2 How Did It Happen? Two Tales of the Origins of the Crisis

As the eyes of the nation began to turn toward Flint in the fall of 2015, expressions of outrage were accompanied by a logical enough question: *how*, in the United States of America, in the twenty-first century, had it come to pass that citizens were being poisoned by their own tap water? The query provoked a proliferation of water crisis timelines over the ensuing months, as journalists endeavored to offer their readers some context, tracing the crisis back to its origins and giving it a narrative arc. In the vernacular of journalism, sculpting a chronology of the crisis was part of a broader obligation to get to the "truth" of what happened. Assembling "as complete a picture of the Flint water disaster as can reasonably be provided," wrote *Bridge Magazine*'s "Truth Squad" in introducing its own timeline, would enable readers to sort "fact from fiction and spin from credible analysis." A "complete" picture of the water crisis would offer not just the truth, but the *whole* truth, capturing the "full weight, detail, and step-by-step context" of the crisis "all in one place and in one narrative."[1]

The idea that there was a "whole truth" of the Flint water crisis waiting to be uncovered through determined fact-finding was a common—and perhaps predictable—component of journalistic accounts of the crisis. Epistemologically, it suggested the possibility of a neutral, omniscient vantage point from which every component of the crisis could be surveyed comprehensively and objectively. It also, however, played a powerful rhetorical role in demands for political accountability. The progressive media group Progress Michigan, for example, appealed to Flint residents' right to know the "whole truth" when it sent a Freedom of Information Act request to Governor Snyder in January 2016 demanding that he release his emails from 2013 forward.[2] In a similar vein, at the first Congressional hearing on the

water crisis the next month, Representative Elijah Cummings thundered at the Michigan Department of Environmental Quality (MDEQ) interim head Keith Creagh that he wanted "the truth, the whole truth, and nothing but the truth," accusing Creagh of helping Snyder to dodge blame for the crisis. When Snyder initially declined to offer his own Congressional testimony, Representative Dan Kildee called the decision "deeply disappointing," insisting that Snyder make himself available for questioning "so that the whole truth can be found."[3]

One possible way of depicting the struggle over the "truth" of the water crisis would be to frame it as a quest by crusading truth seekers—journalists after the "facts," residents, activists, and their allies in search of "answers"—to wrest it from mendacious elites or expose truths overlooked by others. There is certainly something to be said for this characterization. There *were*, after all, numerous instances of obfuscation and spin on the part of officials, several of whom found themselves facing felony charges for what was widely reported as a "cover-up."[4] There were also critical moments when activists, with the support of members of the medical and scientific communities, fundamentally altered the discourse around the water by bringing new information to light and fighting back against those who sought to discredit it.

But, ultimately, any simplistic dichotomy that pits agents of truth against purveyors of falsehood breaks down. Although the concept of "whole" and impartial truth was espoused as a journalistic ideal and used to ground certain demands for political accountability, in reality those who sought to contest official narratives of the crisis answered back not with an exhaustive compendium of "facts," but with *counter*-narratives. The reason the world came to know of the water crisis, maintained Flint activist Nayyirah Shariff, was that the "grassroots resistance" had countered proclamations about the safety of the water with a narrative of its "own."[5] When Shariff used the term "narrative" in this sense, she did so more broadly than I do here. To capture Shariff's meaning, I prefer to speak of a "discourse" around the water, within which officials framed Flint's water quality as a nonissue (at least prior to October 2015 and again after lead levels returned to "normal") and activists framed it as a public health crisis (or, more commonly, "disaster"). However, within that discursive struggle, the *narrative* of the water crisis—understood more narrowly as an account of how it unfolded—was a central point of contention. Shariff often spoke of the importance of promoting a grassroots "narrative" of the crisis in this narrower sense as well, one that reinforced

activist demands by assigning blame to the proper people and policies and that featured residents and activists as the main protagonists.

The relevant point here, though, is that counternarratives are narratives, too. Although fighting to get them accepted may involve bringing suppressed "truths" out into the open, it is not the same thing as impartially pursuing the "whole" truth. Narratives are, by necessity—by definition, in fact—selective, notwithstanding *Bridge Magazine*'s pretentions to an all-encompassing narrative of the crisis.[6] Of course, there are important differences between narrators who strive to be inclusive and honest and those who are deliberately partial and duplicitous. And the narratives narrators relate may be more or less "true" when measured against external criteria of truth—we do, after all, dismiss some narratives as "false." But even narratives that are, by relative standards, "true" are constructed through omissions as well as inclusions, through arrangement and emphasis, through decisions about where the story begins and where it ends. The shape narratives take is influenced, furthermore, not only by the objectives of the narrator, but also by the narrator's perception of the expectations and aptitudes of her audience. And even the most scrupulous narrators are limited by imperfect information and unconscious biases. For all of these reasons, any narrative of the water crisis is an act of interpretation rather than neutral reportage, even when narrators strive to speak of what "really happened."[7]

Naturally, if our objective is to construct an accurate account of what happened in Flint, weighing the relative veracity of different narratives of the crisis matters. When one approaches narratives from the vantage point of social and political struggle, however, asking how true they are is often less meaningful than asking how *useful* they are to specific actors. And the utility of a particular narrative is sometimes inversely related to its accuracy and objectivity. This is clear enough when we consider official narratives spun to deflect responsibility and manage popular perceptions. But counterhegemonic narratives, too, incorporate strategic elisions and calculated points of emphasis. We would be foolish to expect those engaged in a struggle for their lives and livelihoods to make impartiality an absolute value.

