

August 2018

The Invisible Crisis: Framing the Remediation of Milwaukee's Lead Laterals

Isabella Rieke

University of Wisconsin-Milwaukee

Follow this and additional works at: <https://dc.uwm.edu/etd>

 Part of the [Geography Commons](#), [History Commons](#), and the [Sociology Commons](#)

Recommended Citation

Rieke, Isabella, "The Invisible Crisis: Framing the Remediation of Milwaukee's Lead Laterals" (2018). *Theses and Dissertations*. 1910.
<https://dc.uwm.edu/etd/1910>

This Thesis is brought to you for free and open access by UWM Digital Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of UWM Digital Commons. For more information, please contact open-access@uwm.edu.

THE INVISIBLE CRISIS:
FRAMING THE REMEDIATION OF MILWAUKEE'S LEAD LATERALS

by
Isabella Rieke

A Thesis Submitted in
Partial Fulfillment of the
Requirements for the Degree of

Master of Science
in Urban Studies

at
The University of Wisconsin-Milwaukee

August 2018

ABSTRACT

THE INVISIBLE CRISIS: FRAMING THE REMEDIATION OF MILWAUKEE'S LEAD LATERALS

by

Isabella Rieke

The University of Wisconsin-Milwaukee, 2018
Under the supervision of Professor Ryan Holifield

When Milwaukee's municipal water system was developed in 1874, one-half-inch lead pipes were used to convey water from the mains in the street to a customer's home; the City has since acknowledged that nearly 100,000 such lead pipes are still in use today, a revelation which has opened for debate whether or not these pipes pose a galvanizing public health risk with far-reaching policy and infrastructure implications. This study explores the community response to Milwaukee's lead laterals through the efforts of the Freshwater for Life Action Coalition (FLAC). How do Milwaukeeans understand the risks posed by the lead laterals? In what ways do they believe themselves, the City of Milwaukee, or other actors to be responsible for remediating these risks? How has FLAC framed the issue to energize their local social activist movement? Even more so, is there something about lead, specifically, which makes it difficult to organize a movement? How does lead itself play a role in understanding risk and responsibility in this social movement? By exploring the factors that contribute to how Milwaukeeans understand the risks posed by the lead pipes, this study seeks to understand in what ways — if at all — they consider themselves and the City to be responsible for remediating those risks.

DEDICATION

This thesis is dedicated to my family, friends and committee members; to Jamison;
and to Milwaukee, the city that welcomed me.

TABLE OF CONTENTS

LIST OF FIGURES	v
LIST OF TABLES	vi
LIST OF ABBREVIATIONS.....	vii
1. INTRODUCTION	1
2. THEORETICAL FRAMEWORK	9
2.1 <i>Social Movements and Local Social Movements</i>	9
2.2 <i>Frame construction in social movements</i>	12
2.3 <i>Place and scale in frame construction</i>	14
2.4 <i>Recognizing the role of non-humans in risk construction</i>	17
3. BACKGROUND	21
3.1 <i>Organizing around urban lead</i>	22
3.2 <i>Developing Milwaukee's water system</i>	24
3.3 <i>Cryptosporidium and back again</i>	27
3.4 <i>Testing urban lead levels</i>	29
3.5 <i>Uncovering Milwaukee's lead levels</i>	30
3.6 <i>Milwaukee: the segregated city</i>	31
3.7 <i>FLAC: The Freshwater for Life Action Coalition</i>	35
3.8 <i>Scandal and visibility</i>	36
4. METHODOLOGY	38
5. FINDINGS	43
5.1 <i>Truth Will Out: Diagnostic framings at FLAC's inception</i>	44
5.2 <i>A critical lack of awareness</i>	53
5.3 <i>The uneven effects of place</i>	58
5.4 <i>Insufficient municipal responses and the individuation of risk</i>	69
5.5 <i>The invisibility of lead</i>	82
6. CONCLUSION.....	93
REFERENCES	96
APPENDICES	103

LIST OF FIGURES

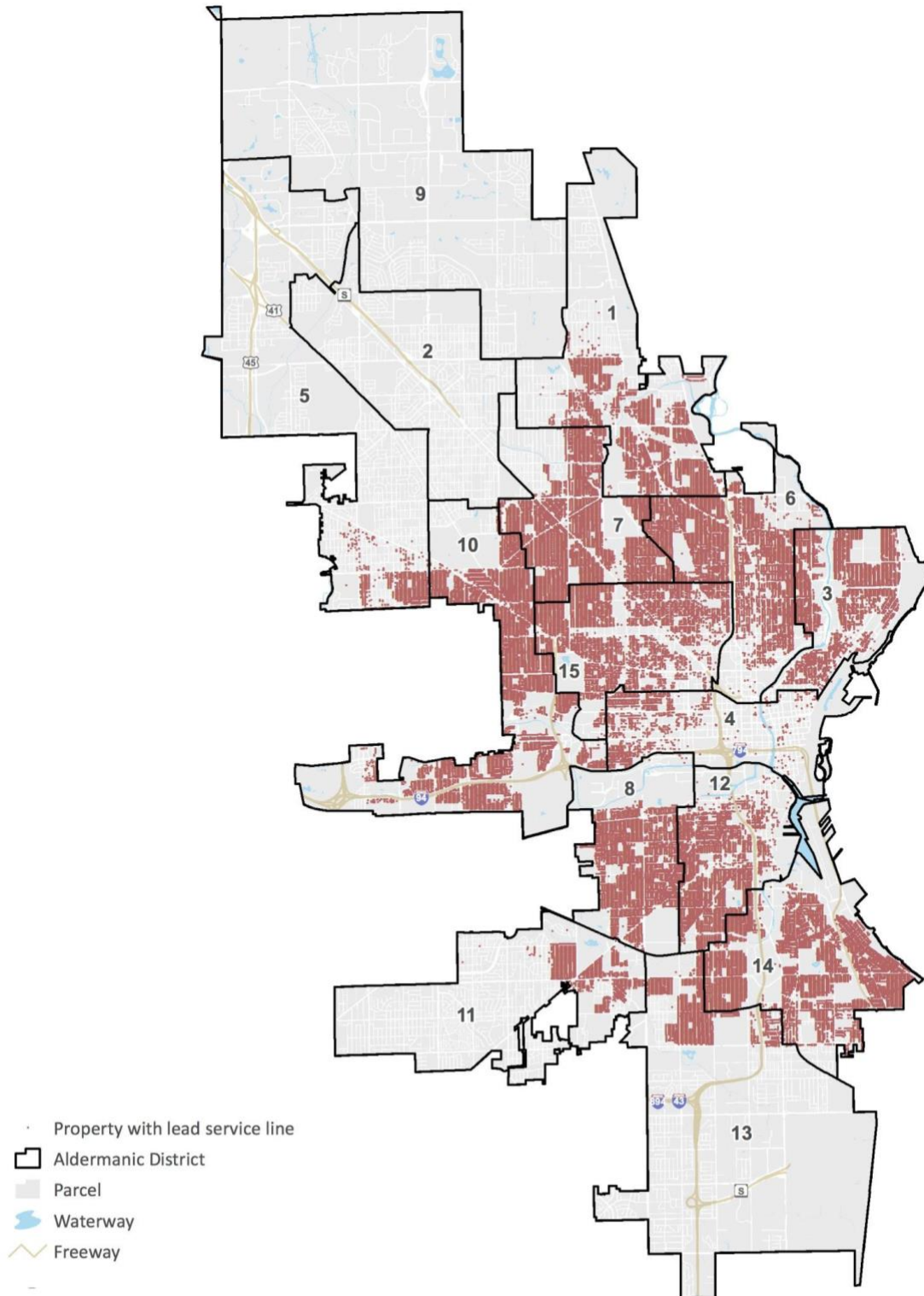
Figure 1	
Diagram of water system and lead laterals	26
Figure 2	
Water Council branding	29
Figure 2	
Lead Service Line Distribution in the City of Milwaukee, 2016.....	32
Figure 4	
Lead Poisoning Density in the City of Milwaukee, 2014.....	59
Figure 5	
Lead Poisoning Density vs. Lateral Distribution in Aldermanic Districts 10, 12 & 14	64
Figure 6	
2016 Lead-Safe Milwaukee Campaign, Bus Shelter Ad	75
Figure 7	
16th Street Survey Responses (Responsibility)	78
Figure 8	
16th Street Survey Responses (Strategies)	79
Figure 9	
“Test a service line to see if it is made of lead”	87

LIST OF TABLES

Table 1	
Framing Tasks.....	13
Table 2	
Elements of FLAC framings.....	45
Table 3	
Residential Lead Service Lines by Aldermanic District	63
Table 4	
Demographic Information and LSL share by Aldermanic District	65

LIST OF ABBREVIATIONS

ANT	Actor Network Theory
EJ	Environmental Justice
EPA	Environmental Protection Agency
FLAC	Freshwater for Life Action Coalition
HOLC	Home Owners' Loan Corporation
LCR	Lead and Copper Rule
LSL	Lead service line / lateral
LSM	Local Social Movement
MHD	Milwaukee Health Department
MWW	Milwaukee Water Works
NAACP	National Association for the Advancement of Colored People
ppb	parts per billion
SMO	Social Movement Organization
SSCHS	16th Street Community Health Center
WQTF	Water Quality Task Force



1 - INTRODUCTION

Shortly after I moved to Milwaukee in August of 2016, a friend and I were listening to a radio piece covering the ongoing lead poisoning and lack of safe, drinkable water in Flint, Michigan. “People aren’t even talking about it, but we have those here too, you know,” she said to me. She was referring to Milwaukee’s lead laterals, the subterranean pipes that connect each property to the city’s water mains. A careful search of the Milwaukee Water Works’ website confirmed not only that Milwaukee had lead laterals, but also that they were connected to over 70,000 residences throughout the city — including my own. Over the next year and a half, I developed a strange, uneasy relationship with my tap: although I knew my trusty water filter pitcher was not lead-certified, I continued to drink from it on a daily basis. I tried to flush the tap for at least three minutes each morning, as the City’s website instructed, but if I was in a rush (as I often was) I was willing to settle for a minute, at best. Each morning, I boiled tap water to make myself coffee, nervously brushing away the thought that boiling water can increase lead concentration. In my home, I only drank filtered water, but I refilled my water bottle at bubblers throughout the day, and warily drank tap water when it was served to me in restaurants. I spoke often with others about my research, explaining the ubiquity of lead laterals even as I was changing precious little about my own daily behaviors. It was only in recent months that I upgraded to a lead-certified water filter, after over a year of researching Milwaukee’s lead laterals and the activists who were trying to have them replaced. Although I knew — better than most — the risks associated with lead laterals, my pipes were not keeping me up at night, nor were they even compelling me to change my routines. So what, exactly, was going on here?

This is precisely the conundrum faced by a group of local organizers dedicated to the remediation of Milwaukee's lead laterals; although the specter of risk looms large, it seems to be just that — spectral, and not quite compelling enough for Milwaukee residents to choose to take on the mental, emotional and financial burdens required to mitigate the risks for themselves and their family. Although I might have been wary of my tap's potentially harmful effects, the risk seemed so far away, so easy to ignore, that I was willing to live with my own negotiated discomfort. My water never made me feel sick, and I was never put off by its taste, color or smell; nothing had changed about my objectively safe, drinkable water, except for the revelation that it was potentially, unmeasurably dangerous. Further, no one was going to mitigate this indiscernible risk for me — the government had no plans to replace the pipes, and my landlord had no interest in assuming the massive costs. If I took seriously the risks my taps posed, I would need to take unilateral steps to protect myself.

I had enough on my plate. I put it out of my mind.

• • •

In 2015, tests revealed lead levels of more than 100 parts per billion — nearly seven times the federal safety level — in 24 of Wisconsin's 72 public county water systems (Schmidt & Hall 2016a). Among other events, these test results have compelled the City of Milwaukee to acknowledge that more than 70,000 such lead pipes are still in use today, and have opened for debate whether or not these pipes pose a galvanizing public health risk with far-reaching policy and infrastructure implications. The driving force behind this debate is Robert Miranda, the lead organizer of the Freshwater for Life Action Coalition, or FLAC. Miranda and his group have spent the last three years organizing and lobbying for government action, demanding full removal of the lead service lines at no cost to homeowners. This study is drawn from over a year

and a half of qualitative research into the group's efforts, methods, victories and challenges. What initially began as an opportunity to follow an emergent social movement spearheaded by community organizers quickly morphed into something more complex, as the uniqueness of the group's efforts — and more importantly, the uniqueness of their obstacles — became clear.

For FLAC, one of the major obstacles has been deciding how best to communicate the risks of lead contamination in a way that mobilizes public and political support. This is a central question in social movement theory, which is often addressed using the language of “collective-action frames,” discourses employed by social movements to legitimate and motivate activism (Benford & Snow 1992). These frames articulate values, beliefs, concerns and goals, making sense of events in such a way as to highlight collective identity and motivate collective action. These frames can serve several different tasks (see Table 1): *diagnostic frames* identify a problem and attribute blame; *prognostic frames* suggest solutions for the problem; and *motivational frames* provide a rationale for activism.

At its core, this study has two very simple research questions: what collective-action framings has FLAC employed, and what challenges have they faced? To that end, I provide an exploration of the diagnostic, prognostic and motivational framings the group employed and some of the hurdles they faced. In part, I do this by asking what might be gleaned from where the group's framings have been successful versus where it has faced opposition or been forced to adapt.

