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Potable to poisonous: An analysis of the Flint, Michigan water crisis

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Potable to Poisonous: An Analysis of the Flint, Michigan Water Crisis

An Honors College Project Presented to
the Faculty of the Undergraduate
College of Arts and Letters
James Madison University

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Accepted by the faculty of the Department of Media Arts and Design, James Madison University, in partial fulfillment of the requirements for the Honors College.

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Potable to Poisonous:
An Analysis of the Flint, Michigan Water Crisis



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Abstract

Flint, Michigan, switched its drinking water source from Lake Huron to the Flint River in April 2014 to cut costs after a projected deficit. When an accumulation of lead and bacteria contamination was discovered over a year after the switch, Michigan was declared to be in a Federal State of Emergency. This case study investigates the events and actions leading to both the water contamination and public exposure of the crisis, as well as explores how the constituents responded and continue to be impacted by the events.

OVERVIEW

Flint, Michigan, 70 miles north of Detroit, is a city where almost half of its residents live below the poverty line (CNN, 2016). Due to its declining economy and a projected deficit, the City of Flint switched its drinking water source from Lake Huron to the Flint River to cut costs. In January 2016, the city was declared to be in a Federal State of Emergency because of the accumulation of lead and bacteria contaminating the water for a year and a half, with no possibility of recovering on its own (NY Times, 2016).

The events and actions leading to both the water contamination and public exposure of the crisis are complex and intertwining. The officials responsible for communicating the crisis and mitigating its effects created a public relations nightmare for the city, producing extensive criticism and sparking national media attention. Both traditional and social media coverage of the event exposed the cause of the contamination, how the constituents responded, and the city's plan for restructuring after the crisis. After examining the history of Flint and the economic crisis that caused the decision to switch water sources, as well as investigating the individuals and organizations at fault for the continuation of the contamination, it is clear that the state's government leaders and officials inappropriately responded to warning signs from their residents and provided an ineffective and incompetent crisis communication plan. See Appendix A for a timeline of events.

ECONOMIC CRISIS TO HEALTH CRISIS

The water contamination crisis in Flint culminated after the buildup of several mostly economic factors within the city. For years, Flint's economic well-being has suffered, in great part due to the reduction in size of the prominent *General Motors* plant. After the declaration of a

Financial State of Emergency in Flint, city officials turned to cost-cutting measures that would ultimately spark a public health crisis from contaminated water (Adams, 2014).

Flint statistics

Flint, Michigan, is located in Genesee County and lies along the Flint River (See Appendix B). With a population of about 98,310 individuals, 41.2% of Flint's residents live below the poverty line, and the median household income is \$24,862 (US Census, 2016). Flint ranks much lower than national levels; the national poverty rate was 13.5% in 2015, and the national median household income was \$56, 516 in 2015 (Proctor, Semega, & Kollar, 2016). Of its population, 56.6% of residents are Black or African American, 37.4% are Caucasian, 3.9% are Hispanic or Latino, 0.5% are American Indian and Alaska Native, and 0.5% are Asian. The percentage of residents who are high school graduates or higher is 82.6%, and the percentage of residents with Bachelor's degree or higher is 11.3% (US Census, 2016). Flint's primary industries include educational services (*Flint Community Schools*, such as middle, elementary, and high schools), healthcare (*Genesys Health System* and *McLaren Medical Center*), social assistance (*Michigan Department of Health and Human Services* of Genesee County), and the auto industry (*General Motors*) (CityTownInfo, 2016).

Prosperity to depression

Flint originated in 1819 as a hub of fur-trading, lumbering, and agricultural production. Its flourishing manufacturing industry developed into the company known today as *General Motors* by American industrialist William C. Durant in 1908 (Michigan history, 2014). The *General Motors (GM)* plant in Flint was the largest in America, driving the vast majority of the

city's economy (CNN, 2016). In the 1950s, the *GM* plant in Flint was the company's largest existing manufacturing complex, and Flint was second only to Detroit in the manufacture of automobiles, auto parts, and supplies in the United States (Michigan history, 2014). By the 1970s, *GM* had over 80,000 employees in Flint (Colias, 2016). Between 1940 and 1960, *GM* had built eight new industrial complexes, which were all located in the suburbs of Flint. The company was looking to the suburbs and rural areas for new investment opportunities, and the move was ultimately detrimental to Flint's tax base (Hakala, 2016). The relocation of the plants initiated the decline of Flint's economy because it drove much of the economic activity outside of the city. Additionally, *GM* had a plan in the late 1900s to eliminate thousands of jobs in its North American operations in order to make the carmaker more efficient and profitable (Roberts, 1999) In the 1980s and early 1990s, *GM* started closing and relocating its plants in Flint, boosting the city's unemployment rate and decreasing its population (Hakala, 2016). Now, in 2017, the *GM* plant in Flint only employs about 7,200 individuals. Since the plant relocation in the 1940s, Flint's economy has undergone a continual decline, and its deficit encouraged cost-cutting measures in other areas, such as that of the water supply. *GM* is still the largest employer in Flint today and one of the city's biggest taxpayers (Colias, 2016).

Within a span of 20 years, the economy of Flint has dwindled, from the decline of jobs to the decreased income of residents. The unemployment rate in Flint is 4.6%, which has not improved since June 2000 (Gillespie, 2016). This number is comparable to the national unemployment rate in December 2016, which is 4.7% (Bureau of Labor Statistics, 2017). Flint has also lost 15% of its working population within the last fifteen years because residents are moving outside of the city. Flint workers are receiving paychecks that are even lower than what they received at the start of the recession in 2008. The median sale price for a home in Flint has

gone down 50% from what it was in 2005, and only 12,400 manufacturing jobs exist in 2016 compared to the 46,000 in 1996 because the auto industry downsized in Flint (Gillespie, 2016).

Crime on the rise

The City of Flint is known nationally for its high crime rates. In 2012, *Federal Bureau of Investigation (FBI)* statistics concluded that Flint ranked as the most violent city of 100,000 people or more for the third consecutive year (as its population in previous years had exceeded this number) (Harris, 2013). Flint experiences a total of 5,784 crimes annually, which range from murder and rape to robbery and assault, and it is considered safer than only 4% of the cities in the United States (Neighborhood Scout, 2016a). Flint is currently ranked the seventh most dangerous city in the United States (the top six are East St. Louis, IL; Camden, NJ; Detroit, MI; Alexandria, LA; Wilmington, DE; and Memphis, TN) (Neighborhood Scout, 2016b). The number of annual violent crimes per 1,000 residents is 17.33, compared to the national median of 3.8 (See Appendix C). The chances of becoming a victim are one in 58 (Neighborhood Scout, 2016a). An average of five people leave the city every day because of the high crime rates and poor economy; Flint lost about 20% of its population during the first decade of the 21st century. The danger has taken a severe toll on Flint, leaving it with extreme financial struggles (Dimon, 2013).

Audit reveals financial emergency

Flint's worsening economic depression within the past few years inspired government leaders to attempt cost-cutting techniques. An audit in Flint in November 2011 projected a \$25 million deficit, causing the State of Michigan to take over control of the city's finances. The

audit stated that a local government financial emergency existed within the City of Flint with no satisfactory plan to resolve the emergency, and recommended the appointment of an emergency manager (Report of Flint, 2011). The city's water supply fund was over \$9 million in deficit, and to reduce that amount, Flint planned to switch the source of its drinking water (Adams, 2014).

Systematic racism

In addition to the crime and economic prosperity, another factor has come into play in the development of the water crisis. In a 2017 *Michigan Civil Rights Commission (MCRC)* report, “systematic racism” was considered one of the primary factors laying the groundwork for the water crisis. Several “historical policies, practices, laws and norms fostered and perpetuated separation of race, wealth and opportunity” (MCRC, 2017, para. 4). These government policies and social expectations had kept people of color in the same few Flint neighborhoods, while White residents fled to the suburbs. Thus, “the disparate response is the result of systematic racism that was built into the foundation and growth of Flint, its industry and the suburban area surrounding it” (MCRC, 2017, para. 5). The state of Michigan did not have an environmental justice plan ensuring that all individuals receive equal protection of environmental and public health laws, and the emergency manager plan focused more on cost-cutting measures, rather than the well-being of the community. The report states, “Would the Flint water crisis have been allowed to happen in Birmingham, Ann Arbor or East Grand Rapids? We believe the answer is no, and that the vestiges of segregation and discrimination found in Flint made it a unique target” (MCRC, 2017, para. 11). The long history of segregation and discrimination in Flint left the remaining individuals in the city with no way of having their voices heard, causing the

community to suffer from water contamination without media attention or government action for almost two years (MCRC, 2017).