This does not mean we should expect to find activists embracing outright deceit. What is more common is the idea that "we" who struggle have "our" truth—a truth rooted in our experiences, a truth that may serve as an antidote to the falsehoods perpetrated by others, but a truth with a small "t," tacitly tailored to our needs and objectives. By extension, the tale

activists tell of how things came to be as they are, and why action is imperative, is not an attempt to relay the "whole" story but, rather, to construct a representation of social reality that justifies and buttresses a particular struggle.[8]

The fight for clean water in Flint began as a fight over perceptions of social reality—with officials, on one hand, proclaiming that there was no cause for alarm, and activists, on the other, insisting that the city was in the midst of a "crisis."[9] Once the existence of a crisis was generally acknowledged, the narrative of how it happened became a critical site of struggle. In chapter 1, I argued that directing attention to the "how" of the crisis was a useful way of getting around the ambiguities of a distributive justice framework and raising questions of procedure, participation, and democracy. In this chapter, I argue that answering the "how" question the "right" (or at least most useful) way was an essential means of creating a discursive framework in which the claims and demands made by activists took on meaning and power—not least because a robust account of how the crisis happened implied answers to subsidiary questions like *when* the crisis began, *who* was chiefly responsible, and *what* should be done to solve it and prevent future crises.

Advocating for the narrative favored by Flint's water activists—what I will call the "political" narrative of the crisis—would not have been a struggle without its coming up against competing narratives that offered different answers to the same questions. In what follows, I focus on two in particular. The first is what I will call the "technical" narrative. Briefly, the technical narrative framed the crisis narrowly as a product of faulty water treatment caused by technical incompetence. It placed the start of the crisis at the first infusion of improperly treated water into Flint's pipes, identified those directly overseeing the water system as the principal culprits, and proposed short-term solutions to the crisis focused on adjustments to water treatment processes. For longer-term solutions, the narrative recommended repair or replacement of damaged infrastructure and more consistent enforcement and/or tightening of water regulations. The second narrative, which I will call the "historical" narrative, was considerably broader in scope. It pushed the origins of the crisis back into Flint's early history, attributing the contemporary vulnerability of the city to a wide range of racial, economic, and political dynamics operating over many decades, and arguing that the response to the crisis had to address these deeper structural factors.

To say that these narratives are in "competition" with the political narrative of the crisis risks giving the wrong impression, because I do not mean to suggest that they are logically incompatible with it. In fact, in many ways all three narratives are symbiotic, and separating them out is, to some extent, artificial. Furthermore, preferring one need not mean dismissing the others. It is entirely possible to stress the political causes of the crisis while acknowledging the technical and historical aspects of the crisis.

But the logical compatibility of different narratives is, like their truth value, not always what matters most in practice. In practice, placing emphasis on one or another account of the crisis's origins had important consequences. The narrative one chose to foreground committed one to either an expansive or a narrow view of the scope of the crisis and the proper response to it. It created a backdrop for the indictment or exoneration of specific individuals whose actions or inactions arguably contributed to the crisis. And it established the parameters within which one could claim either that the crisis was approaching an end or that more work remained to be done.[10]

The Technical Narrative of the Crisis

One can find a consensual core of technical details in almost every account of the water crisis. All are agreed that the water drawn from the Flint River between April 2014 and October 2015 and treated at the Flint Water Treatment Plant was more corrosive than the Lake Huron water Flint was used to receiving, corrosive enough to destroy the protective mineral crust, or "passivation layer," that normally prevents water from coming into direct contact with the pipes that carry it. This allowed the water to begin eroding the pipes themselves, producing the dramatic oranges and browns of iron corrosion, opening up pinhole leaks in galvanized pipes, and releasing lead in both soluble and particulate form from the city's thousands of lead service lines, as well as from lead solder and brass fixtures.[11] The disruption of the system also broke up the "biofilm" that forms on the inner surface of pipes, liberating the bacteria that grow there. Combined with the smorgasbord of iron, which serves as food for microbes, the potential for contaminants to enter the system through holes, and difficulties maintaining consistent chlorine residuals throughout the city, this created an environment in which bacterial growth was difficult to keep under control.[12]

These basic facts are, for all intents and purposes, beyond dispute. What I am calling the "technical" narrative of the crisis, however, begins much more controversially. It begins with the claim that Flint River water, for all the damage it did to the city's infrastructure, could have been rendered harmless with the right kind of treatment. This claim clashed, of course, with the commonsensical view residents had of the river as broken beyond repair. Initially even some experts had doubts. When researchers from Virginia Tech first traveled to Flint in August 2015, they took samples of the river and questioned whether its corrosivity could ever have been adequately neutralized.[13] The conclusion they ultimately reached, however, was that there was nothing in the river water "that proper treatment couldn't render potable."[14] Other water experts agreed.[15] According to the technical narrative, then, the crisis had its origins not in a water *source* problem but in a water *treatment* problem.

What, then, went wrong at the Flint Water Treatment Plant? The answer, in its pithiest form, is that rather than counteracting the natural corrosivity of the water, the treatment process employed while Flint was on the river actually exacerbated it. Delving into the details, however, reveals a rather more complicated story, one that is hard to piece together because of spotty data on day-to-day operations at the plant. In the most authoritative account yet assembled, Susan Masten, Simon Davies, and Shawn McElmurry reveal that ferric chloride added to help settle out organic contaminants increased the water's already high level of chloride by 28 percent to 100 percent. Other aspects of the treatment process, they show, had the effect of lowering the pH of the water and making it more acidic, another factor in its overall corrosivity.