In response to the first question, this thesis argues that four characteristic framings were most routinely employed by FLAC activists over a period of two years, including that the City of Milwaukee is untrustworthy and more concerned with protecting its own interests than with remediating the lead laterals (section 5.1); that the community is insufficiently aware of the issue

(section 5.2); segregation in Milwaukee produces uneven effects and differential political opportunity structures (section 5.3); and that the City's current responses have been insufficient (section 5.4). As I trace the major components of the framing, I answer the second research question above with two arguments. The first is that the subdued response to FLAC's motivational framing, or their calls for activism, stems in part from a tension in the group's prognostic framings or proposed solutions, to which municipal and organizational actors have responded by focusing their efforts on short-term mitigation strategies — such as distributing filters to residents — rather than long term proposals for full remediation. If effectively managed and equitably distributed, these short-term solutions can be a tremendous boon for residents, nearly eliminating the risks posed by lead laterals. However, this also means that a bifurcated response may have the effect of managing the crisis in the short term, relieving the political pressure for elected officials to answer FLAC's demands with a comprehensive solution for a problem which has been managed (nearly) out of existence.

In addition to the elements of FLAC's framings, this study explores some of the unanticipated findings that have proven to be far more complex than the unassuming research questions would suggest, demonstrating the precariousness of FLAC's efforts. First and foremost, the findings in this study show that one of the group's most significant challenges is the increased devolution of responsibility for managing the risks of contaminated pipes, which stems in large part from the short-term solutions referenced above. These proposed interim solutions shift the onus for mitigation strategies from government officials to dutiful residents, who are held increasingly accountable for securing their own health outcomes. As noted, when responsibility for mitigating the risk of lead exposure is increasingly shifted to individual residents, attention and resources are primarily directed to quick fix, "band-aid" solutions that

mitigate — rather than remove — the risks associated with lead pipes. This has the dual effect of not only shifting emphasis away from comprehensive municipal solutions for full removal, but also minimizing the magnitude of the public health crisis, thereby minimizing the need for such long-term solutions. Additionally, not every Milwaukee resident has the ability to bear the mental, emotional and financial burdens of the proposed short-term solutions; if residents are made increasingly responsible for their own short-term solutions, safety becomes not only a choice but a luxury, and one that not every resident can afford.

As my own personal experience with lead laterals demonstrates, this shifting of responsibility is further complicated by the invisibility and unknowability of lead and its attendant risks, which play a critical role in residents' decisions to adopt or ignore the mitigation strategies presented to them. Both lead and the networks — social, political, economic, historical — within which Milwaukee's lead laterals are contained play roles in conditioning and shaping the political opportunity structure. I therefore argue, as an additional part of my answer to the second research question, that it is not simply the distinctiveness of lead, but instead the distinctiveness of how lead is situated *in Milwaukee*, that has played a tremendous role in shaping public and political perceptions and FLAC's remediation efforts. For this reason, although comparisons to Flint might seem intuitive, the two cases are not entirely analogous. This thesis attempts to make clear not only the difficulties of organizing around urban lead, but in organizing around Milwaukee's urban lead, in particular.

What, then, are the problems that arise when lead risk is invisible? For organizers, the first hurdle has been convincing residents that the risk is real, widespread and dangerous. Because the effects of lead poisoning are often associated with or disguised by other factors, this is no small feat. The majority of scientific study has focused on the effects of lead on children,

and scientific consensus on the long term-effects of continuous low levels of lead on adults remains relatively elusive. However, studies have shown that lead poisoning can affect behavior, intelligence and fertility, and can lead to heart disease, high blood pressure and kidney disease (CDC 2017, Lanphear et al. 2018, Navas-Acien et al. 2007). The majority of these lead-related health outcomes commonly associated with genetics or ‘lifestyle choices,’ masking their connection to lead exposure. Further, many of the most effective mitigation strategies which could prevent these health outcomes from ever becoming ‘visible’ are attributable to wealth and Whiteness, meaning the effects of lead poisoning are unevenly distributed across the population.

Lead exposure is closely tied to the age and quality of housing stock, the ability of some property owners to replace old lead pipes and abate any lead paint can reduce their lead exposure to undetectable levels. The effects of lead exposure can also be mitigated through a ‘healthy’ diet; healthiness is here represented by a very particular and structured kind of diet, as the diets that are known to mitigate lead effects are low in sugar, with no snacks or processed foods. Snack foods and sweets frequently sold and consumed in low-income non-White neighborhoods, in particular those imported from Mexico, have been found to be packaged with lead-contaminated wrappers (Fuortes & Bauer 2000). This means that, even if all Milwaukeeans suffered equal rates of lead exposure, non-White residents and any Milwaukeeans living with food insecurity would not have access to a fundamental means of mitigating its effects, making the embodied effects of the same exposure invisible for some and hazardous for others. For organizers, this invisibility is presents a major obstacle; it requires that FLAC not only persuade Milwaukee residents that their seemingly clean, drinkable water is dangerous, but also that they illuminate what may have contributed to a (misplaced) sense of security in the water’s patent drinkability. Specifically, the group must highlight the role of residents’ inadvertent behaviors

and socioeconomic status in unevenly mitigating risk, as contrasted to the government's presumed municipal ability to uniformly eradicate any hazards.

There are inevitable limitations with a study of this nature, which engages with a current and evolving movement that changes with every passing day. It is well beyond the scope of this paper to map all of the framings employed by activists, or all of the nuanced ways in which they are attempting to respond to risk. Instead, I have analyzed the framings most routinely employed by organizers over the course of my research, which means that there is a substantial amount of FLAC's work which remains unexamined. However, I have represented as faithfully as possible the efforts of the group as they were explained to me, using an inductive coding method to infer connections between statements made by organizers and activists. A further limitation of this study is the lack of analysis of City counter-frames, which may seem to suggest that half of the story has been omitted. To this, I can say that my research was focused on FLAC, and their efforts to organize. Any analysis of the City, therefore, is through their eyes as it was applied in their framings. Although analysis of the City's counter framings might add context to the language FLAC employed, I do not think my findings suffer from the exclusion; this paper does not attempt to paint a comprehensive picture of the issue, as seen from all sides — rather, it is an attempt to track the idiosyncratic victories and obstacles of one local social movement.

The chapter that follows situates this case study within the existing literature on social movement theory and collective-action frames, and argues that these theoretical bodies of work are insufficient to explain the unique challenges faced by Milwaukee organizers. Instead, this thesis argues that we must draw upon other bodies of literature, such as those examining the role of non-humans, to more thoroughly consider the unique challenges of FLAC's activism. A subsequent background chapter explores the formation of FLAC and the current crisis of lead

laterals, and traces the development of Milwaukee's water system and its history of tracking the impacts of lead pipes, as well as the city's vested interest in water technology and resiliency. The methodology chapter explains the methods used to collect and analyze data, as well as some of the limitations of the methods employed. Lastly, the data collected from participant observation, in-depth interviews and analysis of survey data will be used to analyze FLAC's efforts to organize around Milwaukee's lead laterals, and to parse the uniqueness of the varied accomplishments and hurdles the group has encountered.

2 - THEORETICAL FRAMEWORK

This thesis builds on the existing literature on social movement theory and “collective-action frames” (Benford 1993, Benford and Snow, 2000, Snow 2013) to explore how FLAC has employed certain “frames” (Goffman 1974) to shape their mobilization efforts. In this section, I explore existing research on social movements, with a specific focus on how we might differently examine *local* social movements (LSMs) as distinct from larger, more formalized social movement organizations (SMOs). Because of the similarities between this case study and other environmental justice movements, I rely on examples from environmental justice (EJ) literature that demonstrate how place and scale are both defined and leveraged in the framings employed by LSMs to produce meaning and motivate action (Kurtz 2003, Martin 2003). I also turn to scholarship on the agency of non-humans (Latour 2005, Robbins 2007) to further expand our understanding of who — or what — is involved in the development and deployment of certain frames, a factor which I contend has been largely overlooked by theories of social movements and frame construction. In this capacity, I ask whether there is something about urban lead which makes it a uniquely difficult focus for social movement actors, with reference to the history of urban lead organizing and the recent examples of SMO activity in Flint, Michigan.

2.1 Social Movements and Local Social Movements (LSMs)

Social movements can be thought of as sustained contentious collective actions to further certain social or political goals (Tarrow 1998). The scholarship on social movements has developed from initially viewing these movements as random, somewhat episodic bursts of

collective behavior, wherein feelings of marginalization and alienation were seen to motivate participation in social movements (see McPhail 1991). Although this theory of collective behavior has been repudiated, this branch of scholarship held that collective behavior events are incited by ‘anomie’ or social disorganization, an understanding of social movements as an inevitable class conflict or social breakdown. More recent scholarship has shown that social movements are in fact more likely to be comprised by less marginalized, more socially integrated members of society, emphasizing the role of rational choice and effectively reclaiming protest as a normal and organized activity of which rational individuals can choose to partake (Olson 1965). This position inspired a new wave of social movement scholarship focused on resource mobilization and political opportunity (Gamson 1980, Jenkins 1983, Tilly 1978). These theories emphasize the importance not only of resource mobilization — money, people, networks, legitimacy — but also of formalized social movement organizations (SMOs) to accrue, wield and deploy these resources in certain conducive political contexts. It might be argued that aspects of resource mobilization theory go too far in overcorrecting for prior social movement theory by assigning such a degree of organization and rationality — the introduction of concepts such as SMOs and other formalized groups — that social movements begin to appear guided by economic and entrepreneurial aims, competitively ‘branding’ their framing to appeal to potential participants (Tarrow 1998). A political process model, by contrast, sees SMOs as neither irrational mobs nor savvy entrepreneurial outfits; rather, they are a link between people and their political institutions, exploiting political ‘openings’ or opportunities for social actors to who lack regular access to power and institutions to become involved in collective action (Tarrow 1998). Following the social movements of the 1960s, a set of “new” social movement theory has drawn from a European tradition, emphasizing the ways in which modern, post-industrial social

movements are fundamentally different from social movements of the past (Habermas 1981). The group of theorists focus in particular on how these “new” social movements differ in their goals, focusing on the evolution of the public sphere and issues of human rights.

The emphasis routinely given to the importance of resource mobilization and political opportunity in motivating collective action tends to reinforce the study of large or even national social movements as the primary focus of social movement scholarship, given their ability to access, accumulate and mobilize resources in order to capitalize upon political opportunities. However, many social movements are neither large nor national, and even organizations as localized as neighborhood groups may be considered social movements in that they bring together residents with a variety of resources to address an array of political, social and economic issues, albeit at the neighborhood level. In this paper, I apply the term “local social movements” (LSMs) to refer to informal organizations with ad hoc structures and limited resources that operate within a focused or limited spatiality, varying in scale from block-level to city-wide organizations. Although they have less formalized organizational structures than SMOs, LSMs still work to demand change from formalized governance structures; they simply do so by defining priorities and politics at a scale other than that of the local government (Martin 2003). This complex negotiation of scale situates the localized grievances of an LSM in discourse with the broader scale of local (community, municipal, county) government, by both highlighting locally specific issues and injustices and relating them to the broader spatial and political context within which they occur.

For LSMs, windows of political opportunity may be remarkably idiosyncratic based upon the scale at which they occur and the political structures and regimes within which they arise. Even LSMs working within the same political context may have differentiated access to

resources and political opportunities. Ferman (1996) examines the role of neighborhood mobilization in urban regimes by exploring the differential responses to neighborhood mobilization in a comparison study between Pittsburgh and Chicago; her assessment of regime theory is an instructive step towards integrating research on neighborhood organization into our conception of urban politics, and how we might differently examine the opportunities presented by political opening not only between cities, but amongst neighborhoods within a given city. Political ‘openings’ can portend widely divergent social, political, and economic possibilities for different communities, a unevenness that LSMs must contend with but may also harness to their advantage.

2.2 Frame construction in social movements

Framing, or the “schemata of interpretation,” (Goffman 1974) is useful in understanding how social movements define and legitimate their activism through the development of meaning and vocabularies. Framing theories fill a gap in the conventional resource mobilization and political opportunity literature by describing how social movement actor interpret events and situations such that they become meaningful and, more importantly, guide action. A central focus of traditional social movement theory is to understand what compels people to participate; as previously noted, this scholarship traditionally calls our attention to the more structural elements of social movements, such as resource mobilization and political opportunity. Through these more structuralist lenses, frames might be considered “resources,” which SMOs can mobilize to motivate participation in a particular social action (Benford & Snow 2000). However, this emphasis on resource mobilization and political opportunity largely presupposes the existence of grievances, as resources to be mined, and then asks what additional resources —

Table 1 - Framing Tasks

Diagnostic frames	Prognostic frames	Motivational frames
Discursive strategies used to identify a problem and attribute blame and causality, articulating victims and perpetrators.	Interpretative packages used to develop strategies for action, propose solutions for an undesirable situation.	Interpretive packages used to garner a public response, with direct suggestions for collective action, and vocabularies of motive as rationale for engaging in such activity.
<i>Who or what is the problem? How is it defined?</i>	<i>How should we solve the problem?</i>	<i>Why should I get involved? How can I?</i>

of which frames may be one — or opportunities are required to motivate participation. Although scholarship on framing similarly focuses on what compels participation, it does not assume that grievances exist *a priori*, but rather that “meaning work” must be undertaken by movement actors to produce mobilizing ideas that necessitate social action (Benford & Snow 2000, Kurtz 2003). In this sense, framing may be considered a central dynamic that propels social movements, motivating action by simplifying an existing and complex reality into more parsable component parts, framing both a problem and its necessary response (Benford & Snow 2000).

