding;
3. reassembling and arraying: reorganizing the pieces into larger themes;
4. interpreting: creating a new narrative, an interpretation of the reassembled data; and
5. concluding: drawing conclusions from the entire data set and the interpretation.

Braun and Clarke (2006) specify a six-step process. Maguire and Delahunt (2017) adapt Braun and Clarke’s framework by adding more detailed descriptions of each step. This more detailed framework consists of the following stages:

1. become familiar with the data: reading and re-reading the transcripts, make notes and jotting down early impressions;
2. generate initial codes: organize data in a meaningful and systematic way, coding each segment of data that is relevant to or captures something interesting about the research question;
3. search for themes: identify patterns in the coded data to organize them into broader, descriptive themes that say something specific about the research question;
4. review themes: modify and develop the preliminary themes to assure that they work in the context of the entire data set and are coherent and distinct from one another;
5. define themes: identify the essence of each theme and the relations among themes; and
6. writing-up: write the report, journal article, or dissertation.

**Application of Thematic Analysis to Case Study Data**

I found myself frequently moving back and forth among the thematic analysis of the data, the theoretically informed shaping of research questions, and operationalizations of concepts via themes. I integrated the insights from the adapted model to set out the steps I took in performing the thematic analysis.

**Step 1: Become familiar with the data and identify patterns.**

I read and re-read the entire database, searching for meanings relevant to institutional recreancy. Through this immersion in the database, I became familiar with the depth and breadth of the content.

**Step 2: Generate initial codes.**

I broke down the database into smaller pieces via codes that reorganized the data in ways that addressed my research questions. I coded as many small pieces as possible, recognizing that codes would continue to be developed and defined throughout the analysis.

**Step 3: Search for themes and subthemes.**

After all data were initially coded, I re-focused at a broader level of analysis. I examined the codes in search of patterns and combined patterns into overarching themes and subthemes. Some codes were discarded; others were combined. I maintained “miscellaneous” code.
Step 4: Review themes and subthemes.

I further review themes and subthemes, modifying as necessary and/or developing new ones. I ensured themes were coherent and distinct from one other and that the themes in toto make sense.

Step 5: Refine and title themes and subthemes.

I further refined the themes and reviewed the coded data within them. I devised precise, descriptive titles for the themes to be used in the final analysis.

Step 6: Interpret.

I interpreted the data, developing a narrative that wove together my research questions for the key analytic portion of my thesis.

Step 7: Conclude and reflect.

I returned to the larger issue driving this research: How are we to understand the failures of government institutional actors to fulfill their responsibilities to the public? I aimed to capture the broader significance of my findings. Using the research questions, I developed from elements of Freudenburg’s conceptualization of recreancy, I analyzed the database for evidence or themes that related to the research questions. Research question 1 aimed at the institutional level of analysis; research question 2 aimed at evaluating the individual level of analysis. The research questions and examples of potential themes follow:

1. Is the level of institutional resources adequate for enabling officials to carry out their responsibilities with the degree of vigor necessary to merit the societal trust they enjoy?
   - Available state funding for training employees, hiring staff, and providing necessary equipment and labs
   - Access to expert knowledge, protocol enforcement, incentives and disincentives for performance of responsibilities.

2. What behaviors by which institutional actors resulted in recreancy?
• Specific behaviors of individuals, such as notifying appropriate institutions of problems, issuing warnings to public, using sound scientific methods for investigations
• Intentionality of behaviors
• Behaviors that should have occurred but did not
• Reasons for recreant behavior, such as lack of knowledge, incompetence, negligence, ordered by institutional superiors, self-interest
CHAPTER 3

CASE STUDY

The City of Flint has accumulated a number of records in the last decade. It was named the “arson capital” of the country in 2011. The Federal Bureau of Investigation ranked Flint the most violent city in America in 2010, 2011, 2012, and 2013 (Ridley, G., 2013, Jan. 17). In 2016, according to Census Bureau data, Flint had the nation’s highest poverty rate among the nation’s 599 largest municipalities, with 45 percent of residents living below the poverty line (Adams 2017). The rate of childhood poverty was 58 percent, compared to the national rate of 18 percent.

This is the town that General Motors (GM) built—and abandoned, the town that government betrayed, and the town that environmental illness struck. The institutional failures—recrancy—that produced the environmental illnesses of lead poisoning and Legionnaires’ disease in the Flint region are implicated in the criminal charges filed against 15 individuals who held positions in government institutions. How are we to understand these failures of governmental institutional actors to perform their duties? I address this broad question in the next two chapters. In this chapter, I present the story of Flint’s water crisis; in the next, I analyze the institutions and actors that were recreant.

Here I offer a chronological, factual narrative of events in Michigan that brought the institutional outcome of recreancy and the public health outcome of environmental illnesses. I focus on the larger institutional context in which Flint’s story takes place, the relevant government institutions and their characteristics, and the actions of institutional participants.

The Political-Economic Backstory to Flint’s Water Crisis

The City of Flint was born as a racially segregated, company town in 1908, when General Motors (GM) incorporated the city and established headquarters there. For many years, Flint’s fortunes ricocheted from gain-to-loss, gain-to-loss. When GM left Flint
for greener, more profitable pastures, the city fell into near financial ruin. Their financial struggles were substantially aggravated by political maneuvering that further impoverished the city and displaced local leaders.

**General Motors: Exploitation and Desertion**

Flint became a boomtown as GM produced its first million cars by 1919 (Schragger 2016), boasting low unemployment and high tax revenues from GM that the city plowed into significant residential services and infrastructure. Flint’s fortunes fell when the 1930s Great Depression forced automobile manufacturers, including GM, to cut production by approximately 75 percent. Flint’s unemployment rate soared to nearly 50 percent. Over half of Flint’s white families and 85 percent of the city’s African American families received public aid (Michigan Civil Rights Commission 2017). Living conditions deteriorated; population decreased. Many families left the state, and others moved to rural areas surrounding the city to live in flimsy homes made from whatever materials were at hand (Michigan Civil Rights Commission 2017).

Roosevelt’s New Deal and the need for war weapons and equipment ended the depression. The nation’s postwar economy quickly expanded to unprecedented proportion. GM brought prosperity back to greater Flint with 25,000 new jobs. The new employment opportunities attracted a sizable population of workers and their families from across the country, and Flint’s population grew.

But by 1960, GM had shifted much of its manufacturing capacity to multiple new industrial complexes that the company built outside city limits where land costs were lower. Federal policies encouraged such corporate moves by granting defense contractors a tax deduction of 100 percent of the construction costs (Schragger 2016).

GM’s relocation reduced the city’s tax revenues, but the loss was expected to last only until the city annexed the suburbs. With high expectations, the city council supported GM’s move by building roads and providing water and sewer service. But suburban residents opposed annexation and, instead, incorporated separate
municipalities. Flint’s temporary losses became permanent, and the city began its long downturn (Schragger 2016).

Michigan, like many manufacturing strongholds, was decimated by deindustrialization between the 1970s and the 1990s. Throughout the country, factories were shuttered, and manufacturing moved to suburbs, to anti-union states, and to developing nations. Tax bases in Michigan’s cities plummeted, and services were slashed—police and fire protection, maintenance of city parks and streets, and garbage collection. Property values cratered, further reducing taxes and city revenues. Cities stagnated in permanent fiscal crises, creating a cycle of failure (Linkon and Russo 2002).

Flint underwent deindustrialization after 1980 when GM moved manufacturing facilities out of the city; good-paying jobs were gone for good (Alamy 2012). GM’s last operating assembly plant closed in June 1999. The grounds of what had been the largest GM plant in the world were declared the largest brownfield site in the nation (Alamy 2012). The city’s tax base eroded, leaving an infrastructure that was built for a large population to deteriorate further (Schragger 2016).

The combination of decreased populations and reduced property taxes inevitably led to financial strains for Michigan’s municipalities. State legislators responded by enacting laws allowing the state to take over local governments facing financial crises. The 1988 Public Act 101 gave the state the authority to place a municipality in state receivership and appoint an emergency financial manager. The law was replaced in 1990 with PA 72, which established a state financial emergency review board to assess a city for state receivership (Oosting, J. 2012, Dec 27). The governor was empowered to appoint an emergency manager for struggling cities. The sole task of the emergency manager was to implement austerity measures to reduce city expenditures and increase revenues.

I uncovered only one policy intended to increase Flint’s revenues: in October 2012 while under state receivership for the second time, Flint’s city lockup was reopened. Out of commission since 2008, the facility could hold up to 110 inmates for a
maximum of 72 hours (Adams, D., 2013, Sept. 11). But the governor’s office identified numerous strategies for cutting the city’s spending.

Flint was first placed in state financial receivership in 2002. City Council members tried to evade the state’s takeover by planning for $12 million in spending cuts (Adams, 2013, Sept. 11). But Governor John Engler overrode the council, declared a financial emergency, and appointed Ed Kurtz as Flint’s first emergency manager (Mostafavi, B. 2011, Nov. 10). The city council sued in state court but failed to stop the receivership (Adams 2013, Sept. 11; Mostafavi 2011, Nov. 10).

Emergency manager Kurtz cut expenditures by removing health, dental, and vision benefits for most city officials and by cutting the mayor’s annual salary by over 70 percent and that of the nine council members by over 20 percent (Mostafavi, B. 2011, Nov. 10). He closed the ombudsman’s office, raised residential water rates, laid off city workers, temporarily closed the city’s recreation centers, and authorized infrastructure projects to improve sewer and road systems (Goodin-Smith, O. ND).

The receivership was ended in 2004. But a subsequent series of actions taken by federal and, mostly state, government institutions instigated Flint’s decline from bad to worse and set the stage for the water crisis.

**Political Exacerbation of Flint’s Financial Straits**

During the 2010 state gubernatorial elections, Republican candidate Rick Snyder’s campaign touted his business experience and facility with data (Lawler, E., 2018, Dec. 31). Snyder was elected in November, prepared to demonstrate his neoliberal *bona fides*.

In August 2011, State Treasurer Andy Dillon assessed the City of Flint’s considerable financial deficit and declared it highly likely to experience a fiscal emergency in the near future (Longley, K. 2012, Dec. 1). Governor Snyder appointed a financial review committee and tasked them with determining whether Flint was undergoing an actual financial emergency (Longley, K. 2012, Dec. 1). The review team
agreed with Dillon and recommended that the governor appoint an emergency financial manager (Longley, K. 2012, Dec. 1). Although several City Council members opposed the city’s placement under state receivership (Longley, K., 2011, Sept. 14), the council voted 7-2 to accept the state’s declaration (Longley, K. 2012, Dec. 1).


To assist the emergency manager in reducing Flint’s expenditures and display his budgeting skills, Governor Snyder implemented two strategies: he changed the use of revenue sharing funds and strengthened the emergency manager law.

**Hijacking Statutory Revenue Sharing Funds**

Michigan’s Revenue Sharing Act specifies that 21.3 percent of state sales tax revenues be earmarked for statutory revenue sharing with municipalities based on needs such as demand for expanded menus of services and lack of capacity to fund services from locally-collected revenue sources (Murphy 2011, Oct. 16; Citizens Research Council of Michigan 2015).

Because an earmark is merely a guideline and cannot mandate an appropriation, statutory revenue sharing has typically not been fully funded (Stansell 2017). Instead, the governor and legislature may adjust the distributed amount. State authorities have increasingly used statutory revenue sharing funds to balance the state budget and pay for cuts in business taxes (Lederman 2016; Michigan Municipal League 2014). Between 2003 and 2013, the state withheld over $6 billion dollars from Michigan cities (Lederman 2016). In that period, the City of Flint lost close to $60 million in statutory revenue sharing 2003 and 2013 (Lederman 2016).