DRASTIC TIMES CALL FOR DRASTIC MEASURES

Flint decided to respond to the projected \$25 million deficit by switching its source of water from Lake Huron to a more cost-effective water supplier. The crisis then ensued when the city announced the presence of fecal coliform bacteria in the water and issued several boil-water advisories. Residents experienced debilitating health effects, and further studies revealed the presence of a dangerous amount of lead contamination in the water. Michigan government officials continuously denied the real dangers of the contaminated water, and emergency managers refused to revert to the original source of water, Lake Huron.

The rocky road to the Flint River

Flint originally accessed its water from Lake Huron under the *Detroit Water and Sewerage Department (DWSD)* (CDC, 2016). After being faced with the projected deficit from a 2011 audit, the city planned to reduce costs by switching its water supplier from *DWSD* to the *Karegnondi Water Authority (KWA)*, which involved the construction of a new pipeline from Lake Huron to Flint. However, the construction process was anticipated to last two years, so during that time, Flint would access its water from the Flint River, whose water had been considered polluted for years. The *DWSD* officially terminated its water service contract with Flint in April of 2014, which initiated the access of water from the Flint River (CNN, 2016).

The decision to access its drinking water from the polluted Flint River was not a decision made by the Flint government, however. In a 2016 State of the State Address, an annual speech

given by the governor of Michigan, Governor Rick Snyder pinpointed the origin of the water crisis to a Flint City Council vote in March 2013, where he stated that the switch to the Flint River was decided (Center for Michigan, 2016). In reality, the city voted to switch to the *KWA*, but it did not specify that the water would come from the Flint River. The power to make such a decision lay in the hands of Flint's emergency manager, who had been appointed by Michigan's Governor Snyder. Several individuals filled the position of emergency manager during the water crisis, but the final decision to use the Flint River as the city's water source was made by emergency manager Ed Kurtz in June 2013 (MLive, 2016). The State of Michigan sent a "letter of termination" to Flint, ending its contract with the *DWSD*. Rather than taking the option to sign a new contract with *DWSD* to access Detroit's water during the new pipeline construction, Kurtz opted to take the more inexpensive route and access water from the Flint River, which had been polluted for years (Center for Michigan, 2016). The city started receiving river water on April 25, 2014 (Kennedy, 2016). Many factors contributed to the continuation of the contaminated water being used for Flint's drinking water, but, ultimately, the decision to switch to the polluted Flint River was that of the state, not the City of Flint.

Dregs of the Flint River

Prior to any government involvement in Flint's switching of water sources, the Flint River had experienced a long history of pollution. As a water source becomes more polluted, it requires more processing to make it safe to drink. The Flint River water contained high levels of bacteria, and combined with additional chlorine, it produced carcinogenic byproducts that increased the water's acidity, which then corroded the pipes leading it to Flint. Federal law requires that anti-corrosive agents be implemented in drinking water to prevent contamination

from the pipes, but this process was ignored in Flint because of orders from the *Michigan Department of Environmental Quality (MDEQ)*. The acidic water corroded the lead pipes, causing that lead to seep into the drinking water and cause serious health problems. Lead poisoning, the primary health problem for Flint during this crisis, can cause incurable developmental problems for children with long-term exposure to the metal (Carmody, 2016). It can also lead to impaired cognition; delayed puberty; heart, kidney and nerve-related diseases; and reduced fetal growth among pregnant women (CNN, 2016). The bacteria-infested water was also the likely cause of a Flint-specific outbreak of Legionnaires' disease, a respiratory disease that can cause serious pneumonia, lung failure, or death if not treated with antibiotics (CDC, 2016). Since the 1830s, industrial waste had been dumped into the Flint River; the pollution continued as natural biological waste and treated industrial and human waste was deposited into the water. A large-scale cleanup process began in 2001 due to government regulations and the relocation of the *GM* plant, but most individuals still considered the water unsafe for drinking (Carmody, 2016). After the decision to switch water sources was made, Flint Utilities Director, Daugherty Johnson, reassured concerned residents that "The Flint River is a different river than it was the last time we used it – that was pre-Clean Water Act" (Adams, 2014, para. 17). The Clean Water Act is a program implemented by the *Environmental Protection Agency (EPA)*, which sets quality standards for all contaminants in surface waters (EPA, 2016c).

Boiling is not enough

During the Spring and Summer of 2014, soon after the switch to the Flint River, Flint residents began to notice differences in the taste and color of the tap water (MLive, 2016). On August 14, 2014, Flint government officials announced the detection of fecal coliform bacteria in

the water from the Flint River, which meant that *E. coli* and other disease-causing organisms could be contaminating the water (CNN, 2016). City officials denied any serious threat. They instead added more chlorine to the water and demanded two boil-water advisories to reduce signs of bacteria, recommending that all water be brought to a boil for one minute before it was consumed (MLive, 2016). In October 2014, the *MDEQ* announced a report linking the possible causes of the contamination to leaking valves and aging cast iron pipes, not mentioning a lack of anti-corrosive agent implementation. By January 2015, city officials realized the level of disinfecting chemicals in the water exceeded what is considered acceptable under the *Safe Water Drinking Act*, and announced that the byproducts from the water could cause an increased risk of cancer over time. Still, the water was declared safe to drink for the general population (CNN, 2016).

THE DIRTY HISTORY OF CONTAMINATION

Despite the severe and surprising nature of the water contamination crisis in Flint, the problem is not unique. Throughout the years, numerous cities have been exposed to unsafe levels of chemicals and toxins in the drinking water. The cases in U.S. Marine Corps Base Camp Lejeune, North Carolina; Hinkely, California; and Hoosick Falls, New York, stand out among others. Their water contamination crises mirror that of Flint and still face questions today regarding the safety of the water.

U.S. Marine Corps Base Camp Lejeune

Located in Jacksonville, North Carolina, Camp Lejeune is a United States military training facility that experienced over thirty years of water contamination, with as many as

500,000 individuals exposed to the chemicals contaminating the water (All About Water Filters, 2015). Between 1952 and 1987, chemicals such as trichloroethylene (TCE), perchloroethylene (PCE), and benzene had contaminated drinking water from chemical degreasers and other toxic substances being disposed of on the base (Lejeune Contamination, 2010). The *EPA* had labeled Camp Lejeune as a major polluter in the 1970s, and the military added regulations for the proper disposal of hazardous waste in 1980, yet testing of the drinking water did not begin until 1982 (Lejeune Contamination, 2010). The health effects of this contamination included various cancers (liver, kidney, breast, bladder, ovarian, cervical, and lung), reproductive disorders, and birth defects (All About Water Filters, 2015). Military personnel and their families, as well as individuals living and working near the camp, suffered from these diseases because of inappropriate hazardous waste disposal (Lejeune Contamination, 2010). In August 2012, President Obama signed into law the Janey Ensminger Act, which ensured that all individuals who suffered from the water contamination are eligible for medical treatment (Gordon & Doner, 2016). The act benefited approximately 750,000 people who had lived at Camp Lejeune and contracted a disease related to the water contamination (Gordon & Doner, 2016).

Hinkley, California

From 1952 to 1966, *Pacific Gas and Electric Company (PG&E)*, located two miles southeast of Hinkley, California, had dumped millions of gallons of chromium-tainted wastewater into unlined ponds surrounding the site. The company had used the chemical hexavalent chromium to prevent corrosion in cooling tower water, and the wastewater had been discharged to nearby ponds. The wastewater then absorbed into the groundwater, which caused the contamination of the water in nearby Hinkley (CEPA, 2016). Hinkley residents learned about

the cancer-causing chromium contamination in the 1990s, years after the dumping had started (Esquivel, 2015). The chromium compound is carcinogenic in drinking water, and more than 600 residents of Hinkley contracted mouth and small intestine cancers, in addition to liver and pancreatic lymph node diseases (Cone, 2009). Amateur investigator Erin Brockovich had uncovered the contamination after organizing papers as a file clerk at a law firm in California. In 1996, Brockovich, along with lawyer Ed Masry, fought with a direct action lawsuit and caused *PG&E* to pay \$333 million in damages to the hundreds of infected residents. National interest and involvement in the crisis was augmented due to the creation of a movie titled *Erin Brockovich* from *Universal Studios*, which detailed Brockovich's story in uncovering the contamination and won an Academy Award in 2001 (See Figure 1) (Brockovich, 2012). Twenty years after the settlement with *PG&E*, the city still lacks closure about the safety of its water. Since the contamination became exposed, hundreds of residents have left the city; property values have dropped; and evidence of chromium is still present in Hinkley's water today (Esquivel, 2015).