Inherent in this conception is the idea that framing is performed *by some for others*, “an active, processual phenomenon that implies agency and contention at the level of reality construction” whereby elites within the SMO are engaged in the evolving process of “the production and maintenance of meaning” through the development of discourses, or frames (Benford & Snow 2000, 614). Using Snow and Benford’s (1992) conceptual heuristic of core framing tasks, collective-action frames can be broken into three primary elements: *diagnostic framing*, *prognostic framing*, and *motivational framing*. Diagnostic frames (see Table 1) are used to articulate not only the central grievance(s) of the movement but also the source and cause of such a grievance. Diagnostic frames are similarly used to attribute blame and responsibility, to which prognostic frames may respond by advocating solutions for the diagnosed problem.

Motivational frames not only define the community that is affected, but provide vocabularies of motive (Benford 1993) — severity, urgency, efficacy, propriety — to signify compelling reasons for individuals to take action. Taken together, this framing fostered by social movement actors motivates collective action through the articulation of shared social identities, and the seemingly kindred ways in which individuals make sense of events (Goffman, 1974).

2.3 Place and scale in frame construction

Although it is critically important to ask who is developing collective action frames and what they are designed to communicate, it is further helpful to understand how the geographic dimensions of that which is being framed dictates or in some way contributes to the ultimate framing. Martin extends social movement theory to explore the specific role of place-based identity in motivating activism through collective-action frames, or what she terms “place-frames” (Martin, 2003). In this, the specificity of the place-frame helps to define collective identity by “situating activism in place,” drawing upon common experiences that are spatially related to define “the scope and scale of the shared neighborhood of collective concern” (Martin, 2003). Martin’s study of place-frames is helpful to our discussion of LSMs in that it examines the discursive role of community organizations in justifying both local activism and local identity, and how LSMs articulate neighborhood interests as ‘universal,’ superseding individual (divergent) identities and compelling collective action. By employing a place-frame at the neighborhood scale, organizations can construct a specific, local spatiality as a legitimate space for political action, justifying and reinforcing mobilization at a scale smaller than the larger context within which the neighborhood exists. These place-based frames allow us to more

effectively explore how a specific spatiality can be leveraged in the framing of social activism at a variety of scales.

These discourses of scale are frequently seen in local environmental justice (EJ) movements, in that they often employ what Buell (2001) refers to as a “politics of elasticity,” relating the localized impacts of environmental injustices to the broader spatial and political factors which produce and maintain these injustices. Small, local EJ movements are often defined by the tension inherent in articulating these spatial ambiguity between the local scale at which residents experience the negative embodied effects of pollution, and the more spatially diffuse scales at which environmental injustices are both produced and experienced (Harvey, 1996; Pulido, 1996). Therefore, local EJ movements must rely on these discourses of scale, simultaneously calling attention to the idiosyncrasies of their locally specific grievance while remaining in conversation with the broader sociopolitical implications of EJ writ large.

Kurtz’s (2003) case study explores the role of scale in LSM framing, examining a proposed chemical facility in Louisiana through the lens of scale- and counter-scale frames. Scale frames, in Kurtz’s analysis, are both collective-action frames and discursive practices which “construct meaningful (and actionable) linkages between the scale at which a social problem is experienced and the scale(s) at which it could be politically addressed or resolved” (Kurtz, 2003 p 894). These framings — of which there are multiple — allow for representations of the controversy at different “idioms of scale,” which may be successively used and reframed to target not only different potential solutions, but also different (inclusive) coalitions of activists. The politics of scale play a particularly critical role in the politics of environmental justice, which as previously noted must simultaneously speak to broad — even global — issues of environmental justice, while remaining rooted in the locally specific EJ issue. Kurtz finds that

locally specific EJ movements are utile in rooting the somewhat conceptual notions of environmental justice, which “cannot be formulated in the abstract, but must be understood with reference to the discursive strategies and material conditions of grassroots struggle” to accommodate lived (and localized) experiences and conceptions of environmental injustice. (Kurtz 2003, p 912). Following Kurtz’s analysis, we must question how pre-existing geographic scales serve to articulate the lived experiences of those affected by environmental injustice, which is not always bounded by the same politically-articulated boundaries of space we colloquially understand. Scale frames can therefore benefit by incorporating more nuanced expressions of space — shifting, overlapping — explicitly leveraging ambiguity to their spatially specific political advantage without capitulating to the complex spatial ambiguity of environmental injustice.

As Martin and Kurtz ably demonstrate, the place that is being framed — and the scale at which that place is articulated — make a difference to the frame that is ultimately employed. This literature on social movement frames sheds much light on how LSMs can motivate action, by employing place- and scale-frames which allow LSMs to define smaller spatial scales as legitimate spheres of action, and to link the multiple scales at which the effects of a spatially diffuse problem may be experienced. Due in no small part to the spatially diffuse nature of environmental injustices, literature on environmental social movements goes further to engage with that which is being framed — the *object*, rather than the subject — than does traditional social movement theory. However, it does not yet go far enough in exploring the role of the non-human objects, issues and spatialities around which the LSM seeks to “produce meaning,” and how the specificity of these elements may contribute significantly to their ultimate framing. This kind of a shift in focus would raise different questions, asking us to move from examining only

the agency and resources of the *subject* — social movements — to incorporating the same agential powers of the *object* — in this case of this thesis, lead laterals. I contend that the work of Martin and Kurtz asks us to consider a possible gap in the existing literature on framing and social movements: that it does not yet take seriously enough the role of non-humans in shaping collective-action frames and productions of meaning. To this end, we must make room in our analysis to examine the agency and ability of actors beyond the (human) SMO elites to not only co-frame social issues, but to inhibit or enhance the effectiveness of collective-action frames.

2.4 Recognizing the role of non-humans in risk construction

Engaging with the specificity of that which is being framed — in this case, Milwaukee’s lead laterals — allows us to explore the agency of non-humans in shaping the resultant framings employed by social movement actors. Here, I employ the term “agency” in a more expansive sense than the traditional definition of agency, which is to say more than simply the capacity of humans (subjects) to make choices to act at will and affect others (objects). Employing an expanded definition allows us to disrupt the subject-object dichotomy and account for differing forms of agency, such as the ability of non-humans to strive to adapt and alter their surroundings, for which social movement actors must (perhaps unwittingly) account. Actor Network Theory (ANT) offers new ways of recognizing the agency of non-humans as an essential part of the relationship between society and the natural world (Latour 2005). Through ANT, agency is understood to be interactional, operating relationally between different actants — a term used to refer to both humans and non-humans — in a manner that defies subject-object distinctions and deemphasizes the role of intentionality. Taken this way, non-humans — animals, plants, weather, lead laterals — can be understood to exercise agency by creating order and disorder,

altering their surroundings both with or without intentionality. An expanded notion of agency neither dismisses nor diminishes the significance of human agency, but instead situates it within a wider network of actants, wherein humans are participants rather than proprietors. Through this lens, we may see the unique properties of lead laterals as more than simply anecdotal or coincidental, but rather as critical and agential in altering their surroundings, including the behavior of Milwaukee residents and social movement actants.

In much the same way that ANT instructs us to look more closely at the network of forces and objects which together produce what might appear to be free will or agency, Michel Foucault's notion of governmentality helps to articulate the relational power networks within which the self-governing citizen is made to be responsible for their risk calculations. Through this lens, the simple hegemon of the state is not solely responsible for enforcing the actions of citizens. Rather, individual subjects come to be responsible for animating themselves, driven by a governmentality which is internally motivated. Rutland and Aylett (2008) combine ANT with literature on governmentality, using the example of local environmental governance (LEG) in Portland, Oregon to explore how the local state enlisted the "self-governing capacities of its residents" to achieve its goals (Rutland & Aylett 2008, 627) and — borrowing from ANT — the 'translations' it employed to do so. Their seamless synthesis of these two frameworks produces a compelling argument that these two concepts can be used together to more fully understand the dynamics of urban governance, as political priorities are produced through a variety of actants that guide and construct meaning. For the purposes of this thesis, these two perspectives are similarly helpful in understanding the dynamics of a local urban social movement focused on lead contamination.

Robbins (2007) employs ANT among other theories to examine the complex relationship between lawns and their suburban American ‘subjects’ (whom he refers to as “lawn people”), asking what causes suburban residents to avidly treat their lawns with chemicals, and how we can make sense of their decision to do so, given the anxiety such chemicals cause them. Following the logic of ANT, Robbins does not assume that “lawn people” choose to apply chemicals and scrupulously maintain their lawns simply because it is their desire to do so, but rather works to reveal the deeply embodied conditions, networks and actants which drive these decisions. By acknowledging the networks within which individuals make decisions, especially risky ones, Robbins helps to locate some of the more surprising factors driving people to submit to — and willingly produce — environments at odds with their own health outcomes. It is worth asking in what ways “lawn people” are similar to what we might call “lead lateral people,” or the residents that knowingly live with lead laterals; they are both embedded within actor-networks which enable them to live with and re-produce a certain amount of risk or anxiety, in spite of their awareness of the risks. What networks exist that make certain ‘risky’ conditions of the urban environment seem necessary or inevitable, and by what logic might “lead lateral people” submit to these conditions, in spite of the anxiety they cause? What properties of the lead laterals, in particular, might be contributing residents’ ability to live with these negotiated risks? By situating risk and responsibility within the larger networks that produce them, we can interrogate the complex factors that together influence residents’ options and obligations in ways that might motivate them to — or dissuade them from — action.

• • •

It is important to understand not only the theories that guide the study of social movements, but the particular resources those movements — and, in particular, local movements

— might use to advance their efforts. For LSMs, framing is a resource of paramount importance, given that these small movements often have a dearth of other resources to leverage and limited political opportunities. As this review has demonstrated, framings employed by smaller movements often benefit from nuanced understandings of place and scale, which allow them to articulate their specific, localized grievances in conversation with more spatially and politically diffuse concepts. Therefore, this current study seeks to examine how a local social movement leverages both place and scale in framing the issue of lead contamination, and further asks what are the limitations of such framings? Although place and scale are important to social movement framing, we also need to understand how non-humans shape and condition these frames; urban lead contamination provides a particularly illuminating case to explore how the properties of non-humans can shape the dynamics of social movements. Although many cities have recently experienced local social movements in response to lead contamination of urban water, including Flint, Michigan, this thesis contends that the dynamics at play in Milwaukee are distinct, and worthy of investigation for what they reveal about non-humans and social movement framing dynamics.

3 - BACKGROUND

In order to better understand the dynamics of the current case study it is helpful to situate it within the context of urban lead, and social movements that have organized around its remediation. First, a brief examination of the history of lead regulation helps to reveal the differentiated approaches and the devolution of responsibility for mitigation strategies from the federal government to the individual, a trend which parallels the larger shift towards neoliberal governance, and which has significant implications for the activists in the current Milwaukee case. This section also briefly explores the LSM dynamics in Flint, Michigan, and how that city's experience with urban lead contamination has served as a resource for other mobilization efforts. I then turn to Milwaukee — the following sections are devoted to the history of the city's water supply, including the development of the city's water works, its experience with *cryptosporidium parvum* in the 1990s and the subsequent efforts to reinvent the city as the 'Freshwater Capital of the World.' The following sections examine the leniency of the EPA requirements for testing and managing urban lead levels, and how the current case of lead contamination and the revelations of Milwaukee's lead laterals came to light.

Before exploring the emergence of FLAC, I look briefly at Milwaukee's history of lead abatement programs, including its lead paint abatement program. Because lead laterals are not the only source of lead exposure, and the effects of lead exposure are compounded by other factors, this section helps to contextualize the risk factors — such as housing, and Milwaukee's patterns of housing segregation and disinvestment — that make certain areas of the city 'riskier' for lead contamination than others. Although this may seem to be tangential to the current case of lead contamination in water, it is central to the dynamics of FLAC's framings, which seek to

highlight both the universal risk of the lead laterals and the differentiated risks of lead contamination. The section concludes with a brief history of the group's development, as well as a discussion of the recent political scandals which have lent more visibility and credibility to the FLAC's efforts.

3.1 Organizing around urban lead

Lead poisoning has long been a public health concern, and federal regulations that have dramatically reduced exposure to lead in the United States in the 20th century should be lauded. However, an examination of the history of regulatory changes and organizing efforts around urban lead exposure reveals differential responses to the three primary forms of risk: the occupational risks posed to workers in lead-using industries; risks posed specifically to children, which have drawn the most medical and political attention; and environmental risks, which are seen as “universal” risks that have indiscriminate effects upon the population (Warren 2001). Although scholarship has been dedicated to distinguishing between the social conditions that drove responses to these three modes of exposure, little attention has been paid to the agential role of lead in shaping such differentiated responses.

The majority of early regulation efforts focused on occupational hazards, demanding increased federal oversight of producers and employers to limit severe exposure in the workplace (Warren 2001, Rabin 2008). As Warren's (2001) comprehensive review of lead reform makes clear, these early efforts were focused on the clinical symptoms that resulted from severe levels of lead poisoning. As medical research has advanced, regulation has instead been tied to quantitative measures — such as lead blood levels — rather than observable symptoms, reflecting a cultural aversion not only to the most dire consequences of lead exposure, but to any

form of preventable risk (Warren 2001). This shift meant that regulation no longer targeted the most problematic and large-scale sources of lead exposure, such as the paint and gasoline industries, but was suddenly focused at the individual level of each child's lead levels. Federal funding has supported local governments and health care providers in assuming a large portion of responsibility for this more granular kind of regulation through subsidized lead abatement programs and childhood testing protocols, allowing them to assist families in identifying and remedying individual cases of lead exposure (Rabin 2008). However, in an increasingly neoliberal context of decreased federal funding and devolved responsibility, families and individuals are expected to assume a far greater onus for averting these 'preventable' risks. Following Nikolas Rose (2001), we may see this a sort of pre-sickness, whereby individuals who are neither observably nor experientially 'sick' are nonetheless enjoined to adopt certain habits and precautions under the auspices of responsibility, in attempts to prevent an illness that may never arrive.