Determined to impose new forms of market-based discipline on struggling municipal governments, Snyder in 2011 implemented a new statutory revenue-sharing
program that required cities to undertake market-friendly reforms—austerity measures (Lederman 2016). To obtain their statutory revenue sharing payments, local governments were required to participate in an economic vitality incentive program that included increased transparency to citizens, benchmarking successes, consolidation or privatization of services, and pension reform (Murphy 2011, Oct. 16). Ideally, the thrust of the program was to position Michigan cities as businesses-friendly sites (Lederman 2016).

**Scaling Up the Emergency Manager Law**

Michigan cities were struggling financially in the wake of the 2008 Great Recession. The Michigan legislature, concerned that the nearly bankrupt cities threatened the state's credit rating, passed Public Act 4, the 2011 Local Government and School District Fiscal Accountability Act (Kossis 2012).

The controversial law allows the state government to place in receivership those cities with negative economic health indicators, even if local officials oppose it. The receiver, the emergency manager appointed by the governor, has nearly unlimited authority, including: altering collective-bargaining agreements, firing elected officials, privatizing or selling public assets, entering into contracts with municipal creditors, and eliminating departments within city government (Kossis 2012; Landon 2012). The emergency manager’s authority overrides that of locally elected officials, who are barred from any actions without his prior written approval. The emergency manager can sue to enforce compliance to his orders.

In April 2012, the state Board of Canvassers held a hearing on a petition to make Public Act 4 subject to a state voting referendum (Longley, K. 2012, Dec. 1). The night before the hearing, emergency manager Michael Brown issued 12 executive orders that forced cuts in health care coverage for retirees (Adams, D. 2018, April 13), the Flint police patrol officers’ union, and the general city employees’ union (Adams, D., 2018, April 13; Adams, D., 2013, Sept. 11; Longley, K. 2012, Dec. 1).
The petition case went to the state Supreme Court that ruled that the state Board of Canvassers must certify a referendum on Public Act 4 on the November 2012 ballot (Longley, K. 2012, Dec. 1). Public Act 4 was suspended until the referendum vote, putting Public Act 72 back into effect. PA 72 prohibited former city employees from serving as emergency managers. Michael Brown, who had been temporary mayor in 2009, was forced to step down as emergency manager (Adams, D., 2013, May 30) and Ed Kurtz replaced him (Longley, K. 2012, Dec. 1; Adams, D., 2013, Sept. 11; Adams, D., 2013, May 3).

Michigan voters overturned PA 4 in the general election of 2012 (Adams, D., 2013, Sept. 11). Just weeks after the repeal, the Legislature passed the Local Financial Stability and Choice Act of 2012, or Public Act 436. PA 436 gave the governor significant autonomy in appointing emergency managers who accountable only to the governor and the Michigan Department of the Treasury (Lee 2016).

PA 436 responded to some of the criticisms of previous laws. It gave the local governing body the authority to remove an emergency manager after one year with a 2/3 majority vote. It required the state to pay the emergency managers’ salaries instead of requiring municipalities and school districts to do so (Oosting 2012, Dec. 27). On the other hand, the law was immune to referendum, and it allowed emergency managers to break union contracts if negotiations failed (Oosting 2012, Dec. 27).

The new law offered local officials in receivership the choice among four forms of state intervention. Cities can choose among the following choices: 1.) a consent agreement, which keeps local officials in charge; 2.) a neutral evaluation, mediation similar to a pre-bankruptcy process; 3.) filing directly for chapter 9 bankruptcy; and 4.) having an emergency manager appointed (Oosting 2012, Dec. 27). However, the choices are constrained. A local government can choose consent agreement, for example, but if the state treasurer does not agree with that approach. The city can be forced to adopt one of the other options.
PA 436 went into effect in March 2013. Under the new law, Ed Kurtz, who remained in the emergency manager role, had increased “power to cover all conduct of local governments, including finance and governance issues” (Ridley, G., 2016, March 24).

The impacts of the political and economic context of decreased funding and diminished electoral power left the City of Flint highly vulnerable to crises. The match struck that generated the water crisis was the decision made on the city’s behalf by State Treasurer, Andy Dillon: to change the source of the city’s drinking water to the highly polluted Flint River. In the following sections, I present the story of the Flint Water Crisis.

**Institutional Decision**

The City of Flint had a serious revenue shortage. Therefore, the when opportunity to leave the Detroit Water and Sewer Department (DWSD) and join the Karegnondi Water Authority (KWA), was positioned as having the potential to save the city at least $100 million over the next quarter of a century (Counts, J, 2016, May 3), the City Council pursued the cost-saving strategy. On March 25, 2013, with a non-binding vote of 7-1, the Flint City Council approved a resolution to join the new Karegnondi Water Authority (KWA), which would be building a pipeline to Lake Huron. The pipeline had not been built yet and was not expected to be for a few years (Ahmad, Z. 2019, June 19). According to Goodin-Smith the council “never approved using the river as the interim water source for the city of Flint” (ND). Due to Flint’s receivership status, the ultimate decision about Flint’s water move had to be made by State Treasurer Andy Dillon.

**The Budget**

The following day Stephen Busch, who was employed with Michigan Department of Environmental Quality’s (MDEQ) drinking water division, wrote an email to other DEQ employees in which he warned that using the Flint river as a water source could result in
multiple complications, including a rise in possibly cancer-causing by-products from disinfectants and microbials in the water (Ridley, G., 2016, Feb. 14). Dan Wyant, MDEQ’s director, forwarded Busch’s email to Treasurer Dillon accompanied with the agency’s statement of support for the change. Wyant wrote, “All indications are that we are supportive of KWA and its cost benefits compared to DWSD options [...] If that is not the answer you want tomorrow—then we should discuss” (Ridley, G., 2016, Feb. 14).

On April 17, Flint Emergency Manager Ed Kurtz informed DWSD of the city’s intention to leave its services. The city’s water service contract was terminated by Detroit the following day, with an effective date of April 2014 (Ahmad, Z. 2019, June 19). Two months later Ed Kurtz approved a decree that apparently required the city to use water from the river and updating the water treatment plant for full-time use. A memo dated June 28, 2013 from Ed Kurtz to Andy Dillon revealed that the city was evaluating its available options for temporary water sources including “high consideration” being placed on utilizing water the Flint River or partially mixing it with water from Detroit (Oosting, J., 2016, March 30).

Flint’s water treatment plant had not been used as a full-time facility in almost half a century (Fonger, R., 2016, Feb. 28). Mike Glasgow, the city’s water treatment plant supervisor, requested a six-month period for preparation ahead of the switch as well as a hiring increase in is staff so that the number of plant staff could be restored to the 2005 figure (when it was last used as a backup source), but his bosses, Public Works Director Howard Croft and utilities administrator Duffy Johnson, denied Glasgow’s request due to budgetary constraints (Oosting, J., 2016, March 30). On March 14, 2014 Glasgow sent a memo to a high-ranking member of the governor’s administration cautioning that the hurried push to launch full-time production at the plant "could lead to some big potential disasters down the road" (Oosting, J., 2016, March 30).

Two days later Glasgow reached out Adam Rosenthal, a water quality analyst for MDEQ asking for guidance on water quality monitoring parameters and information about lead and copper monitoring. Glasgow wrote, “I am expecting changes to our
Water Quality Monitoring parameters, and possibly our DBP [Disinfection Byproducts Rule] on lead & copper monitoring plan...Any information would be appreciated, because it looks as if we will be starting the plant up tomorrow and are being pushed to start distributing water as soon as possible” (FWATF Timeline, p.6).

**Institutional Action—The April 25, 2014 Water Switch**

It had been decided: The City of Flint would begin treating Flint River water on April 25, 2014. The week before, on April 16 and 17, Mike Glasgow reached out to Adam Rosenthal again, but this time he copied Mike Prysby, a district engineer for MDEQ, as well as Stephen Bush, Prysby’s supervisor. Glasgow voiced his concern unambiguously:

> I do not anticipate giving the ok to be sending water out anytime soon. If water is distributed from this plant in the next couple of weeks, it will be against my direction. I need time to adequately train additional staff and to update our monitoring plans before I will feel we are ready. I will reiterate this to management above me, but they seem to have their own agenda (FWATF Timeline p. 6; Fleming, L, 2018, Feb. 23; Lynch, J., 2016, April 21).

Discouraged by the lack of attention to his warnings, Glasgow eventually gave up on acting proactively: "After a week of not a response, I figured this was really happening, now there was nothing I could do to stop the plant from operation...I said my peace, to no avail, to many different entities and left it at that and tried to focus on getting the plant ready to run" (Fleming, L., 2018, Feb. 24). Glasgow assumed that the plant would have to use corrosion control chemicals, which would have required a six-month delay to preparing the plant, but DEQ representatives told him that the chemicals were not needed (Oosting, J., 2016, March 30), so the water switch occurred and corrosion control chemicals were not added to the water from the polluted river.

In early May, just days after the switch occurred, Flint residents began to complain about the water’s odor, taste and appearance. One of those complaints reached the desk of Jennifer Crooks, the Environmental Protection Agency’s (EPA) Michigan program manager at the Ground Water and Drinking Water Branch (GWDW).
On May 15, she emailed her colleagues to convey information she had received from Flint resident Lathan Jefferson: “…[H]is doctor says the rash is from the new drinking water…He has no interest in speaking with Mike Prisby; he doesn’t trust anyone in MI government” (FWATF Timeline, p. 6).

**LeeAnne Walters—Lead Epicenter**

In August 2014 test results showed that fecal coliform bacteria levels were high enough to signal a contamination of the drinking water system (Ridley, G., 2016, Feb. 14). Flint increased the water chlorine levels and, on August 15, issued a boil water advisory (Fleming, L., 2018, Feb. 24). Meanwhile a Flint mother of four began noticing worrisome health problems within her family. Initially, Lee-Ann Walters’s husband and kids developed skin rashes and hair loss. Next, her teenage son missed three weeks of school because he was experiencing nausea, dizziness, and overall pain. Then one of her twin toddlers lagged the other in weight and “developed a bright red rash with scaly patches on his body after bathing” (Kozlowski, K. 2016, Jan. 25).

According to Michael Glasgow, he contacted MDEQ’s Mike Prysby to discuss the boil water advisory. In an email to a supervisor, Glasgow shared that Prysby had given him an “off the record” suggestion: The city could flush fire hydrants near disinfection byproduct testing sites (Fonger, R. 2018, Feb 27). The elevated bacteria levels continued to be a problem into the next month. On Sept. 5, the city issued a second boil water notice and again boosted its chlorine application. Even after a second water quality alert had been issued in as many months, no one from MDEQ came by to inspect the water plant (Fleming, L., 2018, Feb. 24).

**GM Quit**

The effects of Flint’s money-saving attempt were not limited to its human customers. The following month, on Oct. 13, 2015, GM announced that the water was corroding car parts and it therefore would be leaving the City of Flint’s water system and instead would be drawing its water from Flint Township, which was still on Detroit’s
system. Losing GM meant an annual loss of $400,000 for the city (Livengood, C., 2016, Feb. 26).

The following day, an aide to Michigan Senate Minority Leader Jim Ananich, a Flint Democrat, sent an article about the car maker’s announcement to Valerie Brader, Gov. Snyder’s environmental policy adviser. Brader forwarded the article to MDEQ Director Dan Wyant and two others, writing, “This underscores the need for the folks form DEQ to talk to the EM in Flint and to make sure a blended water solution is being explored” (Livengood, C., 2016, Feb. 26 ). Additionally, Brader shared the article with Chief Legal Counsel Mike Gandola, Chief of Staff Dennis Muchmore, Deputy Chief of Staff Beth Clement and Communications Director Jarrod Agen. Her message to governor’s office colleagues stated that the Flint water matter had to be fixed urgently. She indicated that she had purposely omitted MDEQ from the email thread to protect the exchange from the state’s Freedom of Information Act. Gadola, whose mother was a Flint resident, replied to Brader’s email:

To anyone who grew up in Flint as I did, the notion that I would be getting my drinking water from the Flint River is downright scary [...] Too bad the (emergency manager) didn’t ask me what I thought, though I’m sure he heard it from plenty of others [...] Nice to know [my mother]’s drinking water with elevated chlorine levels and fecal coliform [...] I agree with Valerie. They should try to get back on the Detroit system as a stopgap ASAP before this thing gets too far out of control (Livengood, C., 2016, Feb. 26).