Figure 1: Julia Roberts won an Academy Award as Erin Brockovich in the 2000 film, *Erin Brockovich* (DLB-Network, 2013).

Hoosick Falls, New York

Hoosick Falls, New York, is about 30 miles northeast of Albany. In 2015, the village confirmed dangerously high levels of perfluorooctanoic acid, or PFOA, in its drinking water (McKinley, 2016b). This toxic chemical has links to increased risk for kidney and testicular cancers, thyroid disease, and other serious ailments (McKinley, 2016a). Members of the Hoosick Falls community had contacted the *EPA* directly because of concerns about the safety of the drinking water and frustration with the lack of state government action. The *EPA* declared the water unsafe for drinking or cooking on November 25, 2015 (EPA, 2016b). State officials had identified the source of the contamination to be the *Saint-Gobain Performance Plastics* plant, located on the edge of the Hoosic River and near the wells that provide the village's drinking water. Local physician Dr. Marcus Martinez and concerned resident Michael Hickey had expressed concerns about this water contamination in 2014, but they did not see government action until one year later (McKinley, 2016a). On March 30, 2016, the *New York State Department of Health* declared the water system to be cleared of PFOA contamination and safe for all uses (EPA, 2016b). However, the results of Hazard Ranking System (HRS) samplings from the *EPA* in Spring 2016 at *the Saint-Gobain Performance Plastics* ordered on September 9, 2016 that the facility be placed on the *EPA's* National Priorities list for Superfund sites, which means it is a serious site that requires a long-term contamination cleanup process (EPA, 2016b). Although *Saint-Gobain* responded quickly upon learning about the presence of PFOA in the drinking water and funded the installation of a temporary water filtration system for Hoosick Falls residents, five class-action lawsuits were filed against the company (Roiter, 2016).

The water contamination cases from Camp Lejeune, Hinkley, and Hoosick Falls are all the result of big corporations irresponsibly disposing of waste water, causing chemicals from this

waste water to be deposited into each respective community's water source. As a result, individuals in the surrounding locations suffered from various cancers and other life-long diseases. The case in Flint, Michigan, parallels these previous cases because of the severe, long-term health effects on citizens, as well as the furious action taken from the community to reverse the crisis and provide potable drinking water. However, Flint's case is directly the result of the inaction of neglectful government officials, rather than of the actions of irresponsible corporations. If several governmental regulations had been appropriately followed, the Flint crisis could have been much less severe than the previous contamination cases. Since the crisis in Flint is different from many previous situations, it is an important event to study and to analyze how the entities failed at creating an effective crisis communication response plan. The state's government officials were primarily responsible for communicating to its constituents early and often about the situation, and public relations professionals should take note of these actions that were not fulfilled and understand what steps need to be taken to instill trust in the community.

BACK TO FLINT: COULD THE CRISIS HAVE BEEN PREVENTED?

The drinking water in Flint was originally contaminated because the Flint River itself had experienced pollution for years, yet several governmental policies and regulations were ignored, which could have prevented the polluted river water from affecting the drinking water. First, Michigan's government did not properly respond to the contamination, or even acknowledge that it was a concern, until a year and a half after the water switch, despite the water's contamination level violating the *Safe Water Drinking Act* (CNN, 2016). Second, a Michigan task force investigation discovered that the employees of the *MDEQ* purposefully neglected to include anti-corrosion inhibitors (Lawler, 2015). Third, several state and local government employees

tampered with evidence that showed lead contamination in the water (Fonger, 2016). Lastly, the federal government, in particular the *EPA*, also responded inappropriately to the crisis, despite its knowledge of the lack of corrosion control (Felton, 2016).

Michigan officials ignore cries for help

The *DWSD* expressed growing concerns for the safety of Flint's drinking water, and it offered to provide water from Lake Huron and waive a \$4 million fee in January 2015; Flint city officials declined due to high estimated costs. Flint residents continued to experience severe health effects, such as hair loss and rashes, and they presented bottles of discolored water from their taps at community forums. The *EPA* completed a lead level test of the water in the home of Flint resident LeeAnne Walters in March 2015 at her request; it was found to be 397 parts per billion (ppb), greatly exceeding the *EPA* limit of 15 ppb (See Figure 2). Despite a majority Flint City Council vote to reconnect with the Detroit water supplier, the emergency manager appointed in January 2015, Jerry Ambrose, overruled the vote because of its high cost. The city continued accessing its water from the polluted Flint River (CNN, 2016).



Figure 2: Flint resident LeeAnne Walters shows bottles of water from her tap (Lurie, 2016)

The real contamination of Flint's water was again proved due to a study conducted by *Virginia Tech* scientists in June 2015, when the lead level of water in Walters' home was found to be 13,200 ppb. The *EPA* classifies water with a lead level of 5,000 ppb or higher as hazardous waste (CNN, 2016). However, *MDEQ* spokesman Brad Wurfel ignored the study results and reassured residents in July 2015 that "anyone who is concerned about lead in the drinking water in Flint can relax" (Smith, 2015, para. 5). Further *Virginia Tech* studies in September 2015 concluded that 40% of Flint homes had elevated lead levels, with scientists recommending that the state declare its water unsafe for drinking (CNN, 2016).

In addition to research that pointed to lead contamination in the water, Flint pediatrician and director of Hurley Medical Center's Pediatric Residency Program, Dr. Mona Hanna-Attisha, conducted research in 2015, which revealed that the percentage of children in Flint with lead poisoning had doubled (Gupta, Tinker, & Hume, 2016). Dr. Hanna-Attisha had heard concerns from Flint residents about the water having an unusual taste and smell, and many individuals were developing rashes and eye irritations. She decided to test the lead levels of children ages one and two from before and after the switch of water supplies in Flint. Her results determined that the lead exposure doubled, and, in some cases, tripled, among children who were tested (Gupta, *et al.*, 2016). Dr. Hanna-Attisha publicly reported the results of her findings on September 24, 2015 in a press conference at Hurley Medical Center, reporting that blood lead levels had increased since the switch to the Flint River as the water source in April 2014 (Flint Water Advisory, 2016). After presenting her findings, the state dismissed her research. *MDEQ* Communications Director Brad Wurfel suppressed any panic about the situation by informing the public that there had been many tests indicating that the water quality was at an acceptable

level. Despite Dr. Hanna-Attisha rechecking her research, the state's dismissal on national news caused her to receive strong criticism from the public (Erb, 2015).

Finally, government officials accepted the overwhelming proof that Flint's water was drastically contaminated, and it switched its source of drinking water back to Lake Huron under the *DWSD* on October 16, 2015, with a \$9.35 million bill from Governor Snyder (CNN, 2016). Flint declared a State of Emergency on December 14, 2015, sparking national attention to the crisis (City of Flint, 2015).

***MDEQ* disregards corrosion control**

Flint's water treatment plant had not used corrosion inhibitors, which would have prevented lead from leaching into the drinking water from the pipes. (Felton, 2016). Once Governor Snyder addressed the threat of the contaminated water and mandated that the city access its water from Detroit again in October 2015, he also issued a task force investigation to find out the culprit of the contamination (Lawler, 2015). The *MDEQ* was found directly responsible for the crisis, with its Director, Dan Wyant, being held primarily accountable. On October 19, 2015, Wyant said *MDEQ* officials had not abided by federal regulations to make the Flint River less corrosive due to confusion about the regulations (Fonger, 2015). Wyant warned other *MDEQ* officials of high levels of bacteria in the Flint River in February 2013 and advised the city to continue accessing Detroit's water. The report was ignored, and the switch to the Flint River continued. Flint's operating plan proposed the implementation of corrosion control, but officials of *MDEQ* deemed it unnecessary and continued with the water treatment process (MLive, 2016). The *MDEQ* claimed that it was following federal protocol by not requiring corrosion control, but Wyant admitted in October 2015 that this protocol in fact only applied to

water systems much smaller than Flint's, and that the city should have been using corrosion inhibitors to treat the water (Fonger, 2015). The task force wrote a letter to Governor Snyder with the results of the investigation, stating:

“Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, *MDEQ* is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure” (Lawler, 2015, para. 7).

Governor Snyder accepted a letter of resignation from Wyant on December 29, 2015 (Lawler, 2015).