This is further complicated by the inaccessibility of the technical knowledge which undergirds the definition of 'risk' as defined by policy and scientists. As Ottinger (2018) tells us, science — by nature of its political authority and inherent value-system — limits the ability of non-scientists to participate in debate or knowledge construction. This is particularly dangerous in cases pertaining to EJ issues, as the full scope of possible hazards can be obscured by the technical language and those most directly affected by environmental injustices — non-scientists — are unable to participate in decision making.

Lead in drinking water has proven to be a particularly complex problem to identify and eradicate. Although leaded gasoline was all but eliminated by 1988, and a 1978 ban prohibited use of lead as an additive in paint (Schmidt & Hall, 2016b), plumbing, one of the most common

sources of lead exposure, was not explicitly outlawed until 1986. It was not until 1991 that the U.S. Environmental Protection Agency's Lead & Copper Rule (LCR) moved to regulate exposure to lead in drinking water (U.S. EPA, 1991). Because lead pipes were widely used in the development of urban water systems through the United States in the late 1800s, regulation of lead levels in a city's drinking water is a geographically intractable problem, requiring the management or replacement of a subterranean network of city-owned service lines combined with property-owned lines leading to myriad commercial and residential properties. Further, any partial updates or replacements made to the lines may in fact result in higher levels of lead contamination, due to the disturbance caused to the corrosion during replacement (Trueman, Camara & Gagnon, 2016), a distinct phenomenon which has implications for the efficacy of frames which seek to address possible remediation.

It is impossible to explore the unique difficulties of organizing around urban lead without consulting the example of Flint, Michigan, a widely publicized and politicized example of urban lead poisoning. As Pulido (2016) notes, the case of Flint is significant not least because of the horrors inflicted upon Flint residents, but because it made visible the larger structural context within which 'isolated' incidents occur, which is so often invisible in instances of environmental racism. The city decided in 2014 to switch its water supply to the Flint River as a cost-cutting measure, a water source so polluted and corrosive that it caused car parts in GM's Flint factory to rust, to say nothing of the effects on Flint's human residents (Pulido 2016). Scholarship on the environmental racism experienced in Flint has done much to critically reveal the ways in which this incident is not incidental, but is in fact intrinsic to modern systems of governance (Pulido 2016, Ranganathan 2016). Following these analyses, racist intent is seen as an important driver but not the sole motivator; rather, these studies call our attention to racial liberalism and global

capitalism, the context within which black and brown bodies have been systematically devalued to create a “landscape of differential value which can be harnessed in diverse ways to facilitate the accumulation of more power and profit” (Pulido 2016, 1). Social movement efforts to remediate and draw attention to Flint’s lead poisoning have similarly focused on the social conditions and racialized logic which facilitated the city’s decision to baldly prioritize the import of delivering water within a suitable budget over the potential, and as yet unproven, long term health effects for the individual. For activists outside of the city, Flint has served as a galvanizing instance of environmental racism and municipal depravity, a resource that has been mobilized by other LSMs, including the Milwaukee activists.

3.2 Developing Milwaukee’s water system

Milwaukee established a Board of Water Commissioners in 1871, nearly three decades after the city’s incorporation. The public had long been clamoring for a municipal water system; the population of the city already exceeded 100,000 and the human demands on the water supply were significant – and galling. Absent a system for disposal, Milwaukee households disposed of their own garbage by leaving it the streets; the substantial runoff polluted the city’s groundwater to such an extent that “liquid filth” routinely came out of the water pumps (Leavitt 1996, Foss-Mollan 2001). In the early stages of the development of the water system, water was hardly considered to be a public right, a distinction which was reflected in both the plans for development and the techniques of funding. The city began laying a distribution system of large water mains, to which pipes were laid and linked up to deliver water according to a “subscription” system, whereby neighborhoods (sometimes no more than one or more city blocks) would petition their ward supervisor or alderman for the water pipes, and would then set

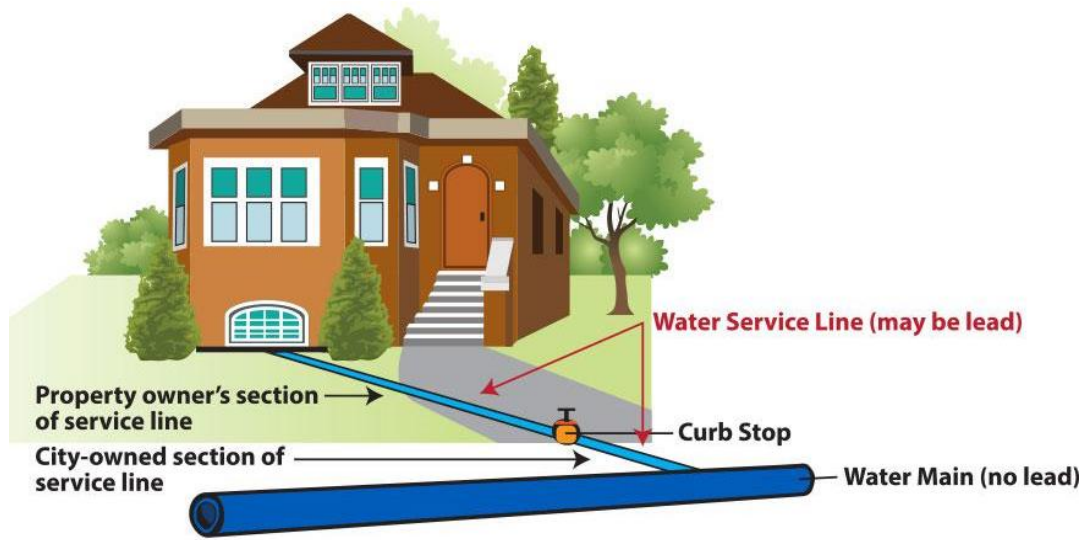


Figure 1 — Diagram of water system and lead laterals

Source: City of Milwaukee

about raising the funds to pay for their installation (Foss-Mollan 2001). Unsurprisingly, this system privileged both well-financed and well-connected Milwaukeeans who had the ear of their alderman, prioritizing the expansion of the water system in more desirable areas of the city. Though “subscriptions” were eventually superseded by a development plan driven more by efficiency than by selectivity, the legacy of subscriptions did not entirely disappear; certain wards on Milwaukee’s South side waited up to thirty years longer than other wards for city services (Foss-Mollan 2001).

When development began on Milwaukee’s municipal water system in 1874, one-half-inch lead pipes were used for the service lines (also known as laterals) to convey water from the mains in the street to a customer’s home (see Figure 1). At the time, lead pipes were standard issue in the development of water systems across the United States in the 1800 and 1900s (Rabin 2008). Lead, often described as “the useful metal,” became a ubiquitous toxin during this time of widespread usage, and efforts to reduce or regulate lead exposure in the last century have had to balance its usefulness to producers and consumers with its potential dangers (Warren 2001).

The current scientific consensus is that there is no level at which lead is considered to be safe for humans and is particularly harmful for children, increasing risk of damage to the brain and nervous system, and possible impairment of their physical, learning and behavioral development (CDC, 2016). Although concerns about the potential health effects of water run through lead pipes were raised as early as 1859, the engineering advantages of lead – more malleable, therefore easier to bend around existing infrastructure, and longer lasting at 35 years, as compared to 16 for iron – outweighed any nascent appreciation of the public health risk (Rabin 2008). When that calculus finally flipped in the mid-1900s, in spite of the valiant lobbying efforts of Lead Industries Association, state and local plumbing codes were revised ad hoc to limit the use of lead pipes in their water systems (Schmidt & Hall 2016b; Rabin 2008). As a result of nearly a century of infrastructure development and differentiated responses across hundreds of local drinking water authorities, the EPA estimates that amongst the 52,000 drinking water systems across the country today, nearly 10 million lead service lines (LSL) are still in use (Smith 2015c). Given the monumental cost and complexity of excavating and replacing all lead pipes across the country, Congress never mandated system-wide replacements; instead, guidelines were provided by the 1986 Congressional amendment to the Safe Drinking Water Act and augmented by the EPA’s 1991 Lead & Copper Rule (LCR) (40 C.F.R 141 § 1, 1991) to make each municipality responsible for monitoring and mitigating potential health risks for their respective populations.

3.3 Cryptosporidium and back again

By the 1990s, Milwaukee had developed its Water Works into an acclaimed water supply, consistently exceeding both EPA purity standards and the (stricter) Wisconsin Department of Natural Resources standards. But in April 1993, Milwaukee experienced an

outbreak of *cryptosporidium parvum*, an oocyst capable of bypassing standard water treatment regimes which causes severe diarrheal illness, a shocking indictment of a water system that was, by all available metrics, a gold standard of water purity. By the time the outbreak was under control, 400,000 Milwaukeeans had suffered gastrointestinal illness, and at least 69 people had died (Ceraso 2013). Reflecting on the outbreak, former Milwaukee Water Works superintendent Carrie Lewis said that the extensive testing done today by MWW is the direct legacy of the outbreak, one which “made us realize that we were in the public health protection business” (qtd. in Ceraso 2013). The *cryptosporidium* outbreak also left a direct legacy on the institutional operations of the Milwaukee Water Works, as well as on its public outreach, awareness and engagement strategies. In the wake of the outbreak, MWW had declined to make any public comment for over a week (Foss-Mollan 2001), a decision which resulted in widespread panic and confusion. MWW has since prioritized public comment, although it places significantly less emphasis on transparency — a strategy, activists contend, that is more concerned with managing a crisis of possible public anxiety than with managing real-life public health crises. The fact that Milwaukee’s water could be fatal despite routinely testing so well informed a greater investment in an analysis of both the chemical composition of the water and a broadening of the potential scope of risk: while the majority of water systems test for only the standard EPA-regulated list (91 contaminants), Milwaukee Water Works tests for more than 500 chemicals annually and publicly posts the results (Ceraso 2013).

These changes were part of Milwaukee’s broader reinvestment in its water management systems and technology following the outbreak, a campaign to rebuild public trust and draw investment by rebranding the city as the ‘Freshwater Capital of the World.’ With the help of massive private investment, Milwaukee sought to reinvent itself as a global destination for water

technology. The Water Council, a non-profit organization and investment hub was developed by Richard Meeusen in 2009 to “support economic growth in the region, attract new talent and develop the technology to solve the world's water problems” through partnerships with more than 180 businesses, government agencies and education programs (Muller 2013). The Water Council has since helped to draw more than \$4 million in grants for job creation and research, and seems positioned to continue to draw even more human capital to the area: in 2014, University of Wisconsin-Milwaukee, one of the Water Council’s partners, opened the School of Freshwater Sciences, a pioneering graduate program (Muller 2013). With the 2015 revelations of widespread lead service laterals, Milwaukee’s sterling reputation as the Freshwater Capital of the World — and the considerable investments attached to it — are being challenged.



Figure 2 — Water Council branding

Source: TheWaterCouncil.com

3.4 Testing urban lead levels

In spite of the staggering number of lead service lines currently in use, more than 99% of the country’s drinking water systems, including Milwaukee, meet the federal requirements for safe lead levels in drinking water — or at least, they do on paper. Federal regulations dictate the frequency of monitoring, the number of samples to be collected, a tiering system to determine the selection of sampling sites, and “action levels” of lead concentration. However, although

there is no level at which lead is considered to be safe for humans, these regulations do not require that lead-compliant water systems will be lead-free or even lead-safe; rather, the water system is only considered ‘dangerous’ when more than 10 percent of sampled household taps exceed 15 parts of lead per billion (ppb). Until ten percent of homes tested surpass this EPA-mandated threshold, the entire populace is deemed to be lead-compliant — in fact, remediation is not required unless the ten percent threshold is met, even if nine percent of the homes sampled tested at exceedingly high levels. In this calculus, homes within the sample that are ‘unsafe’ are a necessary, expected counterweight to the health of the system at large.

In spite of the somewhat lenient federal regulations, municipal water departments have arrogated to themselves the task of managing the ‘safety’ of lead levels in their water supply by means of both manipulation and evasion. A June 2016 study conducted by the *Guardian* concluded that water departments in thirty-three American cities and towns, including Milwaukee, had regularly employed testing methods that deliberately circumvented the US Environmental Protection Agency’s testing guidelines, resulting in lower detected levels of lead in households (Millman & Glenza 2016). Milwaukee, along with twenty other cities, had instructed testers to ‘pre-flush’ the pipes before testing for lead, a tactic that helps clear lead particles from the plumbing before the sample is collected (Millman & Glenza 2016).

3.5 Uncovering Milwaukee’s lead levels

Despite these tactics, 2015 tests conclusively revealed lead levels of more than 100 parts per billion — nearly seven times the federal safety level — in 24 of Wisconsin’s 72 public county water systems (Schmidt & Hall 2016a). These tests were compounded by a 2015 pilot study conducted by Milwaukee Water Works (MWW) when they began an accelerated water

main replacement program, and were intended to determine the effects of the replacement work on lead levels in nearby residences. Partial line replacements have been shown to cause higher levels of lead contamination, as the disturbance caused by working on the line can dislodge corroded lead particles, sending them into residents' water supply (Trueman et al. 2016). The survey identified six residences affected by the water main replacement project and tested their tap water before replacement work began, the day following the replacement, and conducted a follow-up test four weeks later. When the tests revealed elevated lead levels in all six homes immediately following the water main replacement (Stone 2016), MWW immediately suspended all ongoing and planned water main replacement projects where LSLs were present. Although the City has since acknowledged that nearly 100,000 such lead pipes are still in use today (Figure 3), their initial response was to distribute a letter to 70,000 'at-risk' Milwaukee residences where the age of the home (built prior to 1951, the year the city discontinued the use of lead in plumbing materials) indicated that a LSL might be present. The letter, a reassuring testament to the unassailable safety of Milwaukee's water supply, noted in particular that "Lead is not found in Milwaukee's source water, Lake Michigan, nor is lead in our treated drinking water. Your water meets all federal guidelines for safety" (Appendix A). Ironically, the letter also detailed "steps you can take to further reduce your risk of lead exposure," among which were flushing — the very same technique the City had employed to avoid the detection of lead for EPA samples (Appendix A).