Accordin g to Dennis Muchmore, Brader and Gadola’s advocacy suggesting for Flint to abandon the river water and return to Detroit until the KWA pipeline could be completed was the predominant sentiment within the governor’s office. In the end, however, “[t]reasury Department officials concluded the cost to reconnect Flint to Detroit water—an extra $1 million per month—was deemed more than the cash-strapped city of Flint could afford” (Livengood, C., 2016, Feb. 26).
**Legionella and the Water**

Legionella bacteria can be found in freshwater and manmade water systems (Bouffard, K. 2017, Aug. 5). In the latter, the microorganisms become problematic for public health when they are spread through mist or vapor that is then inhaled by humans. With symptoms that are similar to pneumonia, Legionellosis, or illness from legionella, results most often during warm weather. The illness is not contagious from person to person, but people with weakened immune systems or lung problems are at a higher risk of contracting Legionnaires’ disease, a life-threatening illness.

From 2010 to 2013, the number of Legionnaires’ disease cases reported in Genesee County during the month of August were zero, three, four and two respectively. In August 2014, there were ten cases reported in the county (Thierry 2016).

Shannon Johnson, an infectious disease epidemiologist with Michigan’s Department of Health and Human Services (MDHHS), reached out to her colleagues on Oct. 13 about the increase in Legionnaires’ disease cases. She shared that although Genesee County health officials were milling the idea that the legionellosis spike had something to do with Flint’s McLaren Regional Medical Center, she and a colleague were not convinced that it was limited to the hospital (Gerstein and Fleming 2017, June 20). Johnson shared that she had let the county health department know they could rely on environmental testing by way of MDHHS or DEQ laboratories (Bouffard, K., 2016, Feb. 24). As none of the surrounding counties had comparable illness increases during the previous five years, Johnson hypothesized “that the source of the outbreak may be the Flint municipal water” (Lynch, J. 2016, Feb. 10).

During an Oct. 17, 2014 conference call between officials representing Genesee County’s Health Department and Flint’s Drinking Water Program, they discuss the county’s concern about the 2014 Legionnaires’ disease outbreak and agreed to cooperate as the county explored the possibility that the bacterial load growth could be
related to the water system changes that had occurred since the April 2014 water switch to using the Flint River (Longley 2012).

Susan Bohm, manager of the MDHHS’s respiratory illnesses epidemiology unit emailed colleagues Shannon Johnson, Jay Fielder, and Jim Collins to describe the telephone conversation that she had with Liane Shekter Smith, director of MDEQ’s Office of Drinking Water and Municipal Assistance (DWMA). During the call, Shekter Smith expressed worry that there would be a public proclamation made that directly linked the water to the illnesses. Bohm responded that water from Flint was, at that point, “just a hypothesis” (Lynch, J. 2016, Feb. 10 ; Gerstein and Fleming 2017, June 20 ) and shared that Shekter Smith had asked if the county had “the capability to test water,” to which she was told that MDHHS “would be working with Genesee to coordinate any water testing” (Gerstein and Fleming, 2017, June 20 ). The concluding portion of the email was bold facing:

What she did share with me was interesting — that there have been numerous complaints about the Flint water, that the Governor’s Office had been involved, and that any announcement by public health about the quality of the water would certainly inflame the situation (Gerstein and Fleming 2017, June 20 ).

Jim Henry, Environmental Health Supervisor for Genesee County, participated in the Oct. 17 conference call with Flint’s Drinking Water Program. Although he believed that the two government agencies would have a positive working collaboration as they investigated the water system’s connection to the Legionnaires’ disease outbreak, he was surprised when, starting in November 2014, his written and verbal requests for information went unanswered (Dolan et al., 2016, Feb 9).

**Anger Rising**

The new calendar year did not provide Flint residents and government officials with a break from its water woes. By the second day of 2015 the City of Flint warned residents that the water had a high level of total trihalomethanes (TTHM), a disinfection byproduct. According to the notice, Flint’s water could be used for drinking, but those
populations whose health was at higher risk should seek advice from their health care providers (Ridley, G., 2016, Feb. 14). In addition to cancer, people who have long-term exposure to excess TTHMs can develop liver, kidney, or central nervous system problems (Ridley, G., 2016, Feb. 14). Information about the uptick in Legionnaires’ disease cases in Genesee County would ultimately not be shared until a year later, but, according to a state official, starting in January 2015, discussing information about the Legionnaires’ outbreak and its possible ties to the water switch carried “political overtones” (Fonger, R. 2017, Oct. 8).

A group of protesters gathered outside City Hall to draw attention to the water’s quality problems and increasing water bills on Jan. 13, the second Tuesday of the year (Nagl, K., 2015, Jan. 14). Later that day, City Councilman Eric Mays hosted a meeting in which residents voiced aggravating water stories with a panel of council members, the city mayor, Howard Croft, the city’s director of infrastructure and development, and state representative Sheldon Neeley. LeeAnne Walters attended that meeting and shared that her 3-year-old, who had a compromised immune system, was experiencing skin rashes after his bath (Nagl, K., 2015, Jan. 14). The city held another town hall meeting the following week. Stephen Busch and Michael Prysby of MDEQ, along with Flint’s Howard Croft, were supposed to answer residents’ questions, but the Jan. 21 gathering was shut down after it was filled with angry residents (Fonger, R. 2019, June 27).

**Intra-institution Conversations on Legionella**

Several state institutional actors discussed the topic of Legionnaires’ disease among each other in early 2015. Corrine Miller, the state epidemiologist, learned that there had been a about the 2014 spike in Legionnaires’ cases in Genesee County from her staff on Jan. 23, 2015. Miller shared her concerns with her boss, Sue Moran (Goodin-Smith, O. 2017, Sept. 26). A few days later, Genesee County’s Jim Henry emailed colleagues describing his roadblocks in exploring the intersection of the water switch
and the Legionnaires’ disease outbreak (Dolan et al., 2016, Feb 9). In the email Henry alleged that DEQ’s Mike Prysby and Steve Busch refused to meet with his office (Livengood and Bouffard, 2016, Feb. 12). Henry submitted a FOIA request with the City of Flint on Jan. 27, 2015 (Ridley, G., 2016, March 6).

January 28, 2015 was a big day for email intra-institution discussions about Legionnaires’ disease. At MDHHS, Jim Collins, director of the communicable disease division, informed the former state epidemiologist (Dr. Matthew Davis) the chief deputy director (Tim Becker), the deputy director (Susan Moran), and Corrine Miller of the bureaucratic difficulties that the county was experiencing, for "some elevated levels of legionella infection that seemed, anecdotally at least, to coincide with the [changeover] in Flint water" (Livengood, C., 2016, June 27). Additionally, Collins detailed how problems of high chlorination could, in addition to posing a risk from high TTHM levels, facilitate a dangerous bacterial growth:

> It also seems that all of the abandoned properties in Flint may have “dead end” water lines that are challenging to treat or flush and may contribute to downstream contamination...I’m sure that the DEQ is investigating all of this and we’d be interested to hear of their findings to date (Livengood, C., 2016, June 27).

Susan Moran, MDHHS deputy director, replied to Collins’s email with concern, copied Corrine Miller and asked, "At this point, would you typically share info about # of Legionellosis cases with DEQ?," to which Collins replied, "We’ve had contact with DEQ staff and have let them know that this is going on" (Livengood, C., 2016, June 27).

On the same day, Corrine Miller met with MDHHS Director Nick Lyon to inform him of the 2014 outbreak. Lyon, who had been appointed to his position by Gov. Snyder, asked her for a report that would summarize the problem (Livengood and Oosting, 2016). In addition to meeting with Nick Lyon, Miller met with Linda Dykema. Miller shared her opinion that because the water switch occurred when Darnell Earley was in charge of Flint and Gov. Snyder had appointed Earley, news of a disease linked with the water could look bad for Snyder. Although the state agency could have issued a warning to residents, they delayed informing Flint the public to allow for more time to find the
source of the problem (Goodin-Smith, O. 2017, Sept. 26). In addition to Miller, Dykema alerted 13 other department officials, informing them how any public inquiries on the topic should be handled: “Sharing this information to make you aware that there is a political situation that we don't want to stumble into should we get hotline calls […] Refer callers to me if you take any, please” (Gerstein and Fleming 2017).

On the last Friday of the month, Suzanne Cupal, director of the public health division at the Genesee County crossed institutional lines by reaching out to Nick Lyon and others at the state and county health departments. Cupal’s email, dated Jan. 30, in part said that her department had specifically requested MDHHS’s help from an expert in “type 1 water supplies and communicable disease” (Goodin-Smith, O. 2017, Nov. 5), and she had not yet heard from the state agency. She also asked to discuss parameters for designating the situation an outbreak (Lynch, J. 2016, Feb.10). That same day, Brad Wurfel, director of communications for MDEQ, sent an event planning email to the governor’s deputy press secretary regarding a $2 million grant that was supposed to contribute to Flint’s water system upgrade to KWA. Wurfel specifically did not want his boss, MDEQ Director Dan Wyant, publicly describing the water as safe (Fonger, R., 2016, Feb. 28) until more information was known about the legionellosis cases. He offered more detailed discussions on the subject could occur by telephone or in-person meetings (Oosting, J., 2016, Feb. 26).

**Cross-Institution Confusion on Corrosion Control**

The Environmental Protection Agency’s (EPA) 1991 lead and copper rule set the actionable threshold to more than 15 parts per billion (ppb) in 10 percent of samples. This meant that a water system could be required to make changes like removing lead service lines or enacting corrosion control measures. According to Michael Glasgow, MDEQ guided him to not add corrosion control chemicals to the water right away, instead he was told to first conduct two six-month monitoring periods (Ridley, G. 2016, March 29) to determine if any corrosion control chemicals were needed. According to
state records, during the last six months of 2014, there were 100 water samples collected in Flint. Of those, two sites had lead readings that were above 15 ppb and 10 percent of homes had more than 5 ppb (Fonger, R. 2015, Sept. 20). Mike Glasgow trusted MDEQ’s guidance and figured MDEQ would let him know if anything needed to change (Oosting, J., 2016, March 30). The second monitoring period began in January 2015 (Fonger, R. 2015, Sept. 20).

According to LeeAnne Walters, she approached Jerry Ambrose at a January 2015 Town Hall, and he doubted that the two water bottles that she showed him, one filled with a yellow liquid and another filled with a dark brown liquid, were real samples collected from her home (Clark, A. 2018, July 15). On Feb. 4, 2015, Ms. Walters showed city officials a video of the rashes that her son’s skin developed throughout his body after being bathed (Del Toral 2015). Walters did not have any follow-up from the city until she submitted a doctor’s note from her son’s pediatrician documenting the 3-year-old’s weakened immune system and calling attention to the effects the water seemed to be having on him. On Wednesday, Feb. 11, Michael Glasgow inspected the plumbing at the Walters home and collected water samples. A few days later he delivered results that indicated high iron levels, which led him to request additional testing for lead and copper (Clark, A. 2018, July 15).