Tampering with evidence

In addition to failing to use corrosion control, two *MDEQ* officials, district supervisor Steve Busch and district engineer Mike Prysby, had told Flint's Utilities Director Mike Glasgow to file false information about the lead levels in Flint's water (Fonger, 2016). They had demanded that he tamper with a 2015 “Lead and Copper Report and Consumer Notice of Lead Result,” removing the highest lead results in the report (Ellis & Sgueglia, 2016). This action caused Flint water's lead levels to avoid exceeding the federal drinking water threshold. Upon being charged with tampering with evidence, Glasgow was offered a plea deal when he reported the actions of these officials. Before the crisis began, he had said that Flint was not capable of treating and safely distributing Flint River water due to a lack of experienced workers and not enough time to prepare. His advice was ignored, and the contaminated water was distributed for 17 months (Fonger, 2016).

Silence of *EPA* causes criticism

In addition to state and local government officials being at fault, the *EPA* failed to take action to fix the crisis, despite its knowledge of the contamination and of the lack of corrosion treatment (Felton, 2016). The *EPA* had known about the high lead levels in Flint homes as early as February 2015. It also knew as early as April 2015 that Flint was not applying appropriate corrosion control treatment to its water (Spangler, Dolan, & Matheny, 2016). *EPA* Region 5 Administrator, Susan Hedman, reported that the agency “urgently told *MDEQ* that it was important to implement corrosion control,” but it did not take action itself despite knowledge of the contamination (Spangler *et al.*, 2016, para. 18). The government agency was heavily criticized by *Virginia Tech* lead contamination experts, members of Congress, and members of Snyder’s investigative task force, among others, for neglecting to respond more quickly to the situation (Spangler *et al.*, 2016).

The man ultimately to blame for the switch to the polluted Flint River was Michigan-appointed emergency manager Ed Kurtz, yet the choice to not apply anti-corrosion inhibitors was the fault of *MDEQ* officials, with Flint’s water treatment plant director blindly following the advice of these officials. Among these actions, the *EPA* failed to take action despite knowledge of the contamination. Many government officials and agencies were ultimately at fault for the creation and continuation of the water crisis. Meanwhile, Flint residents continued to experience debilitating health effects, and they will continue to suffer from the lead contamination for years to come (Dolan, 2016).

IMPLICATIONS FOR CONSTITUENTS

The Flint water crisis proved to be a much larger issue than those in charge of the decision to switch water sources had anticipated: (1) The residents suffered from lead poisoning and other debilitating health effects, causing them to lose trust in the government and fear for their safety; (2) The employees of both the city and state governments, as well as members of Flint's water treatment system and Michigan's *Department of Environmental Quality (MDEQ)*, have faced legal repercussions for their actions; (3) The crisis drove involvement by President Barack Obama and several government agencies to restore financial stability; and (4) News coverage sparked national attention, increasing the criticism of those at fault. The primary constituents of the crisis, which are Flint residents, state and city employees, the Federal government, and the media, face trouble recovering from the water contamination and assisting the city in its recovery (See Appendix D).

Flint residents forced to swallow losses

In March 2016, almost two years after the switch to the Flint River, Flint resident, Gina Luster, said her family went through 151 bottles of water each day to avoid using the tap water. Forty-one-year-old Luster made the switch to bottled water in October 2015 after her seven-year-old daughter and thirteen-year-old niece had been suffering from hair loss and skin rashes, and she herself had experienced extreme weight loss. Luster was a store manager in Flint until August 2014, when she was forced to go on medical leave because of her health problems. She lost sixty pounds from the stress of the water contamination and her family's health issues (See Figure 3). The family experienced not only physical problems from the contaminated water, but emotional and mental suffering as well (Zdanowicz, 2016).



Figure 3: Gina Luster’s family used 151 water bottles daily to avoid using contaminated tap water (Zdanowicz, 2016)

Many Flint families suffered from the traumatic effects of the water crisis. Almost immediately after the switch of water sources in April 2014, residents noticed the strange smell and discoloration of the water, and many turned off their taps and resorted to using bottled water (Felton, 2016). After the contamination outbreak became officially recognized by authorities, all children aged six and below were required to undergo blood lead level tests. All residents, especially pregnant and breastfeeding women and children under the age of six, were encouraged to drink from bottled water (CDC, 2016). Local fire stations provided the bottled water for free at “water stations” for Flint families to consume after the lead contamination was exposed (Zdanowicz, 2016). Governor Snyder declared a State of Emergency in Genesee County on January 5, 2016, and soon after, announced the sudden outbreak of Legionnaires’ disease that occurred between June 2014 and November 2015 (CNN, 2016). Although not a confirmed effect of the water contamination because the water had not been tested for the legionella bacteria, the outbreak of this illness coincided with the time frame of the switch to the Flint River. The

outbreaks of the disease caused a total of 87 illnesses and 9 deaths in Genesee County (Bernstein & Dennis, 2016).

Health effects of lead exposure in children include impaired cognition, behavioral disorders, hearing problems, and delayed puberty (NIEHS, 2016). Dean of Global Health at Mount Sinai School of Medicine, Dr. Philip Landrigan, explained how constant exposure to even low levels of lead can cause brain damage in exposed children, ranging from lower IQ scores to developmental delays to behavioral issues (Lapook, 2016). In pregnant women, lead is associated with reduced fetal growth. In everyone, lead consumption can affect the heart, kidneys and nerves. Although there are medications that may reduce lead in the blood, treatments for the adverse health effects of lead have yet to be developed (CNN, 2016). Many Flint residents dream about leaving the city and its contaminated water, but property values have plummeted, and it is illegal to sell one's home with a known copper and lead problem (The Stir, 2016). The high level of blood lead contamination in Flint's residents causes concerns for the recovery of the city's infrastructure and economy, as well as its residents' trust.

Legal repercussions

After the outbreak of lead contamination in Flint's water, several individuals and companies were slapped with civil and criminal lawsuits. First, criminal charges were filed against three individuals on April 20, 2016. Mike Glasgow, the Flint water treatment plant supervisor, was charged with evidence tampering and willful neglect of duty as a public officer. Stephen Busch and Michael Prysby, *MDEQ* officials, were charged with misconduct in office, evidence tampering, and violating the *Safe Water Drinking Act*. Glasgow accepted a plea deal, and Busch and Prysby have pleaded not guilty (Ganim & Sanchez, 2016).

In July 2016, more current and former state employees were charged. Former chief of the *Office of Drinking Water and Municipal Assistance* at the *MDEQ*, Liane Shekter-Smith, was charged with one count of misconduct in office and one count of willful neglect of duty. Shekter-Smith had misled the public, concealed evidence, and lied about Flint's water plant certification. Two of her employees, Water Quality Analyst, Adam Rosenthal, and Community Drinking Water Unit Specialist, Patrick Cook, manipulated a lead level report and misled the *EPA* with false information. Both are charged with misconduct in office, a felony, and other misdemeanors. Three more individuals face one count of misconduct in office, one count of conspiracy, and one count of willful neglect of duty: Nancy Peeler, Director of the *Michigan Department of Health and Human Services (MDHHS) Maternal, Infant, and Early Childhood Home Visiting Program*; Corinne Miller, a former *MDHHS* employee; and Robert Scott, data manager for the *Healthy Homes and Lead Prevention Program*. These individuals had concealed data and hidden a report that raised concerns about high levels of lead in Flint children, as well as created a false report that showed no significant rise in the blood lead levels (Ganim & Sanchez, 2016).

Several lawsuits have been filed against state and government organizations. In April 2016, 514 current and former Flint residents filed an administrative complaint against the *EPA* for negligence in handling the crisis, demanding more than \$220 million in damages (CNN, 2016). In May 2016, the *National Association for the Advancement of Colored People* filed a lawsuit against Michigan officials. On October 27, 2016, Flint residents were given the ruling from Michigan judge, Mark Boonstra, that they could sue state officials (JURIST, 2016). Thirty-seven-year-old mother of three, Melissa Mays, and nine other Flint residents filed claims against Governor Snyder, the *MDEQ*, the *MDHHS*, and two former Flint emergency managers, Darnell Earley and Jerry Ambrose (Chambers, 2016). Mays had formed a grassroots organization in

January 2015 called *Water You Fighting For* in order to have Flint reconnect to Detroit’s water system (See Figure 4). She and her family had suffered greatly from rashes, muscle and bone pain, and seizures after the water contamination, causing her to fight for a solution, along with many of her fellow residents (The Stir, 2016).