3.6 Milwaukee: the segregated city

Of course, lead laterals are not the only source of exposure to lead, and the City of Milwaukee has a strong history of lead abatement work, chiefly through its Childhood Lead

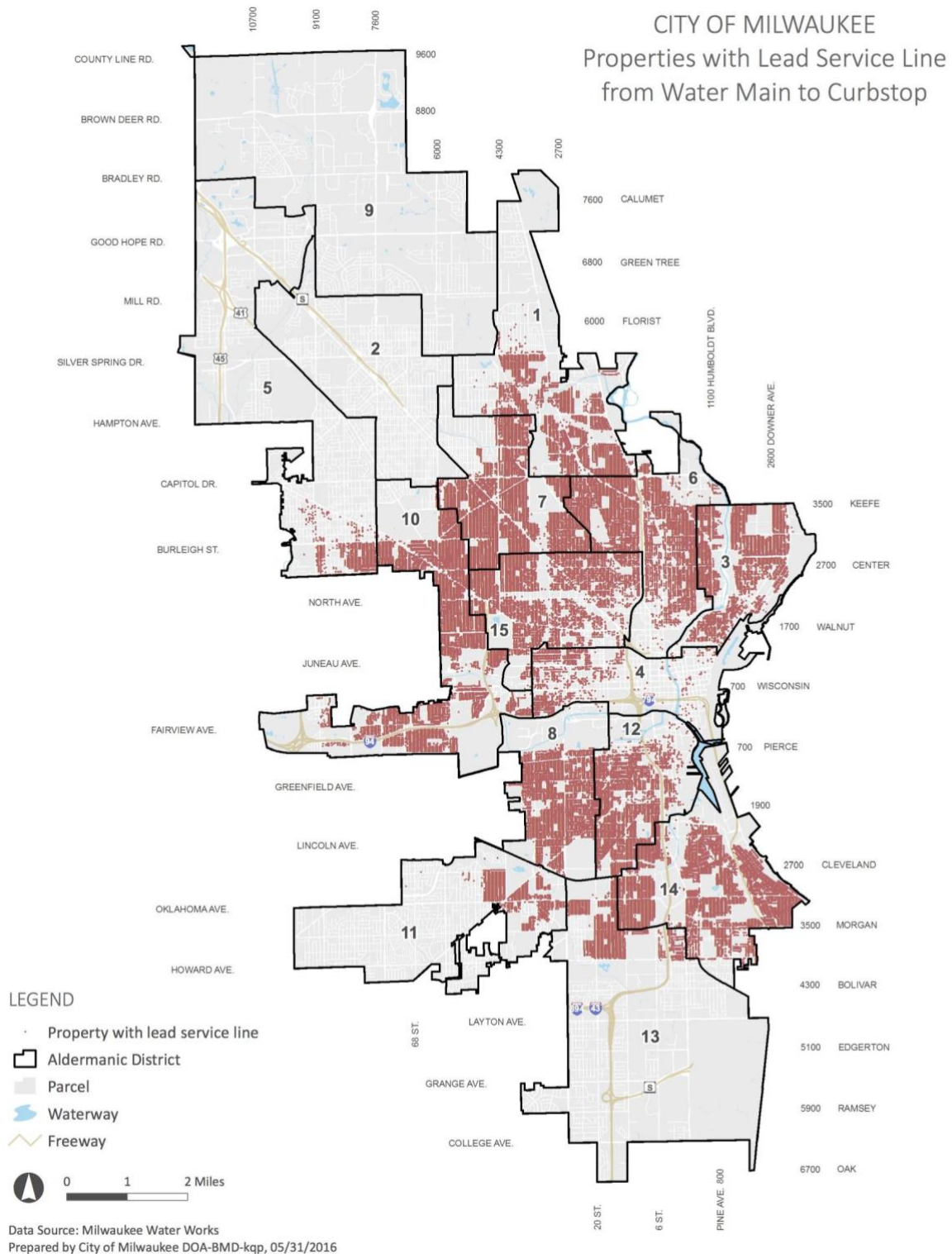


Figure 3 — Lead Service Line Distribution in the City of Milwaukee, 2016

Source: City of Milwaukee. Data Source: Milwaukee Water Works

Poisoning Primary Prevention Program. Although the program is limited in scope and only focuses on mitigating lead exposure through paint chips on residential window sills it is, per the city's website, "a nationally recognized, award-winning program working to prevent lead exposure to children and provide comprehensive services to children and families" (City of Milwaukee). The program provides grants to eligible property owners to replace old windows that may contain lead-based paint; as of December 2016, the program has certified 17,785 housing units as "lead-paint safe," although the program only provides subsidies for low-income residents with children living in six of the city's ZIP codes on the North Side: 53206, 53208, 53209, 53210, 53212 and 53216 (City of Milwaukee). The ease with which the city can explicitly connect income level to geography is the direct result of the oft-cited and much-studied persistence of socioeconomic inequality and racial discrimination in 21st century Milwaukee, which has left the city with a housing supply that inequitably distributes lead risk and lead exposure.

Milwaukee's current patterns of segregations are due in no small part to the city's legacy of redlining in the 1930s, and the racially-motivated policies and politics which continue to maintain these patterns of segregation today. Initially, Milwaukee's housing stock and demographic patterns developed for many decades in patterns familiar to many early urban theories: laborers and recent immigrants lived close to the factories in the downtown area. Many eventually moved "up and out" into what can be considered first-ring suburbs, where through ad hoc modifications and renovation projects, homeowners managed to accommodate growing families or supplement their income with rent from tenants (Simon 1996). The suburbanization of Milwaukee was facilitated by subdivision, streetcar extension, and the desires of wealthier middle-class residents to self-segregate from newer, lower status immigrants, 'escaping'

congested urban centers for the more ‘idyllic’ wards on the periphery of the urban core (Simon 1996). During the Great Migration, subsequent waves of African American migrants were confined in their housing options to certain neighborhoods, a racialized effect seen in urban centers across the country as a result of the Home Owners Loan Corporation (HOLC) maps, redlining practices that rated the “desirability” of urban areas for investment opportunities, and the predatory practices of unscrupulous real-estate brokers (Jackson 1985, Coates 2014). While the notion that a city’s built environment will develop unevenly can hardly be considered a novel concept (Harvey 1989; Smith 1984), the initial inequity of Milwaukee’s housing market was further exacerbated by myriad factors: the concentrated segregation it produced; the decline of manufacturing; economic restructuring; White flight; suburbanization; and the recent US housing crisis, to name a few (Bonds, Kenny & Wolfe 2014).

As a result of these historical factors, Milwaukee’s uneven development has contributed to a dramatically differentiated and racialized housing market. Squires et al. (1991) show that in Milwaukee neighborhoods where non-Whites account for 24% or more of the population, almost half of the housing stock was built prior to 1940; for areas where Whites make up 24% or more of the population, almost 70% of the housing stock was built after 1940. As this thesis will explore, the risk associated with the LSLs is not distributed uniformly throughout the city, even if the LSLs themselves were once uniformly dispersed amongst the most central and (contemporaneously) populous districts. Rather, because residential lead exposure comes from paint, soil (as a result of paint dust) and water, patterns of disinvestment means older homes in certain areas of the city have been left with their original — and risky — lead paint and plumbing, posing a significantly higher risk to their inhabitants.

3.7 FLAC: The Freshwater for Life Action Coalition

Following the distribution of the 2016 MWW letter, news of the 70,000 LSLs was minimally publicized, garnering a subdued public reaction; among those who were made aware was Robert Miranda, a longtime Milwaukee community organizer and political strategist. Miranda found the city's response to be insufficient and misleading, by minimizing the dangers posed to residents and the spatial magnitude of the problem. Miranda enlisted other community members to develop an advocacy group, the Freshwater for Life Action Coalition (FLAC), and turned to Drs. Yanna Lambrinidou and Mark Edwards, scientists who had played pivotal roles in the lead organizing efforts in Washington, DC and Flint, respectively, for scientific expertise with which to combat the city's official contentions that the water was safe. Since its 2016 inception, FLAC has devoted its efforts to agitating for legislative change and aggressively disseminating public information in a direct challenge to the city through press releases, press conferences, community events and public protests. From the outset, FLAC's core demand has been consistent, even as the group has adjusted to accommodate shifting political realities: the city must remove all of the lead laterals, and must do so at no cost to homeowners.

In response to increasing public awareness and anxiety, the Common Council established a Water Quality Task Force (WQTF) in July 2016, comprised of members of the Common Council, Department of Public Works, Health Department, the community, and the medical profession. For two years, the WQTF served as both the public face of the city's efforts to remediate the issue and the most readily available platform for community members, local businesses and activists to challenge the city's response to the issue. The WQTF oversaw the unveiling of the City's "Lead Awareness Campaign" (see Section 5.4 for further discussion) and sponsored Ordinance 160742, passed by the Common Council in December 2016. The

ordinance ensures that LSLs will be replaced if they are discovered in the course of regular main replacement work, but does not include plans for expedited replacement, meaning full remediation under the ordinance could take up to 150 years.

3.8 Scandal and visibility

The greatest boon to the group’s organizing may have come in January 2018, when Health Commissioner Bevan Baker abruptly resigned amidst allegations that the Milwaukee Health Department (MHD) had failed to notify thousands of Milwaukee families about their children’s high blood lead levels (Jannene 2018). FLAC’s main challenges have been overcoming Milwaukeeans’ unfamiliarity with the issue of LSLs and their unwillingness to believe there is any danger — an unwillingness, this paper contends, that stems in part from the unique attributes of lead. However, the public scandal in January brought widespread news coverage of Milwaukee’s LSLs, along with unfolding revelations of wrongdoing and mismanagement within the Milwaukee Health Department (MHD). With this coverage came the revelation that Milwaukee’s lead situation might not, in fact, be as under control as city officials had previously led residents to believe; between 2015 and 2017, MHD tested 75,000 children for lead exposure as part of the city’s Lead Poisoning Prevention Program, and although 320 children tested at higher than ‘normal’ or even ‘severe’ lead levels, nearly 120 of the affected families never received the required notification or home visit to remove potential sources of lead exposure. Of the nearly 6,000 children whose blood tested at ‘low’ lead levels, only 1,500 letters were sent to alert the affected families (DeLong & Spencer 2018). News of these failures has mobilized more Milwaukee residents to join with FLAC; more than 75 community members attended a February 14th protest at City to demand change from elected officials, and FLAC’s

list of coalition partners has grown significantly. The coalition now includes groups from across the city: Milwaukee's Democratic Socialists of America (DSA); the Greater Milwaukee Green Party; the Party for Socialism and Liberation; the Interfaith Conference of Greater Milwaukee; the International Socialists Organization; the Wisconsin Poor People's Campaign; the Original Black Panthers of Milwaukee; Wisconsin Industrial Workers of the World, and more.

Baker's departure seems to represent a pivotal moment for the Milwaukee organizers; not only has it brought unprecedented attention to the issue, it has created a unique political opportunity. After the Common Council rejected Mayor Barrett's nominee for Interim Director, former MHD commissioner Paul Nannis, they nominated Patricia McManus, a longtime community advocate and President/CEO of the Black Health Coalition of Wisconsin. For many organizers, McManus represents the possibility of an 'inside man,' an advocate within MHD who will work towards greater transparency and be a potential partner as FLAC pursues legislation to remediate the LSLs. To a certain extent, this political upheaval has created a tipping point in the organizing which is beyond the scope of this paper — it remains to be seen if Baker's departure, increased media coverage and McManus' appointment will together create the conditions for FLAC to succeed in mobilizing residents and holding government accountable. However, I believe that the conditions that led to this point are still worthy of our attention, as they reveal the compromises, challenges and successes a local group of organizers have faced in attempting to make an invisible issue not only visible but motivating through the use of collective-action frames.

4 - METHODOLOGY

In the theoretical framework and background sections, I have identified some important gaps that must be addressed in the unique case of framing Milwaukee's urban lead contamination; specifically, the unacknowledged role of non-humans and the dynamics of risk and responsibility. This research endeavors to ask which framings have been employed by social movement actors in the current case in Milwaukee, and what challenges have they faced. In order to answer these research questions, this study relies on qualitative methods, using a variety of data sources and gathering methods, including qualitative data collected between November 2016 and April 2018 as a participant observer, discourse analysis of FLAC materials and in-depth interviews with organizers. Because the group's framing has necessarily evolved over time to account for changes in the political opportunity structure and the visibility of the group's efforts, these qualitative methods allowed me to not only engage with the breadth of the framings employed over the length of the study, but also to speak with organizers to uncover the intentions and interpretations behind different framings and tactics the group employed. In order to more closely interrogate this study's research questions, which ask how external factors have shaped a LSM's efforts, in-depth interviews and participant observation were necessary to supplement findings drawn from coding analysis, providing insight as to the motivations behind certain framings.

Over the course of a year and half, I attended Water Quality Task Force (WQTF) meetings, community-organized informational events, an activist-organized protest, Milwaukee Common Council meetings, organizer strategizing meetings, and a community information session organized by 16th Street Community Health Centers (hereafter referred to as SSCHC).