The second test results, released on Feb. 18 (Ridley, G., ND), indicated that lead levels at the Walters home were 104 ppb (Clark, A. 2018, July 15). Glasgow called Walters—his voice sounding agitated—and told her to not drink the water (Oosting, J., 2016, March 30). The following day Walters met with Glasgow at his office, where he showed her the lab report, which had the MDEQ logo on it (Clark, A. 2018, July 15).

Walters’s next step was to contact the EPA’s regional office. Miguel Del Toral answered her phone call on Feb. 25 (Del Toral 2015). When she shared her home’s test results Del Toral’s initial thought was that there had to be some sort of misunderstanding, but after “getting to know how quickly she was picking things up and the information she was providing was accurate,” he decided to investigate (Smith, L. 2016, Jan 21).
The following day, Jennifer Crooks, Miguel Del Toral’s superior at EPA, sent MDEQ’s Stephen Busch an email in which she supposed “the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes” (Fonger, R., 2016, Feb. 28) and specified that the Flint service lines were required to have “Optimal Corrosion Control Treatment” (OCCT) in the water system (Howes, D. 2016, Feb. 13). Miguel Del Toral inquired about OCCT in Flint’s water on Feb. 27 (Lynch and Oosting 2016). Stephen Busch responded by stating that the city had an optimized corrosion control program (Lynch and Oosting 2016), but was not specific about the treatment details (Clark, A. 2018, July 15).

After responding to Del Toral Busch also reached out to his superiors Liane Shekter Smith and Richard Benzie, field operations section chief for MDEQ. Busch wrote, “As indicated by Mike and Adam the city is meeting 90th percentile. Not sure why region 5 [EPA] sees this one sample as such a big deal” (Walters et. al v. Snyder et al 2017).

Patrick Cook, an engineer with MDEQ’s Community Drinking Water Unit (CDWU) responded to Crook and Del Toral’s evaluation by describing MDEQ’s incorrect understanding of the lead and copper rule: “If it is determined that Flint has to install corrosion control treatment, the rule allows up to two years to complete a study and an additional two years to install the treatment unless we set a shorter time” (Howes, D. 2016, Feb. 13).

In addition to being contacted by LeeAnne Waters about water quality concerns in her home in February 2015, the EPA was contacted by at least one more person in Genesee County: An official with the Genesee County’s health department contacted the EPA and shared information about the spike in Legionnaires’ disease cases over the previous year. This prompted an official with the EPA to reach out to the Centers for Disease Control and Prevention (CDC). Due to the seriousness of the situation the CDC proposed further assistance in the form of epidemiologic and laboratory support from its Atlanta headquarters or in Michigan, but Michigan health officials turned down the offer (Livengood and Bouffard, 2016, Feb. 12; Fonger, R., 2016, Feb. 16).
**Contentious Colloquies**

Dialogue about water-related illnesses across institutions was highly contentious in March 2015. First, in a voicemail message to Miguel Del Toral, Stephen Bush implied that lead problems at the Walters home were a result of the structure’s indoor plumbing, which would mean that the homeowner was the responsible party (Del Toral 2015). Next, a March 10 email originating from Genesee County on Legionnaires’ disease produced a range of contentious conversations. Jim Henry emailed Flint’s Jerry Ambrose, City Administrator Natasha Henderson, and four other city officials. Henry made the following statement about Legionella in Flint:

> In 2014, Genesee County experienced a significant increase of confirmed Legionella illnesses relative to the previous years. Legionella can be a deadly, waterborne disease that typically affects the respiratory system...The increase of the illnesses closely corresponds with the time frame of the switch to the Flint River water. The majority of cases reside or have an association with the city. Also, McLaren Hospital identified and mitigated Legionella in their water system...This is rather glaring information, and it needs to be looked into now, prior to the warmer summer months when Legionella is at its peak and we are potentially faced with a crisis (Fonger, R., 2016 Feb. 11).

The following day, MDEQ’s Richard Benzie wrote to MDEQ officials including Mike Prysby, Liane Shekter Smith, and Stephen Busch. Benzie’s email included an action plan for addressing the Legionnaires’ outbreak that included informing DEQ management, reaching out to the CDC, and learning what information the other government agencies had about the outbreak (Livengood, C., 2016, March 19). After sending the action plan to his colleagues at MDEQ, Benzie also forwarded the information to two officials at the EPA, Jennifer Crooks, Chicago-based program manager for Michigan, and Thomas Poy. Benzie asked EPA to keep the information private because he did not know how an official announcement was going to be made, but he wanted to give them “a heads up that another problem could become public soon” (Livengood, C., 2016, March 19).
Liane Shekter Smith wrote that Stephen Busch rejected Henry’s claim that anyone at MDEQ avoided meeting with Genesee County (Livengood and Bouffard, 2016, Feb. 12). The following day, Friday, March 13, 2015, Jim Henry sent a detailed email to Flint and MDEQ officials in which he outlined the obstacles he experienced in attempting to investigate the Legionnaires’ disease outbreak. He pled with all governmental institution stakeholders for collaboration on the issue (Ridley, G., 2016, March 6):

- There was a substantial growth in the number of illnesses and the risks of increased disinfection byproducts “pale in comparison” (Ridley, G., 2016, March 6) to the potential damage to public health from legionella.
- The timeframe for the illness increases had an association with city’s water switch. As McLaren Hospital had “identified and mitigated” a Legionella problem in their system, this was “rather glaring information” that was time-sensitive, needing to be investigated “prior to the warmer summer months when Legionella [would be] at its peak and [they would be] potentially faced with a crisis” (Bouffard, K., 2016, Feb. 24).

MDEQ’s Stephen Busch replied to Henry’s email. Busch specified that the FOIA request was not aimed at MDEQ and questioned the legitimacy of Jim Henry’s assessment:

Your email below claims that you have explicitly explained the situation to our Department...However, since contacting our office early last October to indicate a rise in cases, we have not received any further information regarding your epidemiological investigation into this matter (Ridley, G., 2016, March 6). Conclusions that Legionella is coming from the public water system without the presentation of any substantiating evidence from your epidemiologic investigation appears premature and prejudice(d) toward that end (Bouffard, K., 2016, Feb. 24).

Brad Wurfel of MDEQ forwarded Busch’s response to various staff members at the governor’s office, including Snyder aide Harvey Hollins (Bouffard, K., 2016, Feb. 24),
press officers Sara Wurfel (Brad Wurfel’s wife), Dave Murray (Ridley, G., 2016, March 6), and Jarrod Agen (Oosting, J., 2016, Feb. 26). Wurfel alleged that Henry’s email was an excuse for the county’s failure to properly investigate a Legionnaire’s outbreak (Ridley, G., 2016, March 6) and placed distrust on the notion that a Legionnaires' disease increase had a relation to the water switch:

(Henry)'s made the leap formally in his email that the uptick in cases is directly attributable to the river as a drinking water source – this is beyond irresponsible, given that his department has failed to do the necessary traceback work to provide any conclusive of where the outbreak is sources, and it also flies in the face of the very thing a drinking water system is designed to do (Lynch, J. 2016, Feb. 5)... Legionnaires is NOT among the 90 water contaminants screened in the Safe Drinking Water Act, but in the absence of action by county health, our staff are now considering taking samples from various points in the system and working with (the health department’s) lab to test for it, if for no other reason than to rule it out (Bouffard, K., 2016, Feb. 24).

Although Stephen Busch’s email response to Genesee County’ called alleged some bias on Henry’s Legionellosis investigation, a few days later, on March 17, he reached out to the Flint City Officials Gerald Ambrose, Howard Croft, Natasha Henderson, Brent Wright, Daugherty Johnson and MDEQ's Mike Prisby. In the email, Busch included facts and figures related to protecting residential plumbing systems from a Legionnaires' disease outbreak (Livengood and Lynch 2016).

It had been XX since the water switch and XX since GM had determined that Flint’s new water was not good enough for car parts. In March 2015 the Flint City Council approved a resolution to reconnect to the DWSD (Fonger 2015, March 24). The 7-1 vote was symbolic because Jerry Ambrose was still in control of the city’s finances (Oosting, J. 2016, March 3). The following day, Ambrose issued a statement in which he referred to the Council’s vote as “incomprehensible” given the $12 million annual cost that returning to Detroit’s water service so would entail (Fonger, R., 2015, March 24).
**EPA’s March 26 Conference Call**

On March 26, officials from EPA’s Midwest region participated in a conference call in which they discussed Flint’s water quality problems. Those participating in the call included Jennifer Crooks, Miguel Del Toral, Darren Lytle, a Legionella specialist in the Cincinnati office, and EPA Region 5 Ground and Drinking Water Branch Chief Thomas Poy (Livengood and Bouffard, 2016, Feb. 12). Jennifer Crooks shared her conference call notes with MDEQ’s Stephen Busch and Mike Prysby (Livengood and Bouffard, 2016, Feb. 12). According to Crook’s email, the state and federal officials knew that there were TTHM violations as well as the possibility that increasing lead levels would pose a problem (Fonger, R., 2016 Feb. 16):

- Darren Lytle held that even in the case that increased levels of Legionella were not materializing in people’s homes, the bacteria were proliferating somewhere in the distribution system. He said that the source must be found, for if the microbes were “present, in the tanks/pipes then disturbance of changing the water quality and flushing could cause it to proliferate” (Bouffard, K., 2016, Feb. 24).

- Miguel Del Toral conjectured that the flushing of fire hydrants could be agitating sediments in the pipes, requiring more chlorine and creating an environment that was hospitable to Legionella (Fonger, R., 2016 Feb. 16).

- Tony Poy said his team was making preparations for when the state made the Legionella announcement (Livengood and Bouffard, 2016, Feb. 12).

EPA’s Miguel Del Toral been told by MDEQ that Flint’s water had a corrosion control treatment program, but he had evidence that showed that corrosion control chemicals had not been added to the Flint water system. On April 23 Del Toral contacted MDEQ’s Patrick Cook asking, again, if the Flint Water Plant was using corrosion control. The following day Patrick Cook confirmed that the water plant was not using corrosion control chemicals (NRDC and ACLU 2015). Del Toral replied to Patrick Cook on Saturday, April 25 to present his concern that the lack of corrosion control treatment combined
with pre flushing of fire hydrants were causing a system-wide public health problem. Additionally, Del Toral explained that based on his interpretation of the Lead and Copper rule Flint did not meet eligibility for the rule’s exception for adding corrosion control treatments only if deemed necessary at the conclusion of two consecutive six-month testing periods (Anderson et al v. Wyant et al, 2018, Feb. 22).

The following Monday Miguel Del Toral visited the Walters home, inspected the plumbing and found that it was mostly plastic (Del Toral 2015). As it turns out, the Walters family had the plumbing replaced when they moved into the home in 2011. This meant that the March voicemail from MDEQ’s Stephen Busch alluding to the lead results in the Walters home being a problem related to the home itself was an erroneous claim (Clark, A. 2018, July 15). Meanwhile, Stephen Busch and other DEQ officials wrote emails indicating they did not welcome Del Toral’s continued questioning of their methods: Busch wrote, “If he continues to persist, we may need Liane or Director Wyant to make a call to EPA to help address his over-reaches” (Lynch and Oosting 2016). Cook responded, “I agree, the constant second guessing of how we interpret and implement our rules is getting tiresome” (Bridge Michigan 2016).

**Institutional Deception**

At the individual level, Robert Skidmore’s illness and eventual death was the epicenter of the Flint Water Crisis’s Legionnaires’ disease scandal. Before 2015, GM Retiree Robert J. Skidmore, would go to Flint’s McLaren hospital every so often to have fluid drawn from his lungs due to a heart condition. According to Robert Skidmore Jr., the elder Skidmore was generally active despite his heart condition but became noticeably ill after his May 2015 visit to the hospital (Fonger, R. 2018, Jan. 30). Robert Skidmore was admitted to McLaren-Flint hospital with symptoms that resembled pneumonia on June 1, 2015 (Goodin-Smith, O., 2017, June 18). The following day a physician collected a sample from Skidmore that was positive for Legionnaires’ disease
(and would later match a sample taken from a victim at Hurley Medical Center) (Fleming and Oosting 2017).