In his own assessment of the water distributed by the treatment plant in 2014 and 2015, Virginia Tech's Marc Edwards concluded that "any competent person should have seen this water will eat up iron and eat up lead."[16] The picture that emerges from Masten, Davies, and McElmurry's account, however, is one in which the requisite skills, experience, and preparation were in short supply at the plant. Utility operators used to receiving stable, treated lake water were all of the sudden asked to oversee the treatment of water that was not only more corrosive, but also highly variable and unpredictable. Lacking a clear treatment plan, they were forced to resort to *ad hoc* improvisation. Masten and her coauthors found that there were no "treatability studies on which to determine chemical dosages until late August

2015," and that "plant personnel were left to attempt to address the plethora of complex water quality issues and complaints by trial and error. Significant changes were made to chemical dosages, and the reasons for these changes were often not apparent."[17] Thanks in part to this inconsistency, the switch to the river introduced chaos into the water system.

Despite the higher degree of complexity involved in treating river water, however, the technical narrative holds that the change in water source would have been deemed a "success" (as Marc Edwards put it[18]) if some simple changes had been made to the treatment process. Above all, what was missing was what water engineers call "optimized" corrosion control. The water that Flint had received previously came pretreated by the Detroit Water and Sewerage Department with orthophosphates, which bind to metal and coat pipes as they travel through the water system, reinforcing the passivation layer. An adequate dose of these chemicals should, in theory, shield pipes from any ill effect from corrosive source water. However, the water sent out to Flint residents from the treatment plant had no orthophosphates or any other corrosion inhibitor.[19]

Why the MDEQ, which was advising the plant on its treatment process, did not mandate the use of corrosion control is a question that has never been answered satisfactorily. As the MDEQ saw it, after a system switched to new source water, the federal Lead and Copper Rule (LCR) allowed for two six-month periods of monitoring before determining that a corrosion inhibitor was necessary. This monitoring was, at least in the short term, the extent of the MDEQ's plan to comply with the LCR. Later, after the MDEQ came under fire for its role in the crisis, it protested that the addition of lime to the water—part of the water softening process—amounted to a kind of corrosion control. Marc Edwards, however, scoffed at this explanation and proceeded to show through an analysis of pH that the water had in fact grown increasingly corrosive as lime was added.[20]

As puzzling as it was to many experts, the MDEQ's failure to ensure that proper corrosion control was in place was often framed as a "mistake" caused by genuine misinterpretation of the LCR—a mistake from which a series of "unintended consequences" followed.[21] Edwards concluded that the whole affair "started relatively innocently."[22] Where wrongdoing began to creep into the actions of MDEQ employees (and the city employees taking their direction) was in their water monitoring practices, which exploited loopholes in the LCR that allowed for sampling procedures

known to underrepresent the prevalence of lead. One such procedure was "preflushing"—a method of clearing accumulated particulate lead from water lines the night before taking a grab sample. The MDEQ also distributed small-neck sampling bottles that residents were prone to fill cautiously, with a weak stream of water unlikely to dislodge particulates from their service line and premise plumbing.

These practices followed the letter of the LCR but violated its spirit. Other practices flouted it more directly. During a critical round of LCR-mandated sampling in summer 2015, in the midst of growing popular fears about lead contamination, MDEQ and city employees failed to seek out (as required) high-risk homes known to have lead service lines, relying instead upon a convenience sample in which more than half of the homes had copper lines.[23] Even more brazen was the conscious exclusion of two high-lead samples that would have put the city's ninetieth percentile for lead over the Environmental Protection Agency's (EPA) "action level" of 15 parts per billion (ppb).[24] The MDEQ maintained that there was good reason to disqualify the samples because of idiosyncrasies within the homes tested. Part of its rationale for dropping the data points, however, seems to have been a desire to avoid taking cumbersome remedial action, including notifying residents of the results, as would have been mandatory had the city exceeded the 15 ppb action level.[25] Decisions like this were indications, Susan Masten suggested to me, that the incentive for the MDEQ and other such agencies to remain in "compliance" with the law—by any means necessary—was stronger than their commitment to public health.[26]

In instances where MDEQ and City of Flint employees manipulated data and delayed bringing public attention to potential health threats, their actions were sufficiently out of step with state and federal law that they resulted in felony charges for tampering with evidence and misconduct in office. As Marc Edwards stressed, however, much of their behavior was perfectly ordinary, part of an epidemic of cheating on federally mandated lead testing made possible by lack of specificity within the LCR.[27] It so happened that the Flint crisis materialized when the EPA was already in the process of revising the LCR, and the law's failures in Flint inspired much discussion about how it could be strengthened.[28] As part of his effort to demonstrate leadership during the crisis, Governor Snyder inserted himself into the debate, calling the existing version of the LCR "dumb and dangerous" and pledging to institute a stricter action level of 10 ppb at the state level.[29]