My personal observations of interactions between organizers and activists, City employees, elected officials and members of the community contributes greatly to this study's understanding of the discourses and rhetoric employed in the course of the evolution of framing the issue of Milwaukee's lead laterals. As an overt participant-observer of events and meetings, I was often taking notes and recording presentations; in this capacity, I was recognizable as a student researcher, and freely introduced myself as one, which allowed me to both capture the official remarks and engage with other attendees.

In this way, I was able to recruit organizers and activists to participate as potential interviewees, from which a large portion of my research findings were drawn (for a full list of interview participants, see Appendix B). I conducted nine open-ended, semi-structured interviews using a set of questions (see Appendix C) that served as a basis for my conversations; subsequent lines of questioning were drawn determined by interviewees' responses, expertise and interests. I conducted three separate, formal interviews with FLAC founder and spokesperson, Robert Miranda, as well as with two FLAC organizers, two City officials, two community organizers and leaders of two of FLAC's partner organizations. Although all were welcome to participate, interviewees were ultimately identified based on their proximity to the efforts of activists and organizers and their ability to speak authoritatively on behalf of the group they represented. Having regularly attended WQTF and community meetings, it was relatively simple to identify the activists and organizers who were core members of FLAC and FLAC partner organizations efforts and to approach them personally and ask them if they would be willing to participate in my research. Although all interviewees were able to speak on behalf of the group(s) they represented by nature of their position, interviewees were made expressly aware that they were only expected to speak for themselves as individuals, and to reflect their

own personal interpretations of events and actions and were not expected to speak as representatives of a particular group or organization.

Although I conducted formal interviews, both over the phone and in-person, many of the statements made by the persons interviewed for this research were either echoed or expanded upon in the numerous organizing meetings and community events I attended. The analysis in this thesis, therefore, is drawn from a combination of statements made within the context of an interview (for which I am able to provide quotes, which appear through the thesis) and statements made in the context of organizer meetings or community events, for which I rely on my own notes and interview participants' recollections.

For the purposes of this research, I secured IRB approval by describing the scope, significance and data collection methods for the project, and providing sample consent forms and interview questions (Appendix C). Pursuant to my IRB approval, participants were able to consent to having their names included with this research; although several interviewees did consent to having their identities included, I decided to obscure the identities of all participants, by replacing names with job roles or connection to FLAC (e.g. FLAC organizer).

The one notable exception to this is Robert Miranda, who is the founder, lead organizer and spokesperson for FLAC. Miranda — who has consented to the use of his real name — has been the driving force behind FLAC's organizing, and is inseparable from the group's efforts. Indeed, he was referenced by name in nearly every interview I conducted, and I myself interviewed him on three separate occasions over the course of my research. Because of how central and vital Miranda is to FLAC's efforts and to this research, this thesis relies heavily upon these interviews I conducted with him, and press materials he has written for the group. His words appear most frequently in this paper, which is as it should be: to a certain extent, Robert

Miranda is FLAC, and any analysis of FLAC's efforts is an examination of Miranda's efforts. As one organizer put it, "what got us here to begin with when it wasn't an issue to almost anyone was Robert [Miranda]. Someone who cared enough to carry that when no one else was really carrying it. And that is difficult, that takes a special kind of person" (FLAC organizer). For all of these reasons, and given his explicit consent, it was clear that a pseudonym would be insufficient to disguise his identity.

All interviews were recorded, transcribed and inductively coded; after a preliminary re-reading of the transcripts, I identified initial themes and categories within and among each interview, with particular attention given to words or statements indicative of framings, responsibility, culpability, and rationale, of which four main themes emerged: (i) the City of Milwaukee is untrustworthy, or is more concerned with protecting its own interests; (ii) the community is insufficiently aware of the issue; (iii) segregation produces uneven effects; and (iv) the City's current response has been insufficient. After coding the interviews using these themes, several of the obstacles faced by FLAC's organizers did not seem to be particularly well articulated by the existing labels, and so additional categories were created: (v) residents' responsibilities in mitigating risk; and (vi) the uniqueness of lead.

The findings drawn from interviews and participant observation were supplemented by a discourse analysis of publicly available information, including public Facebook posts by FLAC organizers and FLAC-organized Facebook events (the group's primary method of organizing and community outreach); FLAC press releases and interviews, drawn from KINGFISHmke.com (one of FLAC's partners) and other media outlets; and official government documents, such as inter-departmental correspondence and public memorandums. In addition, this research benefited greatly from analysis of data drawn from a rank-order survey conducted by 16th Street

Community Health Centers (SSCHC) at two lead education events held in 2018. The survey was designed and distributed by SSCHC, who compiled the results in a spreadsheet, which they generously shared with me for the purpose of this study. Statistical data was drawn from the City of Milwaukee's public-facing data tool, the 'Online Aldermanic District Statistics.' All other figures in this study, including maps, are publicly-available figures developed by the City of Milwaukee and the Milwaukee Health Department, as noted.

5 - FINDINGS

In the following sections, I will explore FLAC's organizing history and identify some of the external factors that shaped the diagnostic, prognostic and motivational framings the group employed. In doing so, I seek to answer how FLAC organized in the absence of a crisis — or, to put it another way, by what tactics the group managed to bring an otherwise invisible crisis to the fore of Milwaukee's public and political agenda. Although this thesis highlights some of the substantial successes of FLAC's organizing efforts, I also argue that some of the complications of the group's initial framing — focused on both government malfeasance and the presence of a public health crisis — led to an ambiguous and bifurcated response by elected officials, the public, and non-profit organizations. Resources and attention have subsequently been divided between addressing potential long-term solutions, a job which is necessarily relegated to elected officials, and addressing the health risks associated with LSLs, which has largely been left to non-profit organizations and residents. To be clear, this is not an attempt to argue that FLAC's framing has in some way failed to succeed in holding government accountable, or that the group is responsible for the complex and inadequate current municipal response to the LSLs; rather, I argue that several distinctive properties of lead and of Milwaukee's lead laterals directly contribute to perception of the risks associated with LSLs and attendant interpretations of culpability and responsibility.

I begin by revisiting FLAC's earliest and most consistent framing, that Milwaukee's lead laterals posed a compelling public health risk, and the government was intentionally misleading residents as to the extent of the issue. I then explore the effects of the lack of publicly available information, and how this both supported FLAC's diagnostic and motivational frames and

similarly created an opportunity to educate and mobilize residents. The following section explores in detail how LSLs and lead poisoning risks are unevenly distributed throughout Milwaukee; although this is, to a certain extent, an issue that affects all of Milwaukee, it disproportionately affects certain neighborhoods and demographic groups. In this section, I explore the related implications for residents, organizers and elected officials. I follow with an analysis of some of the city's responses to FLAC's organizing, and the ways in which they are not only insufficient to address the magnitude of problem, but further relegate responsibility to residents and non-profit organizations. I conclude with a discussion of non-humans — lead itself — to ask in what ways the unique properties of the laterals contributed to FLAC's framings and organizing efforts or shaped the context within which they sought to mobilize residents.

5.1 Truth Will Out: Diagnostic Framings at FLAC's inception

When Robert Miranda first began sharing information about Milwaukee's lead laterals, he undertook what may be described as a one-man social media campaign to educate the public on the issue of lead laterals, an issue he felt had been intentionally concealed. Reflecting on what initially compelled him to begin organizing, Miranda explains:

I followed what happened in Washington DC, and then I followed what happened in Flint. And then I heard Milwaukee, the way they were talking, and I thought to myself there's something wrong here, when the Commissioner of the Department of Health is interviewed on CBS 58 and he audacitly [sic] says on TV in public 'no lead comes out of the tap water' and I knew that was wrong. So I said, I think I better organize because people are buying this nonsense that our water's completely safe, and I knew that not to be an accurate statement (R. Miranda, personal interview).

Drawing a direct line from two of the most recent fatal and near-fatal widely publicized lead crises in the United States, Flint, MI and Washington, DC, Miranda felt there was enough of a

Table 2 — Elements of FLAC framings

Diagnostic	Prognostic	Motivational
<p>We have 70,000 homes in Milwaukee with lead pipes and there are over 100,000 homes in Wisconsin with lead pipes passing on lead contaminated water. (Miranda, 2016). --- Neither the Mayor nor the Common Council are moving with the urgency that this health crisis deserves (FLAC, 2018a) --- “There has been a deliberate attempt to mislead, misinform, misdirect the public on the issue of lead water in the city of Milwaukee.” (R. Miranda, personal interview) --- The City of Milwaukee cannot be considered the "Freshwater Capitol of the World" or the "Fresh Coast City", if they will not provide lead-free drinking water to the people that live in its own backyard. (Goodson, 2016) --- Mayor Barrett, his bureaucrats and his surrogates should be ashamed of themselves. Years of inactivity and failed policy which should have been established to protect the public health over the past decade has resulted homeowners and residents with half measures [...] (Johnson & Miranda, 2016a)</p>	<p>“Remove the lead pipes. There is no other alternative to eradicating lead in water, it’s just to remove the lead pipes. Our purpose is to push the government to prioritize, to send resources towards removing lead pipes, but before doing that we also have demanded that the mayor and the bureaucracy at city put together a comprehensive strategic plan on how to do this.” (R. Miranda, personal interview) --- Demand: for the City to develop a comprehensive plan for lead removal and mitigation (pipes and paint). This plan must not burden home owners and renters with implementation costs, it must continually provide water filters to affected residences, and must include the complete removal of all lead laterals in the City within a generation. (FLAC, 2018b)</p>	<p>Homeowners have paid enough. Tens of thousands of Milwaukee residents drinking water contaminated by lead lateral pipes has cost this community in failing schools, increased violent crime in our streets and high infant mortality. Enough is enough already! (Johnson & Miranda, 2016b) --- All Mayor Barrett wants to do is give us filters (which they only have 2,000 to provide to over 70,000 homes and that do not eliminate all of the lead from the drinking water) and have homeowners and residents pay part of the lead service line replacement. Homeowners and residents paying for lead service lines replacement? We say no! (Johnson & Miranda, 2016a) --- “Our government hasn’t been very straightforward with us, just like their [Flint’s] government hasn’t been very straightforward with them.” (R. Miranda, personal interview)</p>

Note. Sources cited here are fully listed in the references section unless excerpts are from personal interviews (denoted by quotation marks).

parallel to be concerned that Milwaukeeans were being intentionally misled by their elected officials, and as a result of this misinformation were too unaware of their predicament and its potential dangers to demand any change from their leaders. This first, crucial diagnostic framing — that Milwaukee city government was misrepresenting the truth to its residents — has

remained consistent throughout FLAC's years of organizing, and has played a critical role in developing motivational frames that urge Milwaukeeans to challenge official narratives and educate themselves. In this initial and crucial iteration, Miranda was flexing the classic transformative function of a frame (Snow 2013) by helping to reconstitute the ways in which Milwaukeeans saw both their pipes and their elected officials, and focusing the relationship between the two as a mobilizing grievance. And yet, in this first frame and in FLAC's continued organizing, the emphasis is divided between the harm done to residents by the lead laterals and the harm done to residents by their potential untrustworthy elected officials, with the emphasis weighted towards the latter.

It is worth noting that although the framings employed by FLAC out the outset have been consistent over their years of organizing, these are not the only framings the group could have pursued. For example, although FLAC has identified Milwaukee's city government as solely responsible for remediating the city's lead laterals, the activists could instead have identified property owners and negligent landlords as antagonists. Because lead exposure is so closely tied to the age and quality of housing stock, these actors could wield immense power in mitigating the incidences of lead exposure for many low-income Milwaukeeans. And, in an increasingly neoliberal context that favors market solutions and individuated responsibility, landlords and property owners would perhaps make a more easily obtainable target for FLAC's organizing efforts. However, the group's diagnostic framings have unequivocally held government responsible. This framing seems to recognize a decision on FLAC's part to prioritize their principle of universal removal of the lead pipes over expediency or short-term feasibility, a willingness to focus explicitly on comprehensive remediation and the spatial and political breadth of the issue, rather than on smaller and more achievable goals. (These tensions, between

short-term ‘achievable’ goals and long term ‘comprehensive’ solutions are explored in greater detail in subsequent sections.) The group’s chosen framing also emphasizes universal government responsibility over individualized, neoliberal solutions and the inherent inequalities of access, such as concerns that without effective government oversight, negligent landlords would not be compelled to action (see section 5.4 for more discussion). By choosing to pursue a framing which holds government solely accountable, FLAC therefore committed itself to the principle that “homeowners have paid enough” (Johnson & Miranda, 2016b), advocating on behalf of all affected residents — even those who are financially capable of mitigating the risks posed by lead laterals with no government support —for a comprehensive solution, rather than a piecemeal response by homeowners.

It is helpful to note that, although largely driven by Robert Miranda, FLAC’s mobilization frames are not simply Miranda’s personal interpretations. The concept of “framing” exists in contrast to the psychological concept of “schema,” in that frames do not merely reflect individual attitudes, but rather are reflective of the process of reality construction, or the negotiation of shared meaning amongst multiple actors (Gamson 1992). FLAC, since its earliest inception, has always been a collaborative effort; convinced that the public was being misled, Miranda asked a number of groups to join him in forming a coalition, including the NAACP of Milwaukee, WISDOM (a statewide network of faith communities in Wisconsin), the Black Health Coalition of Wisconsin and a number of local community organizers and activists:

We all came together, we met, I gave my presentation as to what I felt were misleading statements, not totally accurate statement. They, being [of] sound mind, very astute people, researched what I had to say, we came back together, and we formed an alliance coalition (R. Miranda, personal interview).