On June 4 (three days after Skidmore was admitted to McLaren Flint) MDHHS Communicable Disease Division Director Jim Collins sent a report that detailed 45 Legionnaires’ disease cases that occurred in Genesee County from June 6, 2014 through March 9, 2015. Collins declared the outbreak to be “over” (Livengood and Bouffard, 2016, Feb. 12). Collins’ report was sent to Jim Henry and other county officials. In his message, Collins asserted that any assistance requests to the CDC had to come from the state health agency—not the county (Livengood and Bouffard, 2016, Feb. 12). Jim Henry forwarded the Collins email and expressed doubt that the outbreak was no longer a threat:

The executive summary regarding the Legionella outbreak is appreciated, but I don’t know if there is consensus that it is over...There has been a lot of finger pointing and miscommunications, which continues even in the email below from Jim Collins, today. I think us reaching out to CDC and EPA was appropriate. We were not gaining much ground with the state agencies and now the warmer weather is upon us (Livengood and Bouffard, 2016, Feb. 12).

After he visited her home, Miguel Del Toral connected LeeAnne Walters with Marc Edwards, a Virginia Tech researcher known for helping expose a lead problem in Washington, D.C.’s water system in 2004. Even though Edwards knew that the city and state agencies had tested the water in Walters’s home, he wanted to ensure that the analyses had not been manipulated and took it upon himself to have the home’s water in a controlled environment in his own laboratory. The samples revealed levels at a.) 300, b.) 2,000 and c.) 13,000 ppb. According to the EPA, water with 5,000 ppb is deemed to be toxic waste. Edwards shared with Walters and Del Toral that those results were the worst contamination of lead that he had seen in more than a quarter of a century (Clark, A. 2018, July 15).
**Del Toral’s Memo**

Miguel Del Toral asked LeeAnne Walters for permission to describe her ordeal to his colleagues at EPA (Lynch, J., 2016, March 29). He drafted a memo dated June 24, 2015 in which he delineated the health threats that Flint’s water system problems could mean for the community (Lynch, J., 2016, March 29). The report addressed Groundwater and Drinking Water Branch Head in Chicago Tom Poy, two EPA water experts, and Marc Edwards. The report also copied four MDEQ officials.

EPA protocol called for reports that make such allegations to be verified and approved by the agency before a final version could be released. As the danger increased with the passage of time, Del Toral sent hard copies to the MDEQ agents who were involved with Flint and when Walters asked for a copy, he did not make her wait for the vetted version. Walters shared the preliminary report with a reporter whom she trusted (Clark, A. 2018, July 15).

The report apparently created some conflict Del Toral, for the following day he described in detail his frustration with the institutional hurdles he faced in not just doing his job, but protecting unsuspecting people at risk. In response to questions from Rita Bair, an official with EPA’s Region V division, Del Toral summarized his impression that Flint officials were artificially lowering lead levels in collusion with MDEQ to conceal a problem and wrote the following:

> Sorry for the rant, but I am really getting tired of the bad actors being ignored, and people trying to do the right thing are constantly being subjected to intense scrutiny as if we were doing something wrong. I truly, truly hate working here. EPA is a cesspool. It’s all of this “don’t find anything bad” crap at EPA that is reason I desperately want to leave. I am not happy to find bad things. It is completely stressful because it means children are being damaged and I have to put up with all of the political crap, but where these problems exist, I will not ignore them. I understand that this is not a comfortable situation, but the State is complicit in this and the public has a right to know what they are doing because it is their children that are being harmed. At a MINIMUM, the city should be warning residents about the high lead, not hiding it telling them there is no lead in the water. The widespread high lead is my judgment based on a couple of decades of working with lead issues and I stand by it despite the
limited data set from Flint. They have had no corrosion control treatment in place for over a year now and they have lead service lines. It's just basic chemistry on lead solubility. You will have high lead leaching into the water where you are doing nothing to mitigate that. We don't need to drop a bowling ball off every building in every town to know that it will fall to the ground in all of these places. If there truly is a question in anyone's mind that there is a widespread lead problem in Flint, despite the painfully clear science, I am requesting that I be provided two assistants and that you folks allow me to go and sample 100 homes in Flint without pre-flushing and then we can satisfy any doubts that anyone may have. I am not even asking for per diem and I'll pay my own hotel (Lynch, J., 2016, March 29).

The information that Del Toral’s memo revealed had many possible implications for the health of many citizens along with the institutions that had failures. In July 2015, Dennis Muchmore, the governor’s chief of staff, heard that church pastors in Flint were worried about lead levels in the water. When Muchmore followed up with state officials, he was told that blood lead levels were not a source of alarm (Fonger, R., 2016, Feb. 28). EPA Region V Administrator Susan Hedman reached out to Mayor Walling to inform him of EPA’s support of MDEQ as they addressed water issues and, on the Del Toral memo, said “it would be premature to draw any conclusions” (Burke, M.N., 2016, Feb. 26) and it ”should not have been released outside the agency” (Lynch, J., 2016, March 29). The memo was kept internally for four months after that (Burke, M.N., 2016, Feb. 26).

**Lead Story Breaks**

Curt Guyette, was hired to serve as an investigative reporter for the American Civil Liberties Union (ACLU) of Michigan. Even though he worked for a nonprofit organization instead of a traditional news outlet, Guyette followed journalism etiquette and on July 7 contacted MDEQ’s media relations department. After the call, DEQ’s Karen Tommasulo summarized her conversation with Guyette in an email to Brad Wurfel:

I got a weird call from a “reporter” with the ACLU asking about Flint drinking water. His Name is Curt Guyette. He said he heard from someone at EPA that we use a “flawed methodology” to collect our water samples. We apparently tell
people to flush the water from their pipes, let it sit overnight, and then take the sample in the morning. He claims this doesn’t measure what’s in the main pipes, only in the pipes leading directly to their house. Consequently, he claims, we vastly underestimate lead. Apparently the EPA and Virginia Tech sampled a house using a different methodology and found 13,000 ppb lead. Additionally, he claimed Flint is not adding corrosion control to their water, and said a city of their size should be doing so by law. But apparently we told Flint they didn’t have to. I didn’t offer any comment, just took the message from him (Bridge Michigan, 2016, March 1).

The ACLU of Michigan broke the story based on Del Toral’s memo on July 9, 2015 (Guyette 2015). After she got an interview request from Michigan Public Radio, Tommasulo emailed Brad Wurfel saying, “Apparently, it is going to be a thing now” (Osnos, E. 2016, Jan. 20). Brad Wurfel served as MDEQ spokesperson for the Michigan Public Radio interview that aired on July 13, in which he said, “Let me start here—anyone who is concerned about lead in the drinking water in Flint can relax...It does not look like there is any broad problem with the water supply freeing up lead as it goes to homes” (Smith, L. 2015, July 13).

After the ACLU’s lead story broke, LeeAnne Walters said that she got a peculiar call from Miguel Del Toral: “He was telling me that he couldn’t talk to me anymore...He said he couldn’t talk to anybody from Flint or about Flint” (Lynch, J., 2016, March 29). According to EPA Administrator Gina McCarthy, EPA got evidence that there was a systemic lead problem on July 21. Before then, Del Toral’s hypothesis was based on observations from three properties alone (Lynch, J., 2016, March 29).

The following day, July 22, 2015, Dennis Muchmore, chief of staff for the governor, sent an email to MDHHS Director Nick Lyon in which he described his irritation with the situation:

I'm frustrated by the water issue in Flint. I really don't think people are getting the benefit of the doubt. Now they are concerned and rightfully so about the lead level studies they are receiving from the DEQ samples...These folks are scared and worried about the health impacts and they are basically getting blown off by us (as a state we're just not sympathizing with their plight) (Demas, S.J. 2016, Jan. 12).
Additionally, Linda Dykema, director of MDHHS’s Division of Environmental Health, prepped her managers with how to answer public inquiries about Del Toral’s memo:

DEQ has not seen a change in the city’s compliance with the lead rule since switching to the Flint River source...Regarding the EPA drinking water official quoted in the press articles, the report that he issued was a result of his own research and was not reviewed or approved by EPA management. He has essentially acted outside his authority (Anderson et al v. Wyant et al, 2018, Feb. 22, p. 10).

On Sunday, Aug. 23, Virginia Tech’s Marc Edwards informed MDEQ that he was going to conduct a water quality study in Flint (Snyder RICO Lawsuit 2016, April 6, p. 51). Before the following weekend, MDEQ’s Brad Wurfel accused Del Toral, the ACLU and activists of distorting the truth:

This person is the one who had EPA lead specialist come to her home and do tests, then released an unvetted draft of his report (that EPA apologized to us profusely for) to the resident, who shared it with ACLU, who promptly used it to continue raising hell with the locals... [I]t’s been rough sledding with a steady parade of community groups keeping everyone hopped-up and misinformed” (Snyder RICO Lawsuit, 2016, April 6, pp 51-52).

Toward the end of August, Virginia Tech’s preliminary findings based on 120 initial samples were made available; the results showed that 42 percent of the samples were greater than 5 ppb and 20 percent exceeded the EPA’s lead action limit of 15 ppb (Fonger, R. 2015, Sept. 2). Shortly thereafter Mike Glasgow and Flint’s Director of Public Works Howard Croft had an in-person conversation with at least one MDEQ official. During this in-person meeting, an MDEQ official referred to the city’s corrosion controls as being “not optimized” and needing phosphates. Mike Glasgow sent Howard Croft an email on Aug. 31 that provided background information on the DEQ assertion: "We originally had this chemical in the design, but the DEQ did not mandate it from the start,
they informed us to wait and see the results of our lead and copper sampling to determine if it was necessary” (Ridley, G. 2016, March 11).

Virginia Tech’s Marc Edwards released his findings based on water collected from 300 Flint homes on Sept. 2, 2015. The report concluded the “very corrosive” drinking water was “causing lead contamination in homes” (Fonger, R. 2015, Sept. 2). That same day MDEQ issued a press release in response to the Virginia Tech report:

[...] we want to be very clear that the lead levels being detected in Flint drinking water are not coming from the treatment plant or the city’s transmission lines... The issue is how, or whether, and to what extent the drinking water is interacting with lead plumbing in people’s homes...the results reported so far fail to track with any of the lead sampling conducted by the city. In addition, Virginia Tech results are not reflected by the blood lead level testing regularly conducted by the state department of community health that have not shown any change since Flint switched sources (Snyder RICO Lawsuit, 2016, April 6, p. 52).

The following day Howard Croft informed city and state officials that the city was again compliant with the Safe Drinking Water Act (Ridley, G., 2016, Feb. 14; Lynch, J. 2016, Feb. 10). Additionally, he provided an explanation for the decision to opt for testing instead of adding corrosion control preemptively:

Most chemicals used in this process are phosphate-based and phosphate can be a “food” for bacteria...At the onset of our plant design, optimization for lead was addressed and discussed with the engineering firm and with the (Michigan Department of Environmental Quality)...It was determined that having more data was advisable to the commitment of a specific optimization method (Lynch, J. 2016, Feb. 10).