Aside from highlighting the ways in which problems caused by faulty water treatment were compounded by lax monitoring and regulation, advocates of the technical narrative like Edwards pointed to "chronic underinvestment in infrastructure" as another contributing factor to the crisis.[30] That underinvestment was evident, firstly, at the Flint Water Treatment Plant itself, a facility opened in 1954 and used only lightly during the nearly fifty years that Flint purchased treated water from the Detroit Water and Sewerage Department. As the city prepared the plant to operate full time in late 2013 and early 2014, it spent a paltry $4 million on upgrades—far short of recommendations made by private contractors hired to evaluate the plant's needs.[31] The city also hired some new personnel, but not nearly enough to compensate for budget-slashing layoffs in previous years. On the eve of the switch, the plant had twenty-six employees—down from around forty a decade earlier when it was a backup facility—with only four employees on duty at any given time and no fully licensed F1 operator on site.[32]

After the corrosive water left Flint's underequipped and understaffed water treatment plant, it traveled through pipes that were well past their prime. Most of Flint's water infrastructure was built in the early twentieth century, when its population grew exponentially along with its booming auto industry, and its water mains were over eighty years old on average when the switch was made.[33] Even before the switch, the city was plagued by water main breaks, and the problem only got worse during the Flint River period (there were 296 breaks in 2014 alone). Every day, millions of gallons of water were lost.[34] From the mains, the water entered service lines about which little was known due to poor record keeping, but which often dated back to the era when lead was widely used. Like dozens of other cities around the country, Flint once had an ordinance on the books, passed in 1897, that required homes and business to connect to the water grid through lead service lines.[35] Although some of these lines were replaced over the years, tens of thousands remained. Furthermore, the material often used as an alternative to lead, galvanized iron, proved in some ways to be an even bigger liability during the crisis: not only did it corrode much faster, corrosion caused its surface area to grow and sorb passing dissolved lead, a complicating factor in the recovery effort.[36]

Just as the crisis exposed weak spots in water quality regulations and monitoring that inspired reevaluations of federal law, the pitiable condition of Flint's water system offered an opportunity to talk about infrastructure

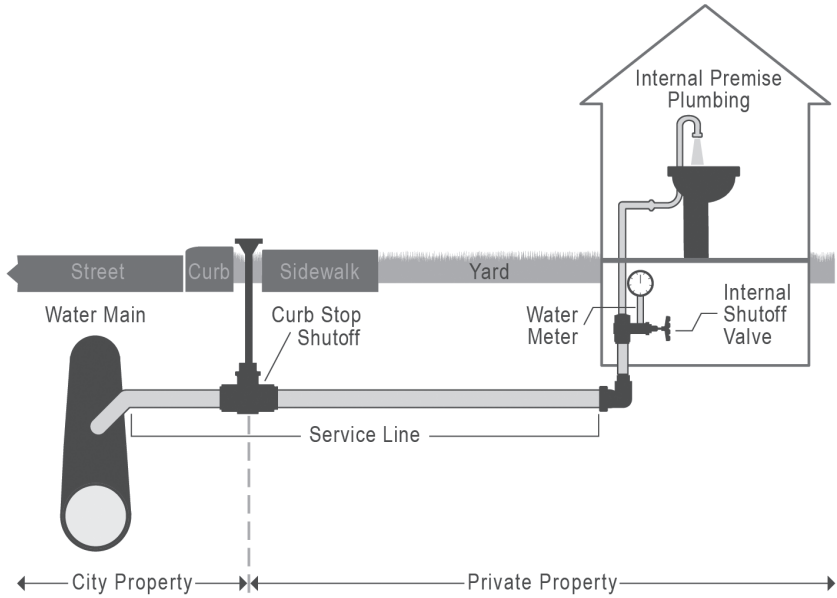

Figure 2.1
Water infrastructure from main to tap. Audrey Zarb.

on a national scale. As many commentators pointed out, Flint's aging and oversized pipe network was in many ways emblematic of a national infrastructure crisis. Marc Edwards warned that the United States was destroying the "very fabric of … civilization" by cutting corners on its infrastructure.[37] The data on national infrastructure needs supported this grim assessment: in successive "report cards" in 2013 and 2017, the American Society of Civil Engineers gave the nation's drinking water infrastructure a "D" and estimated that it needed at least $1 trillion worth of investment over the next twenty-five years.[38] By some estimates, over a quarter of that total would be required just to replace the nation's estimated 6.1 million lead service lines.[39] And only a fraction of the cost could be covered through municipal water bills without raising rates significantly, even in cities like Flint where rates were already far above the national average. To get around the problem of steep rates, advocacy groups closely involved in Flint like the Natural Resources Defense Council and Food and Water Watch called for the reinvigoration of federal financing for infrastructure projects.[40]

The technical narrative's theme of crumbling infrastructure in need of investment, like its theme of defective federal regulations, proved amenable to the Snyder administration, which made infrastructure initiatives an official part of its response to the water crisis. In January 2016, Snyder announced the formation of a "commission on twenty-first-century infrastructure," which ultimately found that the state would need to spend around $4 billion simply to address existing infrastructural needs.[41] A related initiative was inspired by the complications caused by Flint's incomplete data on its pipes, which came to light when engineers trying to track down the city's lead service lines in fall 2015 found that its records on pipe composition were stored on tens of thousands of index cards and physical maps. University of Michigan–Flint professor Marty Kaufman and a team of students put in a Herculean effort to digitize the information over the next few months, but having a digital database did not change the fact that much of the data was flat wrong (when Kaufman looked up my house on his map, for example, it wrongly indicated a galvanized rather than a copper and lead service line). Even after University of Michigan–Ann Arbor professors Eric Schwartz and Jacob Abernethy began applying a sophisticated statistical model to pinpoint the likely location of lead lines, the crews digging them up still found pipes made of other materials 22 percent of the time.[42] With these challenges in mind, Snyder began to push a plan to create an accurate and comprehensive digital map of the state's infrastructure.[43]