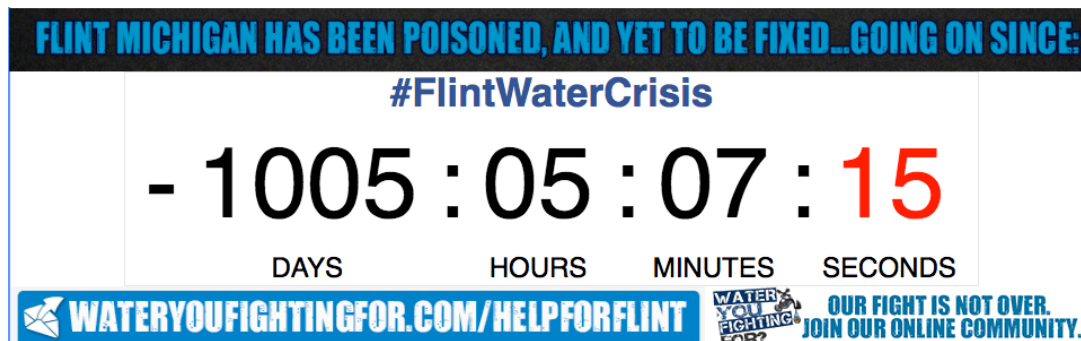


Figure 4: Screenshot from Melissa Mays’ website, *Water You Fighting For*, counting time since Flint has had clean water (Water You Fighting For, 2017).

Federal government response

President Obama, the *Federal Emergency Management Agency (FEMA)*, the *U.S. Department of Health and Human Services (HHS)*, and the *Environmental Protection Agency (EPA)* became directly involved in Flint’s water crisis in order to restore financial and infrastructure stability for the city. President Obama signed an emergency declaration on January 16, 2016, ordering federal assistance and sending \$5 million in aid to Flint (CNN, 2016). This declaration initiated involvement from *FEMA*, *HHS*, and *EPA* to help the state and local leaders successfully mitigate the short- and long-term health effects (The White House, 2016).

Sean O’Hara, Attorney Advisor to *FEMA*’s Logistics Management Directorate, provided information on the details of the Federal government’s response and recovery solutions.¹ *HHS* was identified as being responsible for assisting the state in addressing the public health

¹ The views expressed do not necessarily represent the views of FEMA, DHS, or the United States Government

emergency, and so it established a unified coordination group (UCG) made up of various government agencies to determine each agency's roles and responsibilities. *FEMA* assisted by providing supplemental support for the state and local governments. The agency worked closely with the state emergency manager to understand the state's needs and shortfalls. Once the state articulated its needs, it requested assistance in the form of an emergency declaration, which the President granted on January 16, 2016. The President approved Governor Snyder's request for direct federal assistance, which was limited to water, water filters, water filter cartridges, water test kits, and other necessary related items from *FEMA*. Within two days of the emergency declaration, water bottles were shipped to Flint residents. The supplies were provided to individuals in Flint until August 14, 2016 in order to help the state rebuild its mechanisms to continue assisting its citizens (S. O'Hara, personal communication, November 26, 2016).

While *FEMA* was directly responsible for leading the response in the form of providing potable drinking water, *HHS* focused on addressing the public health crisis. It worked with local health officials to provide information and expertise to residents so that they understood public health issues, as well as how to test for these issues (S. O'Hara, personal communication, November 26, 2016). *HHS* offered blood lead testing to as many children and residents as possible, and the *HHS Centers for Medicare & Medicaid Services* expanded its Medicaid coverage for individuals up to age 21, as well as pregnant women with lead exposure. About 15,000 children, young adults, and pregnant women in Flint received Medicaid coverage. *HHS* also provided \$250,000 to the *Hamilton Community Health Network* and *Genesee Health System* to fund the hiring of new staff and provide additional services. Finally, *HHS* provided a plan for long-term mental health recovery to aid those emotionally and mentally affected by the crisis, and to improve the mental health system in Genesee County (The White House, 2016).

The *EPA* became directly involved in the public health aspect of the crisis as well. It expressed concerns about Michigan's slow response to the crisis in January 2016 and issued an emergency administrative order to ensure that officials comply with the standards of the *Safe Drinking Water Act* (CNN, 2016). *EPA* began coordinating with *HHS* to test the lead levels of water in Flint homes in 2016, and it provided guidelines for safe and unsafe uses of the water for residents (EPA, 2016a). *EPA* staff performed nearly 400 water tests in about 200 Flint homes with lead levels of at least 100 parts per billions (ppb). (The *EPA* "action limit" for lead concentration is 15 ppb.) Results showed that the distributed filters from *FEMA* were effective in removing lead from water that had lead levels of more than 150 ppb. *EPA* also worked with Flint and the State of Michigan to launch a "Flush for Flint" campaign, which encouraged residents to run water from all taps in their houses for five minutes for two weeks in May 2016 to help flush out remaining lead particles in the pipes. The process was paid for by the State of Michigan (The White House, 2016).

On May 4, 2016, President Obama visited Flint to assure residents of the water's safety (CNN, 2016). He drank the filtered water on television and listened to concerns from citizens, yet warned the public that rebuilding Flint's water system would be a time-consuming process (see Figure 5 - Chuck & Bacon, 2016). President Obama and the federal government in May 2016 also stated that pregnant and breast-feeding women and infants should continue using bottled water, and filtered water should be used for drinking and cooking (The White House, 2016).



Figure 5: President Obama drinks filtered water in Flint during visit (Chuck & Bacon, 2016)

Delayed national media response finally sparks outrage

Traditional Media.

Several Michigan news outlets aggressively covered the case of the water crisis from the start, but national media coverage was not present until at least one year after the crisis started. Beginning with Flint's decision to switch its water source from Lake Huron to the Flint River, news outlets such as *Michigan Radio* and *The Flint Journal* documented the story, updating the local area on the development of the water's contamination and the residents' responses to it. Both published news articles when Flint residents sent in complaints about the strange smell and taste of the water, as well as the results of the water tests performed by *Virginia Tech* researchers in September 2015.

Very few newspapers outside of Michigan had covered any part of the story until January 2016, when President Obama declared Flint to be in a state of emergency. *The New York Times* and *The Blade* in Toledo, OH, were the only non-state newspapers to publish multiple stories on the crisis before this point. *Star-Ledger* in Newark, NJ, *The Boston Globe*, and *The Wall Street Journal* had each published one story prior to the declaration of the State of Emergency on

January 5, 2016. Few televised news shows covered the crisis until January 5, 2016. Rachel Maddow of *MSNBC*, however, began covering it extensively starting in December 2015 and devoted more time to the story than all of the other television networks combined (Robbins, 2016).

Maddow first introduced the case of Flint on December 19, 2015 with a special report, where she explained how Michigan's emergency manager system, a system signed as legislation by Governor Snyder, allows one state-appointed individual to be responsible for the entire city, rather than the elected government officials. Maddow described how the first emergency manager in Flint, Ed Kurtz, under the authority of Governor Snyder, chose the inexpensive option of using the Flint River as the water source during the construction of the more cost-effective pipeline. Additionally, later emergency managers and state officials under Snyder's administration did not require the use of anti-corrosion control for the corrosive river water. Maddow also explained how the state ignored tests that showed high lead levels (The Rachel Maddow Show, 2015). Despite Maddow's extensive coverage of this case and explanations of the transgressions of city officials, most national news outlets did not cover the case until January 2016 with the State of Emergency declaration. Many signs pointed to the fact that Flint was going through a health crisis and needed national attention, but it did not receive that attention until residents had been consuming the polluted water for almost two years (Robbins, 2016).

Social Media.

Despite the delayed response, the national media coverage of the events accelerated the country's understanding of and outrage over the crisis, bringing attention to other coverage, such

as social media posts and Flint residents' reactions (Whitten, 2016). Flint residents frequently posted on social media sites such as *Twitter* and *Facebook* to express their concerns with the contaminated water. The crisis even sparked attention from high-profile individuals and celebrities, who used *Twitter* to show their support for the Flint community (see Figure 6 - Whitten, 2016).