On Sept. 6, 2015, Michigan Public Radio published a story on the Virginia Tech report. Brad Wurfel spoke on behalf of MDEQ and said, “The samples don’t match the testing that we’ve been doing in the same kind of neighborhoods all over the city for the past year. With these kinds of numbers, we would have expected to be seeing a spike somewhere else in the other lead monitoring that goes on in the community” (Carmody, S. 2015, Sept. 6).
Marc Edwards and his research team won a National Science Foundation (NSF) grant to study the effects of interruptions in corrosion control treatments in water systems, which was announced on Sept. 10, 2015 (Bouffard, K. 2016 Jan. 23). The following day, Sept. 11, 2015, Dr. Mona Hanna-Attisha, a pediatrician at Hurley Medical Center, contacted Pediatrician Lawrence Reynolds of Mott Children's Health Center to share concerns about how the revelations demonstrated in the Virginia Tech report could be affecting the community’s children. She gathered a medical research team while Dr. Reynolds contacted MDHH’s Childhood Lead Poisoning Prevention Program (CLPPP) to request Flint data.

Meanwhile, Jennifer Crooks, Michigan Program Manager for the EPA, sent an email from a personal account dated Sept. 11 to MDEQ officials describing a possible communications strategy for MDEQ officials about the Del Toral memo (Lynch, J., 2016, March 29): "So if the Legislature or whoever might say you all were CC'd, you can truthfully respond that it was the EPA's request that the report not be sent to the CC's. Consequently, you all never received the report from Miguel" (Howes, D. 2016, Feb. 13).

While the story about high lead levels in Flint was starting to draw media attention, discussions about Legionnaires’ disease were occurring within the confines of state institutional actors, away from the public eye. According to Eric Brown, deputy director of federal relations for Gov. Snyder, on Sept. 18 he participated in a conference call with state officials. During the call, MDHHS’s Nick Lyon “indicated there was an increase” in Legionnaires’ disease cases in Flint (Fonger, R., 2018, May 9). Others participating in the call included State Treasurer Nick Khouri, MDEQ’s Brad Wurfel, and Snyder aides Harvey Hollins and Dennis Muchmore. Lyon said that although a rise had been noted, 73 percent of cases occurred in people who lived outside of Flint and there was no certainty that the spike was directly related to the Flint River water switch (Fleming, L., 2018, May 8).
Dr. Mona Hanna-Attisha did not get information from the state on children’s lead levels, so she used the information that she had access to. She compared her patients’ blood lead levels from before and after the April 2014 water switch and found enough of an increase to warrant holding a press conference on Sept. 24 to warn the community of a possible health emergency (Associated Press 2015, Sept. 25).

Before the Hurley Medical Center press conference occurred, Nick Lyon made the following statement: “I would like to make a strong statement with a demonstration of proof that the lead blood levels seen are not out of the ordinary and are attributable to seasonal fluctuations” (Fonger, R., 2017, June 15). At the press conference Dr. Hanna-Attisha presented her findings and her remarks were followed by a statement by GCHD’s Marc Valacak (Associated Press 2015, Sept. 25). In response to the information released during the Hurley Medical Center announcement, MDEQ’s Brad Wurfel lamented that the water controversy was coming close to becoming “hysteria” and affirmed, "Flint's drinking water is safe in that it's meeting federal and state standards" (Associated Press 2015, Sept. 25).

**Institutional Acknowledgment: The Lead Problem**

Governor Snyder got a briefing on the Flint Water Crisis on Sept. 28 (Fonger, R., 2016, Feb. 28). According to Dennis Muchmore, he personally pressured Nick Lyon to peruse the Hurley Medical Center and Virginia Tech reports (Livengood, C. 2016, Jan. 16). After a second review of outside research, state agencies recanted their previous statements and confirmed that there was a rise in blood lead levels when they looked at Flint zip codes alone (Fonger, R., 2016, Feb. 28). The governor’s office engaged in a crisis response consisting of an Oct. 2-announcement consisting of an action plan for addressing the lead problem (Fonger, R., 2015, Oct. 2) and the creation of a bipartisan task force to investigate government agencies’ actions leading to the water quality emergency (Oosting, J. 2016, Feb. 23). Liane Shekter Smith was moved to a different
role and later fired. On Oct. 15, the governor signed a bill that designated funds to contribute in helping Flint to switch back to using Detroit’s service, which provided water from Lake Huron (Oosting, J., 2016, Feb. 24).

In November, Richard Baird, senior advisor to the governor, reached out to Michigan State Police Director Col. Kriste Kibbey Etue. In his message he said that, if possible, the governor favored avoiding a disaster declaration and that Dan Wyant, Nick Lyon and he were “working on it” (Fonger, R. 2017, October 8). Halfway through the month Howard Croft, who had led the city's public works department since Mike Brown appointed him in 2011, resigned abruptly (Ridley, 2016, January 19). In his resignation letter he addressed the city’s transition period and efforts to gain back lost trust. Additionally, he alluded to difficulties experienced by the city government employees:

I would also like to applaud all of the departmental employees who by not fault of their own have encountered drastic changes in staffing, equipment, and work environment, yet they continue to provide daily services to the absolute best of their ability. Again, it has been an honor to serve alongside such a talented group of professionals (Fonger, R. 2015, Nov. 17).

**Pressure Building on Legionnaires’ Disease**

On the last day of the month Genesee County officials sent a draft press release alerting Flint residents about a surge in Legionnaires’ disease illnesses in Genesee County since the water switch to Darren Lytle, the EPA’s Legionella expert, for review (Livengood and Bouffard, 2016, Feb. 12). On December 1, Lytle’s message was redirected across state lines and governmental institutions. He first sent the press release draft to other EPA colleagues remarking that he had connected with the right group of people:

I have been trying to get to the bottom of reports of increases in reported cases of Legionnaires’ Disease in Genesee County and finally reached the correct people...They shared some data that is very concerning and although they can't pinpoint the exact source of Legionella, drinking water can’t be ruled out (Livengood and Bouffard, 2016, Feb. 12).
Lytle’s email was shared with other agencies. Later that day CDC’s Laurel Garrison reached out to MDHHS’s Jim Collins (who in June had reminded Genesee County that any requests for DCD assistance should come from his state agency) along with other state officials to clarify the extent of the role her agency had had in the Legionnaires’ disease outbreak:

As you’re aware, we haven’t received a formal report from MDHHS and haven’t received a request to review anything in any formal or informal way since June. Of course, we are ready to assist if there is a need, but I'm concerned that this statement is misrepresenting CDC’s current involvement (Livengood and Bouffard, 2016, Feb. 12).

Genesee County’s Health Officer, Mark Valacak, later got a conference call request from MDHHS’s Eden Wells and Sue Moran. According to Valacak, Wells said that she thought the county and the state and county agencies were a team and they should issue a joint news release (Fonger, R., 2017, Aug. 10). In a Dec. 4-memo to Genesee County co-workers, Jim Henry stated that the CDC’s assistance was needed and drew attention to date discrepancies on Jim Collins’s June 2015 Legionnaires’ disease outbreak declaration:

I think the Executive Summary was probably written on 6/4 and pre-dated 5/29. I wonder what the Executive Summary created date shows on his computer. MDHHS kept screwing up the clinical specimens in the lab, so CDC agreed to provide assistance. Jim Collins was well aware that we were making progress in this area with CDC. Some of the people at the state agencies are simply criminals! (Bouffard, K., 2016, April 27).

On Sunday, December 13, 2015, 85-year-old Robert Skidmore, who had become markedly ill since his visit to McLaren hospital the previous May, passed away. According to his death certificate, Skidmore perished from “end stage congestive heart failure” with diabetes listed as a contributing cause (Fleming, L. and Oosting, J, 2017, June 15).

Although the winter holiday season tends to be a slow time for many government agencies, some Michigan state officials were working. According to Snyder
aide Jim Hollins, he participated in a Dec. 24 conference call with the governor, Richard Baird and three others, not including Nick Lyon. During the call, Hollins discussed concerns he had heard about the Legionnaires’ disease outbreak (Fleming, L. 2017, Nov. 2). On Dec. 29, the last Tuesday of 2015, the Flint Water Advisory Task Force that Gov. Snyder had created the previous October released a letter outlining its preliminary findings. That same day MDEQ’s Dan Wyant and Brad Wurfel resigned (Lynch, Livengood and Carah 2016) and the governor hired Keith Creagh to take over as director of MDEQ (Burke, M. N., 2016, Jan. 30).

New Year, More Scandal

On the first Tuesday of 2016, Jan. 5, Gov. Snyder declared a state of emergency in Genesee County (Fonger, R., 2016, Jan. 21; Ridley, G. 2016, January 20). According to Dennis Muchmore, MDHHS’s Nick Lyon informed the governor about the Legionnaires’ disease outbreak on Jan. 11, 2016 (Livengood, C. 2016, Jan. 16). Additionally, on Jan. 11 Snyder signed an executive order that established a multi-agency, non-public committee was that was to be responsible for generating an action plan to help guarantee that the drinking water was safe and dealing with the expected after-effects of raised lead levels.

The following day, Jan. 12, 2016, Governor Snyder asked FEMA for a federal “interagency recovery plan,” a request that was approved expeditiously and began by having a disaster recovery coordinator for the state appointed (Lynch and Oosting 2016). Before the end of the day, the governor activated the National Guard (Lynch and Oosting 2016).

Institutional Acknowledgement: Legionnaires’ Disease Outbreak

Wednesday, January 13, 2015 was a turning point in the story of the Flint Water Crisis. That morning Snyder administration aides briefed and solicited feedback from Jim Ananich, the Democratic Senate Minority Leader from Flint as well as other state lawmakers (Lynch and Oosting 2016). From Detroit (Fleming, L., 2017, Oct. 7), the governor held a “hastily arranged” (Lynch and Oosting 2016) press conference to inform
the public about an increase in Legionnaires’ disease cases that occurred in Genesee County since the City of Flint began drawing water from the Flint River.

Nick Lyons and Eden Wells participated in the press conference and proclaimed that it was not known if there was a clear cause-and-effect relationship between the illness and the river water (Lynch and Oosting 2016). The conference press kits contained a fact sheet that described what was missing to make a definitive connection between the Legionella increase and the corrosive Flint River water:

The state laboratory, in fact, had 12 clinical isolates from Legionnaires' patients in Flint, the state health department confirmed. Of those isolates, molecular typing was completed on the eight that tested positive for Legionella. Investigators could then search for a DNA match in the environment. But since water samples were never tested, there was nothing to compare the clinical isolates with (Bouffard, K., 2016, Feb. 24).

The governor’s press conference announcing the Legionnaires’ disease outbreaks was a sort of second assault to a community that was already struggling with health concerns due to the water, this time, instead of potential long-term effects, people had died due to the actions taken by government institutions. Two days after the Legionella announcement, Michigan Attorney General Bill Schuette declared that his office would investigate whether any state laws were violated in relation to the water crisis. In addition to the attorney general’s investigation, the EPA’s Office of Inspector General announced an inquiry into the agency’s role in the crisis (Fonger, R., 2018, March 8). On Jan. 16, the U.S. Attorney’s Office in Detroit verified rumors that the Federal District office was also looking into the crisis. Gina Balaya, spokesperson for Detroit’s U.S. Attorney’s office stated, "Our policy has always been that we neither confirm nor deny investigations; however, the nature of this situation warranted an exception to that policy” (Livengood, C. 2016, Jan. 16).
Epilog

Some recent updates follow.

- Governor Snyder released the City of Flint from state receivership in April 2018.
- Attorney General Schuette left office in January 2019, replaced by Dana Nessel. The following June, she dropped the eight remaining pending charges, explaining that prosecutors and investigators expressed grave concerns about the investigative approach and legal theories. Nessel pledged to continue the investigation (Smith 2019).
- In July 2019, the Harvard Kennedy School’s Taubman Center for State and Local Government announced the appointment of former governor Rick Snyder to a yearlong senior fellowship (Larkin 2019). Within days of the announcement, Snyder removed himself from the fellowship amid a backlash over his role in Flint’s Water Crisis (Vigdor 2019).
- The City of Flint takes drinking water from Lake Huron. But many residents are still drinking bottled water because many lead pipelines in the city’s water distribution system have yet to be replaced.