Although the technical narrative spawned broader discussions about lax regulations and antiquated infrastructure, these themes were in some sense tangential to its account of how the water crisis actually came about. As flawed as the LCR was, it was not flawed enough to explain the MDEQ's strange interpretation of it. As old as Flint's pipes were, they were not so old that they would have crumbled in the presence of properly treated water. In the final analysis, the crux of the technical narrative was a singular decision: the decision not to use optimized corrosion control during the water treatment process. The crisis would never have happened, in other words, if a select few people in charge of water treatment had simply done their jobs.[44] From an accountability standpoint, the implication was clear: those in search of the origins of the crisis needed look no further than the MDEQ. In its final report, the Governor's Flint Water Advisory Task Force was blunt: "MDEQ caused this crisis to happen."[45]

The Snyder administration did not have to stretch much to make this conclusion politically and ideologically serviceable. The idea that "career bureaucrats" were chiefly liable for causing and perpetuating the crisis kept the focus on relatively low-level state employees without direct political ties to the administration.[46] It also offered an opportunity to impugn the culture of bureaucracy, which Snyder argued had produced (so-called) public servants who were "ineffective, inefficient, and unaccountable." Snyder's bureaucracy-gone-wrong account of the crisis was also useful because it could be used to spread blame beyond the state level to the EPA, whose callous and out-of-touch employees, said Snyder, "allowed this disaster to continue unnecessarily."[47]

Technical explanations for the crisis also encouraged a focus on technical solutions within the recovery effort. If the crisis was primarily a consequence of botched water treatment, the most urgent need was to fix the treatment process. Marc Edwards became the most prominent advocate of the idea that the immediate health risks Flint residents faced from the water could be mitigated through the introduction of corrosion control, combined with the deployment of point-of-use faucet filters. Although by October 2015 Flint was no longer using river water, orthophosphates, he said, were still necessary to "heal" damaged pipes by reestablishing a passivation layer and preventing further leaching of lead. Activists, however, worried that "healing" the pipes would help the state shirk responsibility for taking them out of the ground, and that selling residents on filtered water would detract from their demand for safe *un*filtered water.

The technical narrative of the crisis lent itself, then, to a narrow, water treatment–centric explanation for the crisis's origins that came to be associated in activists' minds with an equally narrow response to its effects. If missteps around corrosion control and regulatory failures were at fault, the state could get away with sacrificing some of its low-ranking bureaucrats to popular demands for accountability and placing the rest of the blame on the EPA. And because the pipes could be "healed" through orthophosphate treatment (a notion that became the object of much scorn and ridicule on the ground in Flint), the state could argue that replacing them gradually—or even not at all—would not compromise public health. Even if an emphasis on the technical implications of the crisis did not lead inevitably to such conclusions, its compatibility with a constrained and apolitical approach to remediation made it more than a little suspect in the eyes of activists.

The Historical Narrative of the Crisis

At the opposite end of the spectrum from the technical narrative in breadth is what I will call the "historical" narrative of the water crisis. The fortuitous appearance of historian Andrew Highsmith's *Demolition Means Progress: Flint, Michigan and the Fate of the American Metropolis* in July 2015, right on the cusp of the revelations about lead, provided anyone seeking a historical backdrop for Flint's present-day water woes with a towering point of reference. Based on a seven-hundred-page dissertation written while at the University of Michigan—a dissertation that some residents, convinced of its explanatory power, had trekked through before the appearance of the book version—*Demolition Means Progress* was the most comprehensive scholarly history of Flint ever published. It became the obvious touchstone for conversations about the prehistory of the crisis.

In interviews,[48] a scholarly article, and an op-ed in the *Los Angeles Times*, Highsmith encouraged those who would understand the crisis to put it into historical context, arguing that "Flint's toxic water crisis was fifty years in the making."[49] He explicitly juxtaposed this claim to what I have called the technical narrative—the idea that the crisis could be boiled down to "the simple failure to use proper anticorrosive agents" and subsequent "government mismanagement." The crisis, he insisted, was "also the product of a variety of larger structural problems that are much more difficult to untangle and remedy."[50]

One advantage a historical perspective offered, Highsmith argued, was a deeper understanding of the infrastructural challenges afflicting the city. The problem with Flint's water system was not just that it was composed of toxic materials and poorly maintained, but that it was designed for a different kind of city than the one Flint had become. As already mentioned, most of Flint's pipes were laid during its period of rapid growth in the early twentieth century, as General Motors (GM)—which evolved out of the Durant-Dort Carriage Company on the north bank of the Flint River—grew into the largest automobile company in the world and attracted job seekers from all over the country. Workers originally lived in shantytowns in the immediate vicinity of the city's car factories, an embarrassing eyesore and potential source of unrest GM sought to alleviate by constructing residential neighborhoods. To accommodate these new housing developments, Flint's water infrastructure

crept gradually outward from the water treatment plant on the northeast side of town.

Up through the 1950s, the city laid its pipes on the assumption that it would continue to grow, well past what in retrospect was its peak population of around two hundred thousand people. As the population plateaued and then began to shrink over the next several decades, the pipes stayed in place, and the city was left with an oversized infrastructure it could not afford to maintain. Underuse of the system by residents now far too small in number to need its full capacity created dead spots of stagnant water throughout the city, making all the challenges of water treatment and distribution even thornier.