When the group held their first press conference in March 2016, the motivational framing they had collectively produced was a direct challenge to the City on two counts, disputing their

official stance on a possible public health crisis by “calling attention and questioning the city’s position about our water being totally safe” (R. Miranda, phone interview) and calling into question their political priorities: “the mayor is worried about building his Camelot downtown while residents across the rest of the city are being exposed to lead-contaminated water” (R. Miranda, qtd. in Mendez 2016). Therefore, although the initial framing undoubtedly reflects Miranda’s own “schema,” it similarly reflects the collective efforts of FLAC’s initial coalition members, and their strategic reality construction. This fulfills Benford and Snow’s requirements that acts of framing constitute “an active, processual phenomenon that implies agency and contention at the level of reality construction” (Benford & Snow 2000, 614). By employing a framing that focused the attention of Milwaukee residents on something that appeared not to exist, FLAC challenged both the lack of public information and the government’s equivocal acknowledgment, and sought to explicitly frame the issue as one of government malfeasance, deceit and neglect.

Although it is not unusual for a diagnostic frame to contain multiple elements or foci, we may ask whether this initial framing, which articulated the problem as both a crisis of government malfeasance and a potential public health crisis, created a space for ambiguity in the future construction of and response to both prognostic and motivational framing. In the following months and years, a tension would emerge between organizers and elected officials’ efforts to address both elements of the initial diagnostic framing; when resources were devoted to focusing on government malfeasance, FLAC would find there was insufficient attention paid to how to redress a public health crisis, and vice versa. Recognizing the complex ways in which these two elements are connected has been crucial to much of the organizing in Milwaukee, but once they become articulated as separate issues, they necessitate separate prognostic frames with

attendant solutions and funding demands. In what ways, then, is this diagnostic framing somewhat at odds with itself? Given the bifurcated nature of FLAC's initial framing, there is a reason to be concerned that a prognostic or motivational frame designed to address government malfeasance would be at odds with or compromise the efficacy of prognostic and motivational frames which hold the government exclusively responsible for addressing the health crisis of lead laterals. Further, because the range of possible solutions for any given problem are inextricably tied to — and necessarily determined by — how the problem is named, prognostic and motivational frames and the actions that may result from them are necessarily affected by the diagnostic framing.

The first component of the diagnostic framing, that the city was shirking its responsibilities and masking the seriousness of the threat posed to Milwaukeeans, persistently and effectively positioned FLAC as the truth-tellers at odds with elected officials. This allowed activists to articulate a clear adversary: the hegemonic bureaucracy of city government, eager to cover up its misdeeds. One organizer emphasized the “factions” formed by such a framing:

There's a side that's with the mayor and whatever the mayor's proposing, and I know the mayor's not telling the truth because I know the science. But on the other hand, there's folks out here like FLAC, there's other organizations trying to get the word out (FLAC organizer, personal interview).

Although starkly dramatic, this framing was received rather nonchalantly, even by those Milwaukeeans who might not consider themselves to be particularly radical; as one organizer explained to me, “I don't think that the city is evil, I'm not an anti-government type, but I think if you can cover your backside, you do, and I think there's been plenty of that” (Local organizer, personal interview). The fact this expressly divisive framing was entirely logical for many residents in some ways points as much to pre-existing tensions between citizens and their elected officials as it does to a tacit acknowledgment of the supposed nature of politics; the notion that,

as this same organizer expressed, “people who had a reason for it to look better than it did wanted to say ‘oh it’s fine, it’s not a big deal’ or ‘oh we’ve got it’ or ‘you guys are overreacting’ and lots of that diversionary kind of thing” (Local organizer, personal interview). By focusing explicitly on the perceived deceptions of city government and their unwillingness to remedy (or even recognize) the issue, FLAC was in many ways prescient; the subsequent dismissal of Milwaukee Health Commissioner Bevan Baker would later serve as a motivating event for many Milwaukeeans to take seriously the possibility that FLAC had been vocalizing for months: that not only was there an issue, but that city government had also been complicit in keeping residents uninformed.

For FLAC’s diagnostic framing to be successful, Milwaukeeans would need to believe that elected officials had something to protect — a compelling reason to lie or withhold information. FLAC organizers and other partner organizations have made clear that they feel that the city’s reputation as the ‘Freshwater Capital of the World’ has played a role in its dismissals of FLAC’s early diagnostic framings. As the director of one of FLAC’s partner organizations sees it, the city — and other groups who might stand to benefit from this ‘Freshwater’ reputation — have not done enough to support FLAC’s efforts:

Those ‘freshwater’ people get kind of mad about all this lead talk. You know, we have UWM School of Freshwater Sciences that hasn’t said a peep about the problem! We also have the Medical College of Wisconsin, they’re just sitting on uh, a \$44 million endowment and refuses to get involved in the problem. There are a lot of institutions that just wanna, sort of look the other way ‘cause this is an uncomfortable topic to discuss (Director of FLAC partner organization, phone interview).

Although many professionals within these institutions have spoken out against contaminants in Milwaukee’s water supply, FLAC and other organizers have interpreted a nearly universal lack of institutional support for their campaign. This perspective reinforces any lack of government

transparency as motivated, in part, by a desire to protect the City's reputation as not simply competent, but exceptional in regards to its water technology. As a longtime community advocate put it, "politicians like to look at their legacy, and there's a couple legacies certainly Mayor Barrett wants, and that's one of [them], to have established this whole 'Worldwide Freshwater' piece" (Community advocate, phone interview).

FLAC interprets the city's continual emphasis on the purity of Milwaukee's water supply and the city's water technology as an intentional attempt to misdirect from the issue of the LSLs. From the outset — beginning with the letter sent to 70,000 at-risk residents — elected officials, Milwaukee Water Works (MWW) and the city's Health Department (MHD) have emphatically assured residents that Milwaukee has a superlative water supply in Lake Michigan and state-of-the-art water technology treatment standards:

Our [FLAC's] focus has been always the lead laterals, that's the lead lines that connect from the main to inside the house. The mayor — and he just recently did this again — the way he confuses people is by saying that there is no lead in our water mains. And nobody has ever talked about the water mains, we've never brought up the water mains, it's always been about the lead laterals. And so when people who are not very well versed about these lines, [who] don't understand the issue, when they hear him say that and then they ask around and they look into it, they'll look and see 'yeah, well there is no lead in the main. It's all, yeah it's true.' So they're not really looking into the issue of the lead laterals, which he [Barrett] personally got them to do by his misleading statements like that. (R. Miranda, phone interview)

For residents with little familiarity with the issue as framed by FLAC or the science behind lead poisoning, the city's statements have continued to seem sufficiently credible to mitigate the need for any public outcry or action. FLAC's contention that the city is working to protect its hard-won and lucrative reputation as a global water-technology city, together with a lack of publicly available information, has hindered FLAC's efforts to mobilize the public around a framing of government malfeasance.

Because lateral lines are partially city-owned and partially resident-owned, the emphasis given to the physical location of the “safe” water itself seems to further imply that the issue of lead is located within pipes legally owned by Milwaukee residents, rather than those owned by MWW. In spite of the fact that MWW and the City of Milwaukee are solely responsible for ensuring the safety of the water that physically arrives in a property owner’s home (indeed, EPA testing samples for which MWW is held accountable are collected from residents’ faucets) the physical division of the main line is the means by which the city has sought to renounce its obligation to maintain, thereby enjoining property owners to assume responsibility to remediate the risks. The city purports that it is this last, shortest leg of the water’s journey which makes residents responsible for the relative ‘safety’ of their drinking water, though the resident neither planned, constructed nor maintained any aspect of the system of water delivery.

Only since Bevan Baker’s dismissal and the subsequent disclosures of previously unreleased data have organizers noticed less public resistance to their framing, as events have contradicted Milwaukee’s status as the capable and adept “freshwater capital.” As Robert Miranda explained a month after Baker’s departure, there was a noticeable shift in public perception:

Right now, there is a sense of anger that's starting to permeate around the community. I think that what happened at the Milwaukee Health Department was a major wake-up call for people. You know, people are... three years of not informing people of the lead blood levels... I mean, people don't see that as an accident, they see that as deliberate [...] This is talk that's going on in the community now. And I'm not gonna be one to say ‘no that's not the case,’ I'm gonna be out there saying, you know, you have every right and every reason to believe that (R. Miranda, phone interview).

The scandal at the Health Department dramatically shifted the political opportunity structure for FLAC, drawing attention to the lack of public information and casting aspersions on the government’s trustworthiness. Since the revelations that the government had withheld critical

information about children's blood lead levels, failing to alert thousands of families that their children had tested at 'low' or even 'severe' levels, residents were more willing to accept FLAC's framings and question the city's reputation as a skilled and reliable administrator of public health, the 'Freshwater Capital' of the world. Further, given how much information had been withheld, the scandal called attention to how little information on the issue of LSLs was publicly available.

5.2 A critical lack of awareness

FLAC's early diagnostic framing asserted that not only did Milwaukee have a potential health crisis on its hands, but that elected officials were hindering efforts to designate it as such; critical to both elements of this framing, and to related motivational framings, was the lack of publicly available information. On the one hand, the lack of information supported FLAC's diagnostic framing that government was withholding information to serve its own interests; on the other hand, it also hindered potential mobilization and activation of the public by reinforcing the idea that municipal services were functioning properly. FLAC would continue to struggle against this obstacle until upheavals in government staffing would begin to change the public perception that, as one organizer put it, something about the situation "just doesn't pass a smell test" (FLAC organizer, personal interview). However, this same lack of public information relating to lead laterals and their potential dangers also created an opening for organizers: to stage their own information campaign on these topics and mobilize residents. When Robert Miranda began organizing, he notes that he "didn't take a more conventional organizing that we've seen in the past," and instead used Facebook and other platforms to "invite interest of people and basically give knowledge to them through that venue before I started organizing the

town hall meetings” (R. Miranda, personal interview). By providing information directly to the community and acting as a corrective to the lack of information — or intentional misinformation — provided by public officials, this organizing effort further problematized and politicized the lack of public awareness that necessitates such an informational campaign.

The explicit implication in FLAC’s campaign, that the lack of public awareness is by design, questions not only the veracity of public officials’ statements but also the role these officials may have played in intentionally keeping such a public health crisis from garnering attention. FLAC’s diagnostic and motivational framing around the lack of public information alleges that this was a condition elected officials both benefited from and actively sought to ensure, a calculated effort to keep residents in the dark as to the issue’s very existence. Miranda explained:

In the beginning I saw that it [lack of awareness] prevented people from being concerned at all. I saw that people were not very worried about it because, from the beginning, the Mayor's office, the Health Department and the Milwaukee Water Works was putting out a lot of misinformation, a lot of misleading information, and a lot of assurances that I had to challenge and that I had to dismiss and I had to basically show the public it was all a myth. Everything that they’re putting out there was a myth, and not only a myth but an attempt to misdirect (R. Miranda, phone interview).

FLAC, therefore, set for itself no small feat — to not only educate the public, but also develop compelling enough counter narratives to combat the status quo of city with safe water and a beneficent local government. Even those among FLAC’s members who were less convinced by a framing of government cover-up readily acknowledged that the lack of information was a critical impediment to progress of any kind, and indicative of a different kind of malfeasance: “I think the city... it’s not their fault. I don’t think it’s their fault. I think what’s wrong right now with the city is that they’re not telling people what they should know. And that’s just bad representation” (Director of FLAC partner organization, phone interview).

The depth of public unfamiliarity with the issue, due in no small part to Milwaukee's history of successful lead abatement and water quality control, additionally stemmed from general indifference towards the details of municipal functions in general. Miranda mirthfully recounted one such anecdote:

In 2015, not many people knew we had a Milwaukee Water Works. They thought MMSD [Milwaukee Metropolitan Sewerage District] was the one that supplied their water. People were confused, a lot of people were confused! I mean, I actually had aldermen, I had professionals...I mean, people who are active! Everybody thought MMSD was the agency that provided us water, and I said 'No! That's the one who takes the stuff out!' That's a prime example of the fact that, how the city has failed to really provide the education the public needed to protect itself from lead and water. They don't even have the basic knowledge that there is a Milwaukee Water Works (R. Miranda, phone interview).

In this context, FLAC was doing more than simply raising awareness of the existence and dangers of lead laterals and the government's responsibility for remediation, but rather was problematizing an action so commonplace — turning on the tap — that many residents had never even thought to question the structures and systems responsible for the maintenance of such an everyday need. The status quo of public apathy and disinterest in municipal functionings is precisely what FLAC maintains the city used to its advantage, and actively worked to ensure as awareness of the dangers of lead laterals began to spread. As one organizer put it, "people in this community do not question what their government does. It's a lack of awareness and to be very honest with you, I don't believe they [city government] want the community aware" (FLAC organizer, personal interview). In this way, FLAC explicitly tied the lack of information and public awareness to their diagnostic framings of government malfeasance.

The compounded effect of these obstacles — a city department (MWW) with an established record of municipal efficiency, a lack of information, and public unfamiliarity with the issue — was to create a crisis that was largely invisible to Milwaukee residents, both in their

daily lives and in policy. This raises a question which has critically guided much of this research and FLAC's early efforts: how do you organize in the absence of a visible, recognized crisis? Without a startling government revelation, a noticeable change in water taste or color or any visible and motivating public health emergency, FLAC's motivational and diagnostic framing needed to compel Milwaukeeans to act, or demand action of their elected representatives, in the absence of definitive proof of the spatial or physical extent of risk posed by the lead laterals. In the absence of the perception that a public health crisis exists, how can a nascent social movement persuade victims that they are, in fact, victims? This quandary underlies much of FLAC's early framing and organizing work, which on the one hand leveraged motivational framings whose vocabularies of motive benefited from a lack of public information and government acknowledgement, reinforcing a sense of betrayal and neglect. At the same time, the lack of information and government reassurances served to undermine FLAC's vocabulary of urgency, painting the group as radically out of step with the existing state of Milwaukee's lead abatement programs and water quality control.