How far did Flint get away from another financial meltdown? Did two bouts of state receivership revive the city’s economic base, improve the quality of its services or schools, and restore public health? As of July 2019, not far and not much (McCann 2019). Flint’s overall rank on operating efficiency was 146 out of 150 of the nation’s largest cities. The city also ranked 150 in economy, 146 in quality of city services, 141 in education, and 138 in health (McCann 2019).
CHAPTER 4

INSTITUTIONAL FAILURES AND ENVIRONMENTAL ILLNESS

The Flint Water Crisis is the direct result of the failure of multiple government institutions in Michigan. The general question I address through Freudenburg’s lens of recreancy is: How are we to understand the failures of institutional actors to perform their duties adequately?

Freudenburg’s invaluable insight is the paradox of contemporary society’s complex, interdependent division of labor. It has produced unprecedented wealth and lengthened life expectancies. At the same time, however, the division of labor has substantially increased vulnerability to institutional failure. Freudenburg referred to this institutional failure with the more neutral term of “recreancy,” which he defined as “the “behaviors of persons and/or of institutions that hold positions of trust, agency, responsibility, or fiduciary or other forms of broadly expected obligations to the collectivity, but that behave in a manner that fails to fulfill the obligations or merit the trust they enjoy” (1993:916–17).

Freudenburg urged analysts to adopt the institutional unit of analysis and focus on the behaviors of institutional actors as they are influenced by institutional arrangements. I developed two research questions that represent his conceptualization of recreancy and use them to structure my analysis:

- Is the level of institutional resources adequate for enabling officials to carry out their responsibilities with the degree of vigor necessary to merit the societal trust they enjoy?
- What behaviors by which institutional actors resulted in recreancy?
Institutional Resources

RQ1. Is the level of institutional resources adequate for enabling officials to carry out their responsibilities with the degree of vigor necessary to merit the societal trust they enjoy?

The institutional context underlying the Flint Water Crisis is neoliberal governance with an agenda featuring minimal government, balanced budgets, deregulation, and a shift away from state welfare provision. When public debt is deemed to be too high, accounts are balanced through austerity measures, by raising revenues and cutting spending (Azar 2015), typically by slashing social programs. Just as austerity regimes are imposed on developing countries by developed countries, they are also imposed on bankrupt cities by state governments in this country.

Neoliberal ideologies, “produced and reproduced through institutional forms” (Peck and Tickell 2002: 383), become embedded within national, regional, and local contexts (Brenner and Theodore 2002: 351). Neoliberalism is a comprehensive cultural orientation that permeates perceptions and is commonly accepted (Harvey 2007). The acceptance of austerity measures is frequently associated with the loss of sovereignty.

Neoliberalism in Michigan was clearly expressed in Governor Snyder’s campaign promises and subsequent economic policies. A fiscal conservative, Snyder kept the state budget afloat in part by changing the rules of statutory revenue sharing, taking funds away from cities. He imposed an austerity program on financially struggling cities by placing them in state receivership and appointing emergency managers with the authority to overrule local elected officials. Cities were forced to relinquish their sovereignty.

This institutional context of neoliberalism and austerity shaped decisions about the resources available to Genesee County and the City of Flint. I discuss that state of resources regarding staff numbers, necessary equipment, access to expert knowledge, and funding.
The City of Flint Utilities Department was severely understaffed, and many personnel were undertrained, inexperienced with full-time plant operations, and ill-prepared to manage complex water chemistry issues (FWATF 2016). Full-time use of Flint’s water distribution system stopped in 1967 when the city began purchasing water from the Detroit Water and Sewer Department. Consequently, the entire outdated system should have been significantly modernized before restarting it, it was not.

The city and county were forced to rely on MDEQ for expert knowledge. Instead of the information they needed, city and county officials received mostly vague, and sometimes inaccurate, feedback on their inquiries.

Funding was a major problem in both state and city government institutions. MDEQ’s Office of Drinking Water and Municipal Assistance, charged with regulating the state’s community water systems, was responsible for a greater number of community water systems than were other states in EPA’s Region V. Although all of Region V states’ water system regulators were financially strained, Michigan was worse-off: the state charged lower fees for the program, requiring it to rely on general funds and federal revenues (Flint Water Advisory Task Force 2016).

After nearly a year’s worth of citizen complaints about water quality, the City Council in 2015 voted to reconnect Flint to Detroit water. But emergency manager Ambrose publicly stated that he found the Council’s vote “incomprehensible,” given the $12 million annual fee that returning to Detroit’s water service would cost (Fonger, R., 2014, March 24). Treasurer Secretary Andy Dillon “concluded the cost to reconnect Flint to Detroit water—an extra $1 million per month—was deemed more than the cast-strapped city of Flint could afford” (Livengood, C., 2016, Feb. 26).

**The Individual Behaviors of Institutional Actors**

RQ2. What behaviors by which institutional actors resulted in recreancy?

In March 2013, MDEQ Director Dan Wyant wrote to Treasurer Secretary Andy Dillon that MDEQ supported the plan to replace DWSD with the Karegnondi Authority as
Flint’s water source (Ridley, G., 2016, Feb. 14). Dillon then notified the Governor of his approval of the plan. Flint emergency manager Ed Kurtz signed the agreement with KWA in April and notified Dillon that he was evaluating options for temporary water sources and inclined to choose the Flint River (Oosting, J., 2016, March 30).

Freudenburg emphasized the behavior of institutional actors that leads to recreant outcomes. I identified three pivotal institutional decisions in the making of the Flint Water Crisis, and here I describe the actions of the individual officials who participated in the decision.

**Rushing the Switch Despite Concerns**

Officials from MDEQ and the City of Flint expressed serious concerns about the quality of Flint River water prior to the switchover. In January 2013, MDEQ’s District Supervisor of the Office of Drinking Water and Municipal Assistance, Mike Prysby, communicated his unease about water quality with Liane Shekter Smith, Chief of that office. Several months later, Stephen Busch, District Engineer in the same office warned MDEQ Director Dan Wyant and Liane Shekter Smith that Flint River water posed significant public health risks. Just before the April 2014 switchover to Flint’s aged water treatment system, Michael Glasgow, the City of Flint’s Supervisor of Laboratory and Water Quality, cautioned the Governor’s office that the rush to launch full-time production at Flint’s water treatment plant "could lead to some big potential disasters down the road" (Oosting, J., 2016, March 30).

Despite the warning signs, Flint Department of Public Works Director Howard Croft and utilities administrator Duffy Johnson cited budgetary constraints in denying Glasgow’s request to delay the switchover for six months so he could better prepare the water treatment plant (Oosting, J., 2016, March 30).

Incidents in the first six months after the switchover failed to persuade officials of the hazardous risks presented by drawing the city’s drinking water from the Flint River. In August 2014, water sampled from the Flint water distribution system was
found to violate standards for E. coli and fecal coliform bacteria. The city issued a local advisory to boil tap water before using and added more bacteria-killing chlorine at the water treatment plant. A month later, General Motors notified city officials that its Flint Engine Operations facility would no longer use Flint water because the level of chlorine in the water corroded auto parts. MDEQ responded with a statement asserting that the chlorine in Flint’s water was within public health guidelines. In January 2015, MDEQ cited the city for violating water standards for total trihalomethanes (TTHM), a carcinogen caused by an overload of chlorine.

Flint residents lodged complaints about the water quality and public health risks. Many called for a return to DWSD water. But, in March, Flint emergency manager Gerald Ambrose rejected the call because of the costs.

**No Corrosion Control**

The highly corrosive water from the Flint River left the water treatment plant without the addition of corrosive control chemicals. The corrosive water coursing through Flint’s old lead service lines eroded the biofilm attached to the inner surface of the line. Bacteria were released into the water and multiplied; eventually, the corrosive water caused lead, copper, and iron to leach from the service line. If corrosion control chemicals had been added at the water treatment plant, damage to the lines would not have occurred.

In March 2014, prior to water switch, Glasgow, supervisor at Flint’s water treatment plant, had assumed that the water treatment plant would need to add corrosion control chemicals, which would have required a six-month delay to preparing the plant. He asked Adam Rosenthal, a MDEQ water quality analyst for guidance on water quality monitoring parameters and information about lead and copper monitoring.
April 2014, Glasgow again contacted Rosenthal for information, copying Mike Prysby, Supervisor in the Office of Drinking Water and Municipal Assistance, and Stephen Busch, Prysby’s supervisor.

Two months later, Rosenthal responded to Glasgow’s message, stating that orthophosphate monitoring would not be needed because the chemicals were not being added to the water system [CITE]. Glasgow trusted MDEQ to inform him if any changes were needed (Oosting, J., 2016, March 30).

In October 2014, Valerie Brader, Governor Snyder’s environmental policy adviser, forwarded to MDEQ Director Dan Wyant an article reporting General Motors’ withdrawal from Flint’s water distribution system because of the corrosiveness of the water. She wrote: “This underscores the need for the folks from DEQ to talk to the EM in Flint and to make sure a blended water solution is being explored” (Livengood, C., 2016, Feb. 26).

Brader also shared the article with officials in the Governor’s Office: Chief Legal Counsel Mike Gandola, Chief of Staff Dennis Muchmore, Deputy Chief of Staff Beth Clement, and Communications Director Jarrod Agen. She noted that she had purposely omitted MDEQ from the email thread to protect the exchange among the governor’s staff from the state’s Freedom of Information Act.

In February of 2015, Jennifer Crooks, EPA Region V Ground Water and Drinking Water Branch’s program manager of Michigan’s water distribution system, emailed MDEQ’s Stephen Busch suggesting that Flint’s corrosive water was leaching heavy metals from the inside surfaces of the pipelines (Fonger, R., 2016, Feb. 28). She stated that Flint’s water system was required to have “Optimal Corrosion Control Treatment” (OCCT) (Howes, D. 2016, Feb. 13). The following day, Miguel Del Toral, an EPA Region V groundwater regulation manager, asked Busch whether OCCT was used in Flint’s water system (Lynch, J., 2016, April 18). Busch replied in the affirmative without specifying any details (Lynch, J., 2016, April 18; Clark, A. 2018, July 15).
In April 2015, Busch’s claim was refuted in an email exchange between Del Toral and Patrick Cook, an engineer with MDEQ’s Community Drinking Water Unit. Del Toral asked Cook about corrosion control treatment in Flint. Cook replied that the water plant was not practicing corrosion control (NRDC/ACLU petition to EPA, 2015, Oct. 1). He described MDEQ’s incorrect understanding of the lead and copper rule: “If it is determined that Flint has to install corrosion control treatment, the rule allows up to two years to complete a study and an additional two years to install the treatment unless we set a shorter time” (Howes, D. 2016, Feb. 13).

Del Toral expressed his concern to Cook about the lack of corrosion control treatment and high lead levels, explaining that, based on his interpretation of the Lead and Copper Rule, Flint did not meet eligibility for opting out of using corrosion control treatments (Anderson et al v. Wyant et al, 2018, Feb. 22).

Cook and Busch exchanged emailed complaints about Del Toral’s inquiries about corrosion control treatment. Busch and other MDEQ officials wrote emails indicating they did not welcome Del Toral’s continued questioning of their methods. Busch wrote, “If he continues to persist, we may need Liane or Director Wyant to make a call to EPA to help address his over-reaches” (Lynch, J., 2016, April 18). Cook responded, “I agree, the constant second guessing of how we interpret and implement our rules is getting tiresome” (Shamus, 2016, Feb. 14).

In July, MDEQ performed an abrupt about-face and determined that Corrosion Control Treatment was needed, specifically phosphates should be added. Glasgow privately remarked to Croft: “We originally had this chemical in the design, but the DEQ did not mandate it from the start, they informed us to wait and see the results of our lead and copper sampling to determine if it was necessary” (Fonger, R., 2016, March 11).