The expansion of infrastructure was also a key driver of suburbanization, which transformed the geographic, racial, and economic character of the city. In the early twentieth century, suburban development was limited by the absence of amenities like paved roads and water and sewer lines, which made the suburbs ineligible for federal mortgage insurance. To address this problem, suburban developers convinced residents to agree to the higher taxes necessary to fund infrastructure projects. The city of Flint itself also helped facilitate the growth of infrastructure beyond its borders. In the 1940s and 1950s, in search of more space and cheaper land, GM began building factories outside the city, successfully lobbying city officials to extend city infrastructure to service them. This policy reflected an economic philosophy Highsmith calls "metropolitan capitalism" that "rejected distinctions between the city and its suburbs" and held that "growth anywhere in a metropolitan region was a boon to everyone in that region."[51] What made this kind of development distinctive in Flint's case, however, was the hope that Flint and its suburbs would eventually be incorporated into one overarching tax- and resource-sharing metropolitan government—a supermunicipality that planners deemed the "New Flint."[52]

Suburban developers and residents had different ideas. Through the middle decades of the twentieth century, they became increasingly convinced that the economic growth of suburban areas was best served by preserving their political independence. Suburbanites also began to develop distinctive cultural identities that were in some ways explicitly antiurban, reinforcing their desire to keep their political affairs separate from Flint's. Because of Michigan's generous home rule provisions—which allow for easy incorporation and even charter townships with some of the self-governance

privileges of villages and cities—it was possible for suburbs to protect themselves from the absorption prescribed by the New Flint plan. As they grew from primitive encampments into politically autonomous cities and townships, they formed a hard ring around the "old" Flint that constrained the latter's ability to expand geographically and annex development outside its borders. By the early 1960s, the dream of metropolitan consolidation was dead, forcing Flint to resort to small-scale strip annexation to expand its tax base.

The dynamics driving suburbanization came from inside as well as outside the city, as the breakdown of Flint's rigid pattern of racial segregation sparked white flight to the overwhelmingly Caucasian, and increasingly affluent, surrounding areas. When African Americans first began arriving in Flint in large numbers in the 1940s, they were funneled into the city's two black neighborhoods—Floral Park, just southeast of downtown, and St. John's, on the fringe of GM's Buick City complex. Until the US Supreme Court's *Shelley v. Kraemer* decision of 1948, the racial homogeneity of other neighborhoods in the city was assured through racially restrictive housing covenants forbidding home sales to anyone but members of the Caucasian race. Even after these covenants were ruled unconstitutional, racist real estate practices and popular pressures made it difficult for black families to move into traditionally white areas. The city's groundbreaking open housing ordinance of 1967 was a victory for racial justice, but it only accelerated the exodus of Flint's white residents. Altogether, Highsmith writes, "between 1950 and 2010, the number of whites living in Flint dropped precipitously, from 149,100 to 38,328, while the city's African American population increased from 13,906 to 57,939."[53]

Some whites were inherently uncomfortable with racial integration. Others feared the decline in property values associated with it—fears stoked by blockbusting real estate agents who sought to profit off whites looking to sell their homes after blacks started moving into the neighborhood. Whatever their reasons for leaving, white residents took with them a substantial part of Flint's tax base, creating stresses on the city's ability to provide basic services and maintain its infrastructure. These stresses only further intensified as GM began to withdraw its manufacturing operations from the city in the 1980s and 1990s, eliminating tens of thousands of jobs and raising Flint's unemployment rate to one of the highest in the nation.[54] Among the city's increasingly desperate, and ultimately futile, attempts to convince

GM to stay was a highway project that obliterated the historically black Floral Park neighborhood in order to build the I-475/I-69 freeway interchange. During the same period, GM also successfully challenged the city's property tax appraisals, resulting in a $34 million rebate and a tax cut of 30 percent that further depleted the city's coffers.[55]

Meanwhile, the center of the city began to hollow out as businesses fled downtown for more hospitable suburban locations. Rates of poverty and crime skyrocketed, discouraging new economic investment. Hundreds of city employees were laid off and city services like trash collection, police, and fire were scaled back. With help from Michael Moore's unflattering 1989 documentary *Roger & Me*, Flint also became the poster child for misguided attempts at urban renewal: most notably, the infamous Autoworld, a short-lived Six Flags theme park at the center of the city's quixotic campaign to reinvent itself as a tourist destination. Thanks to Moore's film, the highest-grossing documentary in history up to that point, Flint developed a reputation for being cartoonishly inept in addition to dilapidated and dangerous—a city with a rich past but hard to take seriously in the present, and best avoided for safety's sake. When an EPA employee sent an internal email at a critical juncture in the water crisis suggesting to colleagues that Flint was not "the community we want to go out on a limb for," it is hard to believe these stigmas did not enter into her assessment.[56]

Pulling all of these various threads together—industrialization and deindustrialization, suburbanization, segregation, the decline of government services, ill-fated urban renewal—into a schematic of the prehistory of the water crisis yields a complex causal chain that extends all the way back to the early twentieth century and implicates a wide range of actors. As a scholarly aid to tracing the historical processes by which environmental inequalities and injustices are produced,[57] such a wide-ranging account of the crisis's origins is invaluable. It also offered a potential resource to the activists who championed the political narrative of the crisis described in the next chapter. The political narrative rested upon the argument that aside from being an affront to democracy, emergency management was a failure on its own terms, incapable of solving managerially problems that were in essence structural and cumulative. Deficits could be eliminated temporarily through the reduction of operating costs, but without addressing the structural inequalities underpinning them—inequalities of race, class, and geography built up over time—they would inevitably reappear, and cities like Flint would be