Figure 6: Rapper Big Sean shows support using #Flint (Whitten, 2016)

Environmental activist Erin Brockovich spoke out on her social media platforms, informing her half-million followers about the crisis (Lavash, 2016). Brockovich appeared on *The Late Show with Stephen Colbert* in January 2016 to inform viewers of the crisis and discuss her involvement in its recovery (see Figure 7 - *The Late Show*, 2016). In early 2015, members of the Flint community contacted Brockovich directly about their concerns about the strange color and smell of the water. Brockovich and her team sent investigators to the area and ultimately wrote a protocol for how the situation should be properly handled in order to avoid a crisis. This advice was ignored, however, and officials reassured residents that the discolored water was safe to drink (*The Late Show*, 2016).



Figure 7: Erin Brockovich on The Late Show discussing the Flint crisis with Stephen Colbert (The Late Show, 2016)

By publicly speaking about the crisis, Brockovich and other individuals with a strong social media presence drew more attention to the situation and encouraged other individuals to use social media to show support as well (Whitten, 2016). Flint residents continued expressing their outrage and disappointment with the government's slow response through the end of 2016. For example, nine-year-old Flint resident, Mari, posts on her *Twitter* account under the handle, Little Miss Flint, to provide updates on the situation and garner support from her 6,000 followers (see Figure 8 - Little Miss Flint, 2016).



Figure 8: Tweet from Little Miss Flint, 2016: “Flint, MI has been without clean water since April 24, 2014.”

FUTURE OF FLINT

Still on filtered water

In July 2016, the final installment of the new 80-mile pipeline constructed under the *Karegnondi Water Authority (KWA)* was completed, with the intent of allowing Flint to access water from Lake Huron at a lower cost than from the *Great Lakes Water Authority (GLWA)*, Michigan’s regional water authority (Carah, 2016). *KWA*’s chief executive, Jeff Wright, stated that the project was completed “on time and under budget,” totaling \$285 million instead of the projected \$300 million (Carah, 2016, para. 4). Wright anticipates that the water from this pipeline will be accessible to Flint residents by the middle of 2017. The city will not be able to meet testing criteria established by the *EPA* until 2017, which explains the year-long delay. Flint will receive safe drinking water from the *GLWA* through the end of June 2017 until it can connect with the *KWA* system (Carah, 2016). As of November 2016, the pipes leading water into

Flint homes most likely still have remaining lead particles, and filter use is still encouraged (Jacobson, 2016).

No safe water in sight

While the construction of the new pipeline leading from Lake Huron to Flint has officially been completed, the city is still in the process of replacing old lead pipes in Flint homes. Pipes at 346 homes in Flint have been replaced as of mid-November 2016, and an estimated 17,000 more homes still need to be addressed (Jacobson, 2016). The lead *Virginia Tech* researcher in the crisis, Marc Edwards, noted that “many Flint residents, with good reason, will never trust the safety of their potable water again, or the word of any government agency” (Jacobson, 2016, para. 24). Lead levels have drastically decreased since initial testing, and the city has indeed made progress in restoring its water system, yet, it will not be fully and safely restructured for years to come (Jacobson, 2016).

Flint on its own

On August 14, 2016, the federal state of emergency in Flint expired, terminating Federal government financial assistance for the city. The Federal government had covered 75% of the costs of water supplies, and with the end of the emergency declaration, the state now has the responsibility of providing residents with free bottled water, water filters, and water filter cartridges. The estimated costs for Flint to rebuild its infrastructure are about \$3.5 million each month (Kennedy, 2016).

CONCLUSION

The impact of the water crisis in Flint has been widespread and nationally alarming. Not only do the residents of Flint have to recover emotionally and physically from the health effects of the lead-laced water, but it has also revealed possible lead contamination in cities across the United States. According to Jessica Pupovac of *NPR*, approximately six million homes in America access their water through lead pipes (Kennedy, 2016). Many Americans can be unknowingly exposed to lead-contaminated water, just as the citizens of Flint had been for over a year. Flint continues to suffer from the repercussions of the neglectful and irresponsible actions of state and other officials. Its financial stability will drastically decline, its water supply infrastructure won't be completely renovated for years, and its residents will attempt to cope with the debilitating effects of the crisis indefinitely.

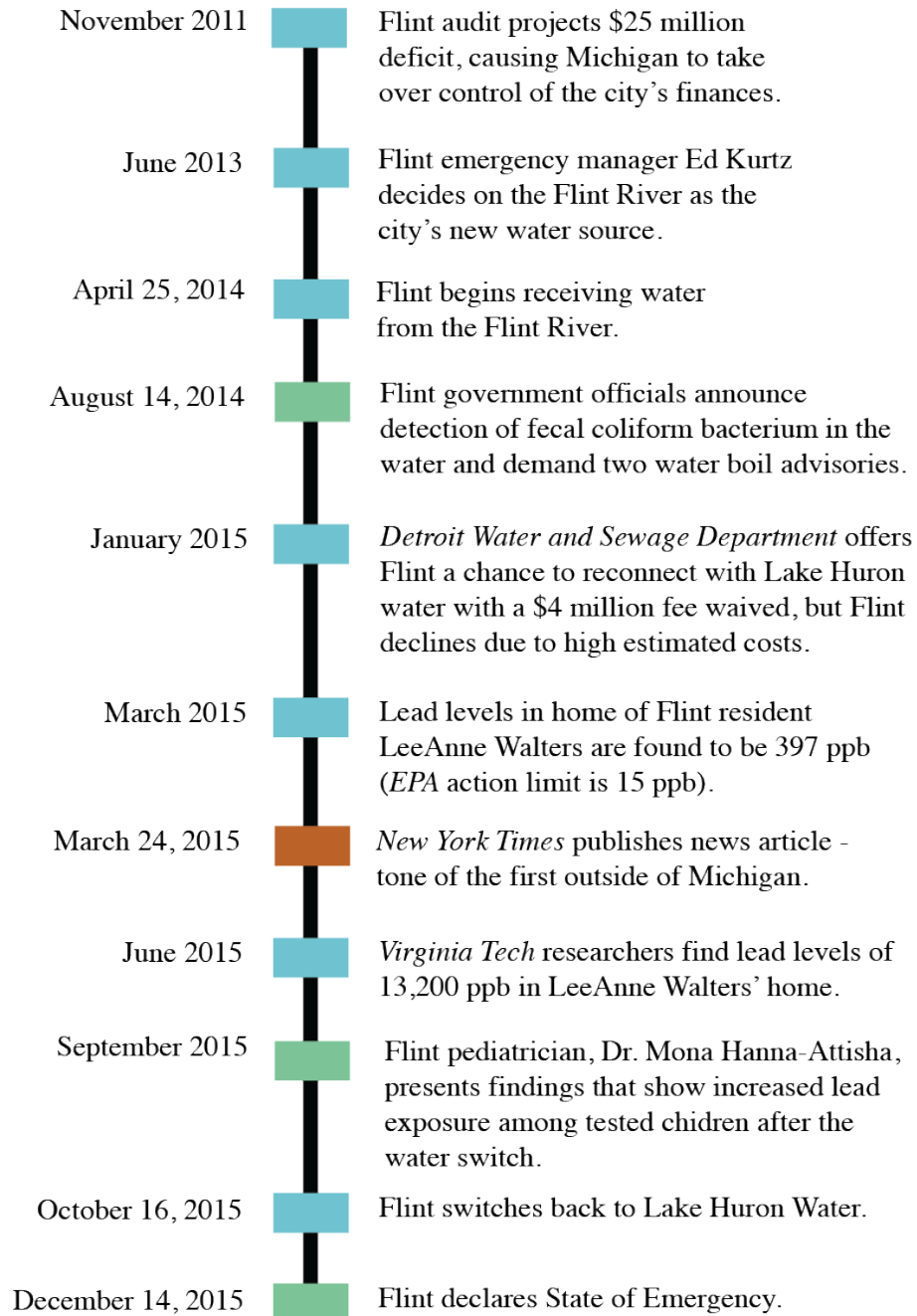
The city and state government officials not only neglected to abide by government regulations necessary for water treatment facilities, but they also tampered with reports and lied to the community about the presence of toxins in the drinking water. Many key components of conducting an adequate corporate communication response plan were not fulfilled. First, the government officials did not acknowledge that a crisis existed until residents had been consuming the contaminated water for many months. One of the first steps to creating complete transparency with constituents is to admit when mistakes are made and attempt to reverse the harmful actions committed. Second, the officials did not listen to all of their constituents. Residents frequently displayed bottles of their discolored water at community meetings, hoping that action would be taken to provide potable drinking water. Additionally, research from Flint pediatrician Dr. Mona Hanna-Attisha regarding raised blood lead levels in children, as well as results from Virginia Tech's researchers regarding lead levels in Flint homes, were ignored











because they contradicted previous results from the state. Finally, action was not taken to provide safe drinking water for the community until many individuals and groups expressed enough concern and proved that there were elevated lead levels in the water. Governor Snyder eventually responded by requesting Federal assistance because the situation was too far out of hand for the state to handle on its own. Public relations professionals should understand that communicating early and often, as well as being transparent, are key steps in reestablishing trust from the constituents, especially when a public health crisis is involved. In the Flint, Michigan, Water Crisis, these steps were ignored.