MDEQ’s hand was finally forced in September, when Dr. Mark Edwards, Professor of Civil and Environmental Engineering at Virginia Tech, released his findings based on water samples from 300 Flint homes that the drinking water was causing lead
contaminations in homes (Fonger, R. 2015, Sept. 2). MDEQ immediately issued a press release claiming that “the lead levels being detected in Flint drinking water are not coming from the treatment plant or the city’s transmission lines” (Snyder RICO Lawsuit, 2016, April 6, p. 52). Instead, the agency contends, the issue is whether and how drinking water interacts with the lead plumbing in residences.

On September 3, Flint Director of Public Works, Howard Croft, informed city and state officials that the city had implemented the appropriate Corrosion Control Treatment and was in compliance with the Safe Drinking Water Act (Ridley, G., 2016, Feb. 14; Lynch, J. 2016, Feb. 10).

**Not Enlisting Aid from EPA and CDC**

The standard protocol for intervention by federal agencies into state affairs dictates that state officials must invite the federal agencies’ participation. Michigan’s state agencies would likely have benefited from the resources and expertise of the EPA and CDC. Yet several incidents in 2015 demonstrate state officials’ opposition to such interventions.

In February 2015, a Genesee County Health Department official contacted EPA for information and aid about the county’s outbreak of Legionnaires’ disease. The EPA official then communicated the county official’s concerns to the Centers for Disease Control and Prevention (CDC). Perceiving the seriousness of the outbreak, CDC officials contacted MDHHS to offer its assistance in the form of epidemiologic and laboratory support at its Atlanta headquarters or in Michigan. MDHHS officials rejected the offer, insisting that they had the situation under control (Livengood, C., 2016, Feb. 12; Fonger, R., 2016, Feb. 16; Livengood, C., 2016, Feb. 12).

Busch and other DEQ officials traded emails in April, sharing the sentiment that Del Toral’s continued questioning of their methods was unwelcome. Busch wrote, “If he continues to persist, we may need Liane or Director Wyant to make a call to EPA to help address his over-reaches” (Lynch, J., 2016, April 18). Cook responded, “I agree, the
constant second guessing of how we interpret and implement our rules is getting
tiresome” (Shamus, 2016, Feb. 14).

On June 4, 2015, MDHHS Director of the Communicable Disease Division, Jim
Collins, informed Genesee County health officials that requests for assistance from the
CDC could only originate in the state-level health agency, not the county (Livengood, C.,

After the ACLU broke the lead story in July, Flint resident LeeAnne Walters
received a phone call from Del Toral, with whom she had worked on the lead crisis: “He
was telling me that he couldn't talk to me anymore...He said he couldn't talk to anybody
from Flint or about Flint” (Lynch, J., 2016, March 29).

CDC officials in December again offered assistance to MDHHS: “As you're aware,
we haven’t received a formal report from MDHHS and haven't received a request to
review anything in any formal or informal way since June. Of course, we are ready to
assist if there is a need” (Livengood, C., 2016, Feb. 12). Again, their offer was not
accepted.

**Discussion and Conclusions**

I began with a general question: How are we to understand the failures of
institutional actors to perform their duties adequately? I applied Freudenburg’s term for
institutional failure, recreancy, to a case study of the Flint Water Crisis. The proximate
causes of the crisis were a polluted source of city drinking water, an outdated water
distribution system, and the improper treatment of corrosive water. The distal causes
were Flint’s long-term financial problems and the political maneuvering of individual
Michigan officials. Denied local control through democratically elected city council and
mayoral authority. The emergency manager policy, in its current operation, denies
citizens—primarily African-Americans—local, elected democratic control.
Multi-Institutional Interactions

Despite the unmistakable connection between the quality of drinking water and public health, there is no liaison between MDEQ and MDHHS to ensure that complaints or concerns about water are brought to the attention of MDHHS staff in a timely fashion to prompt investigative action. The lack of a liaison function within state government also adversely affected the response to cases of Legionellosis.


Ahmad, Zahra. 2019/06/19 2019.


Anderson Et Al V. Wyant Et Al: Amended Complaint with Jury Demand Plaintiffs' Master Short Form Complaint and Jury Demand Filed by All Plaintiffs against All Defendants. No New Parties Added, February 22, 2018 2018.


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———. 2015/03/24 2015.


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APPENDICES
Appendix A: Hierarchy
Government Institutional Hierarchies

Federal
Environmental Protection Agency

State of Michigan
Office of the Governor
Department of Health and Human Services
Chief Medical Executive
State Epidemiologist and Director of the Bureau of Epidemiology
Michigan Maternal, Infant and Early Childhood Home Visiting
Michigan Healthy Homes and Lead Poisoning Prevention
Data Manager

Department of Environmental Quality
Office of Drinking Water and Municipal Assistance
District Supervisor
District Engineer
Specialist for the Community Water Drinking Unit
Water Quality Analyst

Department of the Treasury
Flint Emergency Manager

Genesee County
Board of Commissioners
Health Department

City of Flint
City Council
Department of Public Works
Drinking Water Program
Water Quality
## Appendix B: Charges

Criminal Investigation Charges

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Title</th>
<th>Investigation</th>
<th>Date Charged</th>
<th>Charges</th>
</tr>
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<tbody>
<tr>
<td>Michael Prysby</td>
<td>MDEQ</td>
<td></td>
<td>Overall FWC</td>
<td>April 20, 2016</td>
<td>• Tampering with evidence</td>
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<td></td>
<td>• Conspiracy</td>
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<td>o Tampering with evidence</td>
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<td></td>
<td>• Engaging in a treatment violation that violates the Michigan Safe Drinking Water Act</td>
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<td></td>
<td></td>
<td></td>
<td>• Engaging in a monitoring violation that violates the Michigan Safe Drinking Water Act</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Misconduct in office (two counts)</td>
</tr>
<tr>
<td>Stephen Busch</td>
<td>MDEQ</td>
<td>District Supervisor</td>
<td>Overall FWC</td>
<td>April 20, 2016</td>
<td>• Tampering with evidence</td>
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<td></td>
<td></td>
<td>• Conspiracy</td>
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<td></td>
<td>o Tampering with evidence</td>
</tr>
<tr>
<td>Name</td>
<td>Organization</td>
<td>Position</td>
<td>Date</td>
<td>Charges</td>
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<td>-------------------------------------------------------------------------</td>
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</tr>
</tbody>
</table>
| Michael Glasgow    | City of Flint| Laboratory and Water Quality Supervisor       | April 20, 2016      | Engaging in a treatment violation that violates the Michigan Safe Drinking Water Act  
|                    |              |                                               |                      | Engaging in a monitoring violation that violates the Michigan Safe Drinking Water Act  
<p>|                    |              |                                               |                      | Misconduct in office (one count)                                         |
|                    |              |                                               | June 14, 2017       | Felony involuntary manslaughter                                         |
| Liane Shekter Smith| MDEQ         | Chief of Office of Drinking Water and Municipal Assistance | July 29, 2016      | Tampering with evidence                                                 |
|                    |              |                                               |                      | Willful neglect of duty                                                 |
|                    |              |                                               |                      | Misconduct in office                                                    |
|                    |              |                                               |                      | Willful neglect of duty                                                 |
|                    |              |                                               | Legionnaires' Disease Outbreak | Felony involuntary manslaughter                                         |
| Adam Rosenthal     | MDEQ         | Water Quality Analyst                         | July 29, 2016       | Misconduct in office                                                    |
|                    |              |                                               |                      | Tampering with evidence                                                 |
|                    |              |                                               |                      | Conspiracy                                                              |
|                    |              |                                               |                      | o Tampering with evidence                                               |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Agency/Title</th>
<th>Case Details</th>
<th>Date</th>
<th>Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patrick Cook</td>
<td>MDEQ Specialist for the Community Water Drinking Unit</td>
<td>Overall FWC</td>
<td>July 29, 2016</td>
<td>Willful neglect of duty, Misconduct in office, Conspiracy</td>
</tr>
<tr>
<td>Nancy Peeler</td>
<td>MDHHS Director, Michigan Maternal, Infant and Early Childhood Home Visiting</td>
<td>Overall FWC</td>
<td>July 29, 2016</td>
<td>Willful neglect of duty, Misconduct in office, Conspiracy</td>
</tr>
<tr>
<td>Robert Scott</td>
<td>MDHHS Data Manager, Michigan Healthy Homes and Lead Poisoning Prevention</td>
<td>Overall FWC</td>
<td>July 29, 2016</td>
<td>Willful neglect of duty, Misconduct in office, Conspiracy</td>
</tr>
<tr>
<td>Corrine Miller</td>
<td>MDHHS State Epidemiologist</td>
<td>Overall FWC</td>
<td>July 29, 2016</td>
<td>Misconduct in office, Conspiracy, Willful neglect of duty</td>
</tr>
<tr>
<td>Darnell Earley</td>
<td>City of Flint Emergency Manager</td>
<td>Overall FWC</td>
<td>Dec. 20, 2016</td>
<td>False pretenses, Conspiracy to commit false pretenses, Misconduct in office</td>
</tr>
<tr>
<td>Name</td>
<td>Affiliation</td>
<td>Title</td>
<td>Overall FWC</td>
<td>Charges</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>--------------------------------------------------------------</td>
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<tr>
<td>Gerald Ambrose</td>
<td>City of Flint</td>
<td>Emergency Manager</td>
<td>Overall FWC</td>
<td>False pretenses, Conspiracy to commit false pretenses, Misconduct in office, Willful neglect of duty</td>
</tr>
<tr>
<td>Howard Croft</td>
<td>City of Flint</td>
<td>Director of Public Works</td>
<td>Overall FWC</td>
<td>False pretenses, Conspiracy to commit false pretenses</td>
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<td>Daughterty Johnson</td>
<td>City of Flint</td>
<td></td>
<td>Overall FWC</td>
<td>False pretenses, Conspiracy to commit false pretenses</td>
</tr>
<tr>
<td>Nick Lyon</td>
<td>MDHHS</td>
<td>Director</td>
<td>Legonnaires’ Disease Outbreak</td>
<td>False pretenses, Conspiracy to commit false pretenses</td>
</tr>
<tr>
<td>Eden Wells, MD</td>
<td>MDHHS</td>
<td>Chief Medical Executive</td>
<td>Legonnaires’ Disease Outbreak</td>
<td>False pretenses, Conspiracy to commit false pretenses</td>
</tr>
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</table>

Legonnaires’ Disease Outbreak: June 14, 2017

- Willful neglect of duty
- Felony involuntary manslaughter
- False pretenses
- Conspiracy to commit false pretenses
- Misconduct in office
- Willful neglect of duty
- Obstruction of justice

Overall FWC: Dec. 20, 2016

- False pretenses
- Conspiracy to commit false pretenses
- False pretenses
- Conspiracy to commit false pretenses
- False pretenses
- Conspiracy to commit false pretenses
- False pretenses
- Conspiracy to commit false pretenses
- False pretenses
- Conspiracy to commit false pretenses
| Legionnaires’ Disease Outbreak | Oct. 9, 2017 | • Lying to a police officer
| • Felony involuntary manslaughter |
VITA

Nadya Vera was born in Puerto Rico in 1981. She grew up in South Florida, where she earned a bachelor’s degree in theatre in 2003. She earned a master’s degree in mass communications with an emphasis in public relations at the University of Florida in 2007. Prior her 2017 return to academia, she worked as a marketing coordinator at a medical conference management company Miami, Florida, a media relations specialist at the Humane Society of the United States in Washington, D.C., and as an environmental public health educator for the Washington County Department of Health & Human Services in Hillsboro, Oregon.