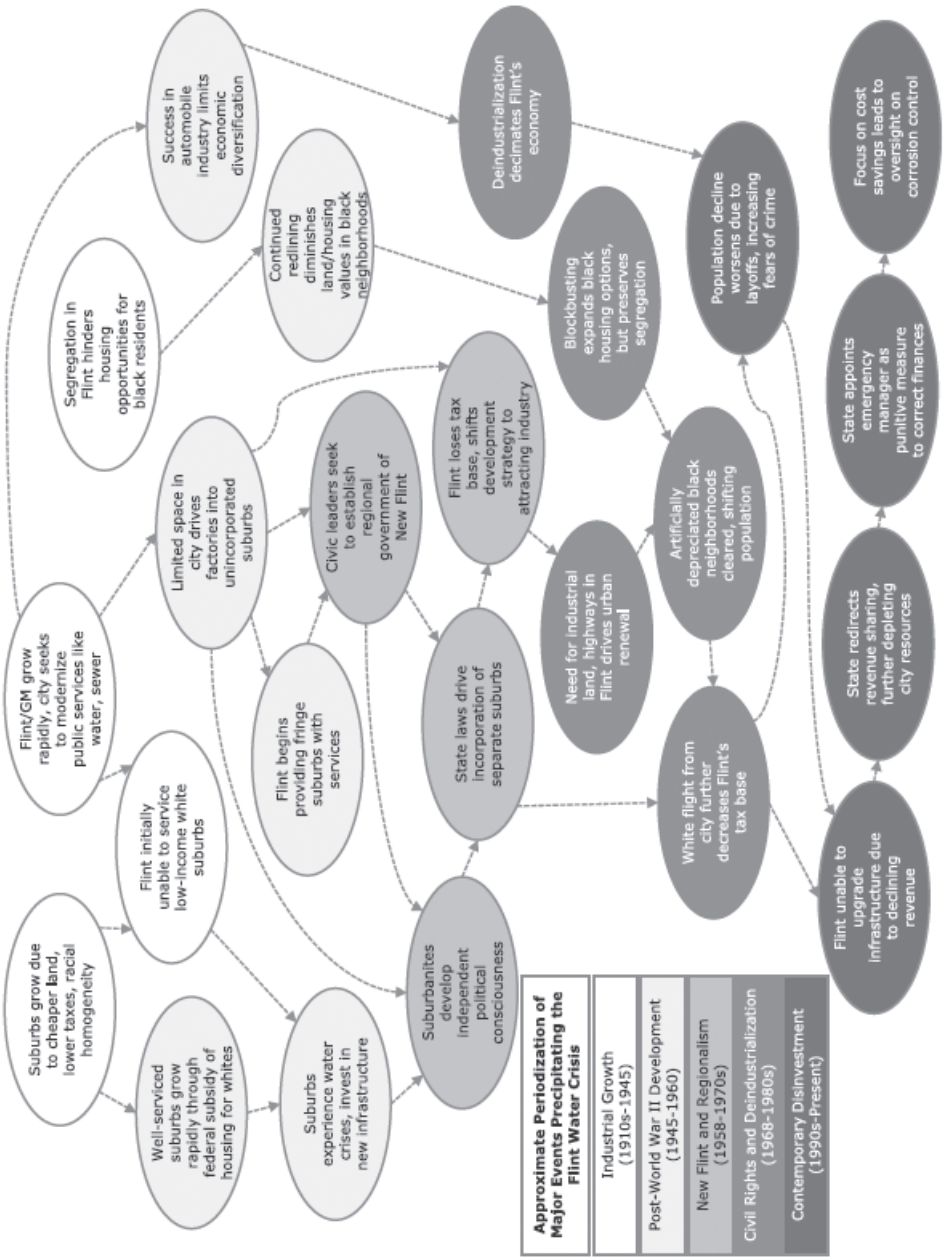

Figure 2.2
The causal chain of the Flint water crisis (from Sadler and Highsmith, "Rethinking Tiebout").

perennially tempted to make reckless decisions that subordinated public health to cost considerations. Ultimately, the only way to prevent another water crisis, Highsmith argued, was to solve the *urban* crisis from the roots up. And, contrary to the philosophy of austerity enacted by emergency managers, he maintained, "You can't cut your way out of urban crisis."[58]

From a political perspective as well as a scholarly one, then, the historical narrative had its advantages. But it also had limitations. The political accountability the activists were after depended on being able to pinpoint specific actors, actions, and policies as direct or proximate causes of the crisis. While putting the crisis into historical perspective was not inherently incompatible with this objective, sometimes taking a bird's-eye view had the effect of diffusing responsibility and distracting from more immediate political objectives.

The clearest example emerged from the proceedings of the Michigan Civil Rights Commission (MCRC), a state body charged with investigating acts of discrimination, which held three hearings on the water crisis in 2016. After state-sponsored investigations into the crisis by two other bodies failed to convince activists that the state was taking the crisis seriously, the MCRC was seen by some as the city's "last hope" of redress from a state agency,[59] and many of Flint's water warriors turned out to offer their testimony during public comment periods at each of the three hearings. Because the commission's stated objective was to investigate possible civil rights violations associated with the crisis, some activists hoped it would recommend that legal action be taken against specific guilty parties.