Appendix A: Timeline of Flint water crisis

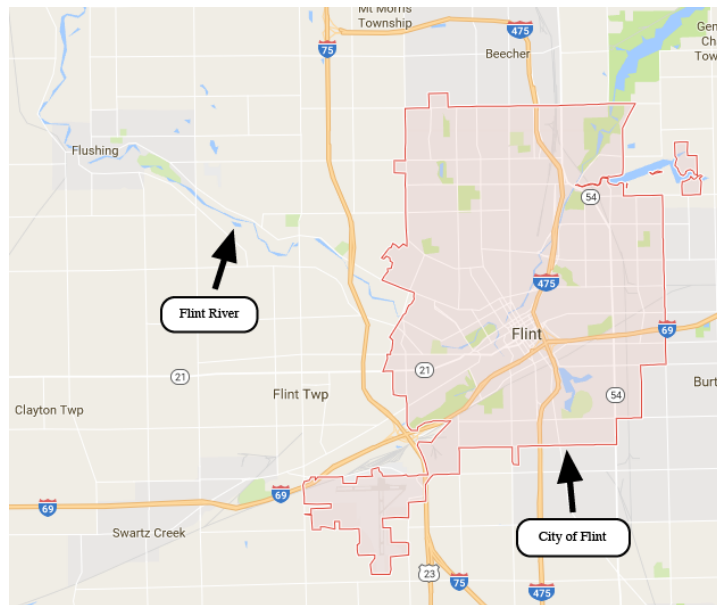
Timeline Key:

- Events involving water crisis
- Events involving communication efforts
- Events involving the media



December 19, 2015		<i>MSNBC's Rachel Maddow</i> releases a special report explaining how Flint's emergency manager system under Governor Snyder has allowed the water crisis to ensue.
December 29, 2015		<i>Michigan Department of Environmental Quality (MDEQ)</i> Director, Dan Wyant, resigns after <i>MDEQ</i> is found primarily responsible for the water crisis.
January 2016		Michigan Governor Rick Snyder announces outbreak of Legionnaires' disease in Genesee County.
January 5, 2016		Governor Snyder declares Genesee County to be in a State of Emergency.
January 16, 2016		President Obama declares Flint to be in a Federal State of Emergency and sends \$5 million to help residents recover.
January 29, 2016		Erin Brockovich joins Steven Colbert on <i>The Late Show</i> to discuss the Flint Crisis.
April 20, 2016		Criminal charges are filed against Mike Glasgow, Flint's water treatment plant advisor, and <i>MDEQ</i> officials Michael Prysby and Stephen Busch.
May 4, 2016		President Obama visits Flint and drinks the filtered water on television.
July 2016		New pipeline under <i>Karegnondi Water Authority</i> , leading from Lake Huron to Flint, is completed. Water from this pipeline will be accessible once the <i>EPA's</i> testing criteria are met (anticipated mid-2017).
August 14, 2016		Federal State of Emergency expires in Flint, leaving the state responsible for providing safe drinking water to residents.

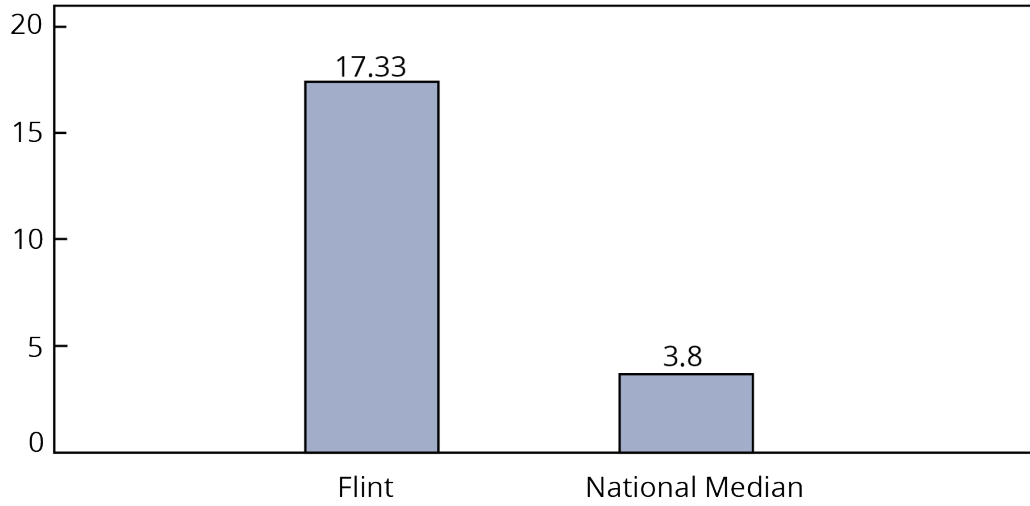
Appendix B: Map of Flint



(Google Maps, 2016)

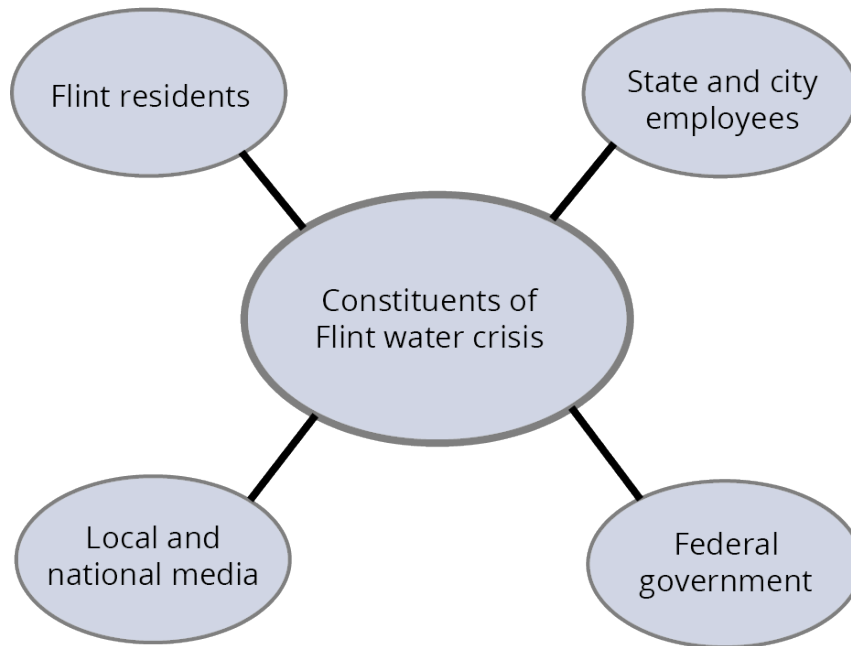
Appendix C: Annual violent crime comparison

Annual Violent Crime Comparison per 1,000 residents



(Data from Neighborhood Scout, 2016)

Appendix D: Constituents involved in the Flint water crisis



Appendix E: Teaching Notes

The following teaching notes are guidelines for an instructor to conduct a lesson plan about corporate communication response plans, using the Flint Water Crisis as an example.

Potable to Poisonous: An Analysis of the Flint, Michigan Water Crisis

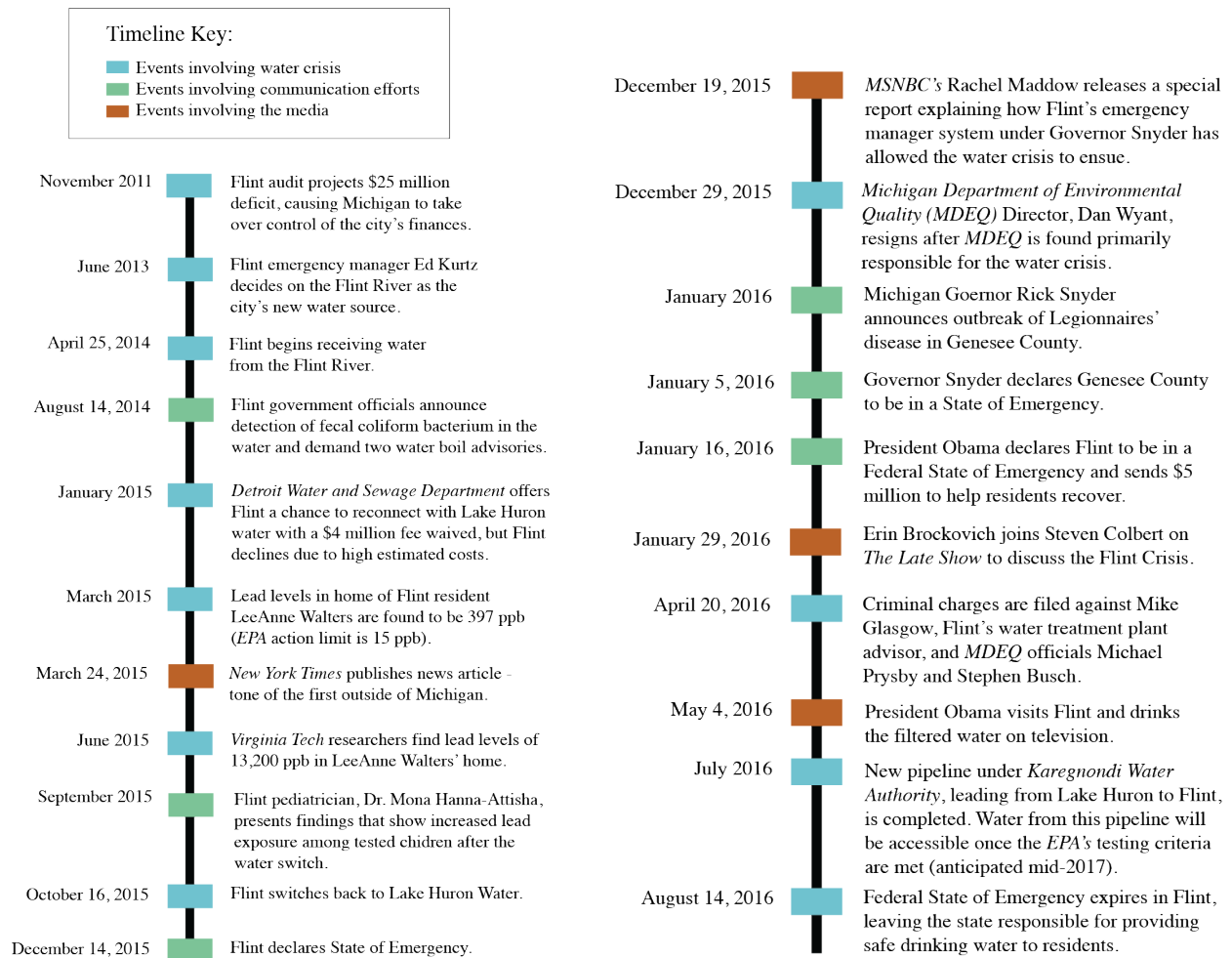
Teaching Notes

Crisis Overview:

On April 25, 2014, Flint, Michigan, switched its drinking water source to the Flint River as an interim source during the construction of a more cost-effective water system.

The Flint River had historically been known for its pollution. Combined with administrators' inadequate measures to control corrosion in lead pipes and the continuous denial of the contamination being a real problem from government officials, the contaminated water sparked a public health crisis, drawing national attention and requiring Federal Government assistance.

Key Events of Crisis:



Learning Objectives:

1. To understand the importance of communicating often and in a timely manner with constituents to alleviate the crisis.
2. To know public relations best practices for managing a public health crisis.
3. To recognize the government's responsibility to be transparent and honest with constituents.

Discussion Questions:

1. How did city and state officials fail in their duty to listen to their stakeholders? What should they have done differently?

Note: Flint residents came to community meetings with bottles of discolored water.

Researchers found lead levels in homes to have exceeded EPA hazardous waste limit.

Pediatrician found that blood lead levels in children had increased. State and city officials should have noted these warning signs and switched back its water source sooner.

2. What responsibility does the government have to inform its constituents about public health concerns?

Note: The city and state government should be responsible for a public health crisis caused by its officials' mistakes. Social media was used extensively to communicate concerns of residents, and officials should have taken these concerns seriously to stop the crisis before it became truly problematic.

3. What events ultimately led to the water contamination crisis? Which individuals were most responsible?

Note: The water contamination started first because of cost-cutting measures. The city has a poor economy, and a deficit caused the switch to a cheaper water source. That water source was polluted. Also, anti-corrosive treatment was not used to prevent the polluted water from leaching onto the lead pipes. Several city and state officials tampered with lead level reports and denied any real concerns of contamination.

4. How should Flint officials have responded to better manage for the future?

Note: Flint government officials should have sacrificed the extra costs and switched its water source back to Lake Huron when it had the chance. They should have realized that continuing the flow of polluted and lead-contaminated water would only get worse, and it would not go unnoticed forever.

5. What was the significance of Flint's socio-economic status in causing the crisis? Could this crisis have happened in any city?

Note: Flint is an economically depressed city where more than half of residents live below the poverty line. Certain officials tampered with reports and neglected to use anti-corrosive agents in the water treatment system because they didn't believe anyone would notice if Flint's water was unclean. This type of crisis could happen in a city that doesn't receive much national attention.

6. If you were the Flint emergency manager, appointed to help resolve the city's failing economy, how would you have treated the situation differently from the start?

Note: The state-appointed emergency manager was responsible for taking control of Flint's finances and stabilizing the economy after a projected \$25 million deficit in 2011. To cut costs, the appointed emergency manager, Ed Kurtz, decided to switch the water source to the Flint River. An appropriate decision would have been to begin the construction of a new pipeline under a more cost-effective water system, but to keep using Detroit's water system in the meantime, rather than switch to the Flint River.

Application of the Page Principles for the Effective Practice of Public Relations:

1. Tell the truth

- Many of the *Michigan Department of Environmental Quality* officials altered reports to show lower levels of lead in the water. They were not clear or honest in acknowledging and mitigating the situation. They also knew that anti-corrosion control was a necessary step for treating water coming through lead pipes, but they convinced Flint's Water Treatment Plant workers to neglect that step.

2. Prove it with action

- Very little action was taken from city and state officials during the time that Flint residents were drinking contaminated water. Test results consistently showed high lead levels in the water, yet government officials did not acknowledge a real threat or realize a potential public health crisis. Eventually, Michigan's Governor Rick Snyder issued a task force to determine the culprits of the water contamination and asked for Federal assistance to restore Flint.

3. Listen to stakeholders

- City and state officials did not recognize the presence of a public health concern until over a year and a half after the water switch, despite overwhelming evidence. Flint residents had growing concerns and complaints about the water as their detrimental health effects continued, researchers' test results showed that lead levels in Flint homes exceeded the *EPA* hazardous waste limit, and a pediatrician's research showed that blood

lead levels of Flint children had doubled since the switch. *MDEQ* officials and government leaders continued to affirm that the water was safe for use.

4. Manage for tomorrow

- City and state officials ignored evidence that led to the crisis, and by the time it was in full force, the city needed Federal assistance to help its citizens. Several officials and water treatment plant workers knew about the water contamination, but avoided taking action to stop it until the crisis had drawn national attention. These individuals believed that they could continue breaking the law by altering reports and not using corrosion control, and they did not think about how these poor decisions would negatively impact themselves and Flint in the future.

5. Conduct public relations as if the whole enterprise depends on it

- During the time of the water contamination, state and city employees did not think about all of their stakeholders, especially the Flint residents. Many of the employees knew of the contamination, but they ignored it in hopes that it would never be discovered. By putting off acknowledging the crisis, Flint officials showed that they did not care about the well-being or health of their residents.

6. Realize an enterprise's true character is expressed by its people

- Officials of *Michigan's Department of Environmental Quality* ignored Flint's Utilities Director when he said that Flint was not capable of treating and safely distributing Flint

water. Instead, they told him to tamper with a Lead and Copper report to remove the highest levels of lead. Additionally, Governor Snyder faces criticism for having the crisis ensue under his watch. He should have done a better job of knowing that state employees were going against the law to avoid public knowledge of lead in the water.

7. Remain calm, patient and good-humored

- Once the crisis became nationally recognized, Governor Snyder responded in a calm manner by requesting assistance from the Federal Government to help Flint residents and issuing a task force to determine who was responsible for the crisis. The city and state employees in charge of the crisis were more concerned with making their job easier at the time because they believed a city like Flint could slip under the radar if its water is not completely clear.

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