When the MCRC released its final report in February 2017, however, the report's effect was anticlimactic at best. The commission announced that it had been unable to uncover evidence of justiciable discriminatory intent behind any of the most immediate decisions that caused or perpetuated the water crisis. Consequently, it focused its discussion of civil rights on Flint's past, turning the bulk of the report into a history lesson on the roots of "structural and institutional discrimination and racism" in the city.[60] Arguing that the causes of the crisis were "much broader" and "more complex" than could be captured through narratives of water source changes and engineering decisions,[61] the report summarized the history of the various forms of discrimination chronicled in Highsmith's work, concluding that "past racism played an important role in creating the conditions that allowed the water contamination crisis to occur." To the disappointment of activists, however, as well as some of the experts invited by the commission

to testify, the report had little to say about the responsibility of anyone directly involved. When the commission did address the state's response to the crisis, it gave it high marks: though "imperfect," the response had demonstrated the state's "goodwill and moral acceptance of responsibility" as well as its "resolve" to make things right.[62]

Some of the commission's recommendations suggested that it had had difficulty deriving concrete and timely prescriptions from its broad historical analysis. Several called simply for better "listening,"[63] deeper "understanding,"[64] and more "acknowledge[ment]" of the role of race in "our history."[65] Where the recommendations got more specific, they used Highsmith's work as the basis for demands that ran directly counter to what activists were calling for. Impressed by Highsmith's account of the interweaving of Flint's fate with that of its metropolitan neighbors, the report suggested creating and implementing "a form of regional government (or at least regional cooperation)"[66]—a suggestion that grated on the ears of activists suspicious that the state was scheming to abolish Flint as a political entity and absorb it into the county. (On numerous occasions, I heard activists say that the water crisis would be used as an excuse to do just that.) Furthermore, when the commissioners got around to considering the role of emergency management in the crisis, they disappointed activists again by calling for the replacement or restructuring of the emergency manager (EM) law rather than its repeal, while floating the idea of actually *expanding* the power of EMs by giving them regional authority—another suggestion borne of the regional emphasis of Highsmith's work but greeted with incredulity by members of the community.[67]

Toward a Political Narrative of the Crisis

In some respects both the technical and the historical narratives offered ammunition to Flint activists. Even the narrowest version of the technical narrative placed the lion's share of the blame for the crisis on actors at the state level, feeding into activists' demand that the state "fix" what it "broke." On occasion, activists also took up the idea that the crisis was a product of people not doing their "jobs," implying that it could have been prevented if decision makers had followed laws already on the books and lived up to their professional obligations. When the Coalition for Clean Water—an alliance focused on ending the city's use of the river, whose story

is told in chapter 6—released a series of demands in the summer of 2015, it ended with an ultimatum directed at the MDEQ: "DO YOUR JOB THE WAY THE EPA INTENDS FOR YOU TO DO IT."[68]

But the technical narrative could also be used to depoliticize the crisis, steering attention away from political actors and political policies. Marc Edwards, for example, said he could empathize with residents' opposition to emergency management (calling the EM law "un-American"), but maintained that decisions about corrosion control were made from "a science and engineering perspective," by civil servants with specialized skills, not by EMs or any other political figure.[69] Former EM Darnell Earley, in written Congressional testimony, concurred, arguing that "this was not a leadership issue—this is purely a water treatment issue."[70] Similarly, Snyder's description of the crisis as a "massive error of bureaucracy" centered responsibility on technocrats charged with ensuring the smooth operation of government and directed attention away from the political context he was instrumental in creating.[71] From this perspective, preventing future crises was principally a matter of replacing a few personnel, tightening up some regulations, and, perhaps, making a general commitment to reinvest in infrastructure. The technical narrative required some admission of guilt on the part of the state—Snyder made a point of saying he was "sorry" and would "fix it"[72]—but it also allowed the state to limit accountability to a handful of bad actors and avoid addressing the structural political and economic issues raised by activists.

The historical narrative, too, was useful to activists in some ways but not others. It could be used to show that the bulk of Flint's infrastructural and financial woes were caused not by poor management but by deep-seated structural dynamics stretching back decades. It supported the idea that the injustice of the water crisis was amplified by the cumulative effect of a long history of past injustices. As evidenced by the disappointment that followed the MCRC report, however, the historical narrative could also be employed in ways that were at odds with the message, strategy, and objectives of the water movement—diffusing responsibility across time rather than concentrating it in contemporary political actors, and contradicting the demands of the moment with poorly timed, if well-meaning, proposals aimed at addressing longstanding structural inequality.

The activists' preferred narrative of the crisis was more expansive than the technical narrative but more focused than the historical narrative. It

homed in on the political context within which key decisions were made about Flint's water. It held that the ultimate problem was not with low-level bureaucrats who didn't do their jobs, but with powerful political appointees who *did*. It framed the crisis as evidence of the terrible consequences of the usurpation of representative government, and the struggle for clean water as part of a larger struggle for democracy. And it situated the beginning of the crisis not in April 2014 or in the mists of history, but in 2011, when emergency management came to Flint.

Flint Fights Back

Environmental Justice and Democracy in the Flint Water Crisis

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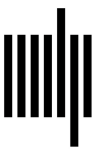

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