One of the main obstacles for FLAC's organizing was overcoming the highly technical language of water science in order to not only reach Milwaukeeans and convince them that the LSLs existed, but to further persuade them that the laterals posed a significant and mobilizing risk to their safety. Miranda is pragmatic about the limitations of FLAC's organizing and education efforts, which managed to reach many, but may not have gone far enough:

My concern is that they're [Milwaukeeans] just aware of it, they really are not very versed on the issue. The issue of lead in water is very complicated and can be difficult to follow when you're dealing with experts, or dealing with people who are masters at the language, and masters of the issue, and can easily dismiss people who are not very well versed on not only the chemistry of what's going with the water treatment, but also the impacts that is made to families. (R. Miranda, phone interview).

As Miranda notes, the issue of lead in water is complicated; the scientific knowledge required to debunk the City's narrative of safe water and safe water treatment set a very high barrier to entry for many Milwaukeeans who were inclined to trust government experts. Unfamiliarity with the complex and inscrutable scientific evidence presented by city officials serves as a compelling reason to believe the (often persuasive) narratives provided,

Miranda knew that FLAC would need to fight facts with facts in order to combat official narratives of technical knowledge and scientific expertise. As he'd seen during Alderman Joe Davis' 2016 campaign for mayor, it was impossible to fight back simply by calling attention to the issue:

When Alderman Davis was running for mayor, he was telling people at the time that there is contamination and the water was being poisoned by lead, but the mayor was refuting him and telling him and telling the public that that's not true, and that they have the effective corrosion control treatment measures. And so, you know, he was able to defeat Alderman Davis' message because he, Alderman Davis, didn't have the kind of information that he needed in order to counter what the message the Mayor was putting out there. And the lesson for me when I saw what happened there, and that's why I took more of a time to research and more of a time to understand the issue, because I knew what kind of response campaign the Mayor was going to come back with. and when I began organizing, and they began trying to dismiss what I was saying, I already had the playbook, and I was basically responding to them, showing where they're wrong. (R. Miranda, phone interview).

As Robert Miranda and FLAC attempted to share information with the public, they relied on lead experts, such as Drs. Marc Edwards and Yanna Lambrinidou, to add scientific certainty to FLAC's framings. Having learned from a campaign that did not manage to contradict the city's official narrative of municipal competence and technical expertise, FLAC fought back by attempting to arm themselves and the public with similar expertise, challenging the city's hegemonic use of knowledge.

As previously noted, willingness to believe city narratives also stemmed from the simple — and, FLAC contends, intentional — misconstruing of the location of the risk, as when Mayor Barrett and other city officials would frequently refer to the safety and purity of Milwaukee’s water supply and of the city’s water mains. For FLAC, the ease with which residents were able to be misdirected and mollified was directly connected to the lack of publicly available information and the specific, proprietary knowledge required to understand the risks posed by LSLs. As an organizer put it, “folks living in those [affected] zip codes don’t know what’s going on. They have no perception” (FLAC organizer, personal interview). This quote highlights an additional nuance, problematizing not only Milwaukeeans’ inclination to trust their government when it came to their drinking water, but also the larger systemic forces driving apathy — forces which disproportionately affect certain communities that bear the undue burden of many political, social and environmental injustices.

5.3 The uneven effects of place

Although the distribution of Milwaukee’s original LSLs does not correspond to 20th century patterns of racial segregation, the spatiality of lead-related health effects does. City-developed maps of the laterals paint a picture of a largely uniform spatiality, with laterals distributed throughout thirteen of the city’s fifteen aldermanic districts (Figure 2, Table 4). However, 2014 city-developed maps of the density and distribution of lead poisoning in Milwaukee (Figure 4) reveal that, although lead laterals may have initially been evenly distributed across the city, the risk associated with lead has not been similarly equally dispersed. In fact, the density map more closely resembles patterns of demographic distribution throughout the city because the majority of sources of lead exposure are residential — lead-based paint and

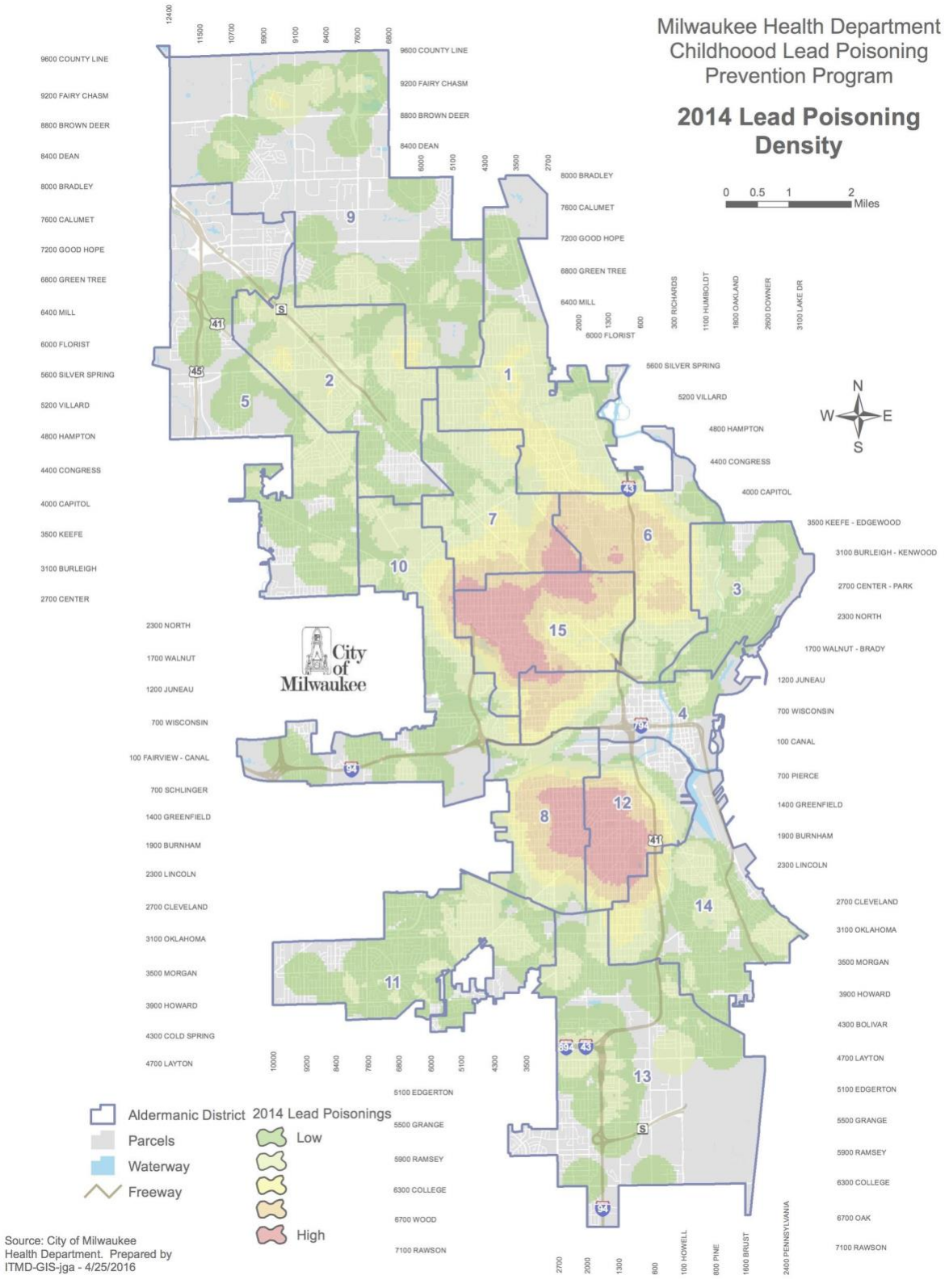


Figure 4 — Lead Poisoning Density in the City of Milwaukee, 2014

Source: City of Milwaukee Health Department

dust, soil contamination and LSLs — making any map of lead poisoning density also a map of the quality of housing stock in the city. Given our knowledge of the historic and persistent patterns of differential investments into Milwaukee's segregated housing market (see Heynen et al 2006), it is unsurprising to see that although the LSLs may be equally dispersed, the risks associated with lead exposure are not. Indeed, the systems which preserve and reproduce the social, political and economic unevenness of Milwaukee's urban spaces ensure that the risks will be most acute in those areas most overlooked by investment and policy.

The age of housing stock is currently the single determinant of whether a residence is at risk of having lead laterals. City estimates for LSL distribution are currently based on which houses were built prior to 1962, the year the city stopped using lead in municipal projects, meaning older homes are intrinsically 'riskier.' However, although the age of structure might be the sole determinant for mapping LSLs, it is not the sole determinant for risk. Older houses in more affluent neighborhoods of the city, while technically 'at-risk' by virtue of the age of the housing stock, are more likely to have benefitted from maintenance incentives and investments by higher-income property owners, mitigating the risk of exposure to any of the original lead paint or pipes in the home. On the other hand, the uneven effects of racialized housing practices and policies, unscrupulous landlords, and decades of neglect means that older housing stock in certain areas of the city will bear a significantly higher chance of containing decades-old lead paint, lead plumbing, lead-contaminated soil, and the original lead laterals the home was built with — all of the primary methods of lead exposure. Put another way, the presumed spatiality of the LSLs does not make clear the connection between lead and segregation in Milwaukee; only when we overlay the spatiality of risk for lead poisoning do we reveal the connections between race, poverty, housing and lead.

Implications for framing: a city-wide issue

As these maps show, the presence of lead laterals does not necessarily correspond to risk for every neighborhood, posing a unique quandary for FLAC's organizing. It is not improbable that some might look at the lead poisoning density maps and question FLAC's foundational notion that LSLs pose a risk, given that the risk does not map uniformly to LSL distribution. In spite of this, FLAC vehemently maintains that all lead pipes pose a risk, repeatedly emphasizing the geographic extent of the issue and rejecting the notion that the lead laterals are a spatially modest and politically manageable issue. The dramatic number of Milwaukee properties potentially affected by lead laterals — 70,000 — is repeatedly employed by activists, organizers and community members as part of both diagnostic and motivational frames, a means of articulating the scale and gravity of the situation given the overwhelming preponderance of Milwaukeeans who were considered to be at-risk. As to why risk, effect and activism are not uniformly distributed throughout the city, organizers argue that certain communities are not only under-informed and inclined to trust their government, but are predisposed to mitigate some of the risks:

You look at Zielinski's district [14], which is number one in pipes, and Murphy's district [10] which is number two. So you look at what is going on there and you say okay, you know, what is it that has not galvanized the kind of response you would think that those two districts, which have a better standing economically and other political issues than, for example, Russell Stamper's district [15], what is causing a delay there? And again, I strongly believe it's because they [in affluent communities] are not informed. They are not informed... they have put their trust in government and the Health Department, they believe that their water's safe, they hear all these good things about Milwaukee water, and they believe it [...] People say to me, well why aren't their blood levels higher than areas where there are more [LSLs] and you see high blood levels. Well, you know, in some cases, probably because they are and have been using filters. It's hard to say what's going on. But you know, what is certain is that, and I know this is something that I've asked many over at City Hall, what is certain is that no one can guarantee that water flowing through these lead pipes is safe. And I always

ask that, can you guarantee it? Nobody can (R. Miranda, phone interview).

Because they maintain that every lead pipe is a danger to Milwaukee citizens, here, then is part of FLAC's most difficult challenge; before the group can make LSL remediation a politically viable mission, they must first make visible to a large number of Milwaukeeans the latent, invisible risk lying beneath their homes, which on one city map places them 'at-risk' yet on another finds them to be risk-free. While this particular hurdle for organizers is dealt with in greater detail in a subsequent section (see Section 5.5), it is helpful here to demonstrate that FLAC maintains this is an issue which affects almost every Milwaukee neighborhood and resident, in spite of lead poisoning data, in spite of residents' unwillingness to believe, and in spite of lifestyle choices — such as filters — which may have inadvertently mitigated its most dangerous effects. Or, as one FLAC organizer succinctly put it: “we all gotta drink the water” (FLAC organizer, personal interview).

Indeed, this universal framing seems to have purchase, as one of the neighborhoods most affected by LSLs but least afflicted by lead poisoning has taken the political lead in the fight for government remediation. Alderman Tony Zielinski represents the disproportionately White 14th District, which covers the Bay View neighborhood. Although Zielinski's constituents are predominantly White, highly-educated and employed, their district also has the highest number of lead laterals in the city: 9,452, or 13.8% of all of the city's LSLs (see Table 3, 4). Since news of the laterals — and their distribution — became public, Zielinski has worked with community organizers and lobbyists to present legislation to the Common Council. For FLAC, this means that a city-wide framing has political viability and a potentially widespread constituency. As NAACP president Fred Royal noted, “not all of the City's problems occur in the 53206,” and this is therefore not an issue which only affected communities of color, but rather “a citywide issue

Table 3 — Residential Lead Service Lines by Aldermanic District

Ald. District	Number of Properties with LSLs	Percent of Residential District Properties with LSLs	Percent of Citywide LSL Residential Properties
1	4,747	49.2%	7.0%
2	7	0.1%	0.01%
3	5,104	94.3%	7.5%
4	1,315	82.0%	1.9%
5	1,036	9.7%	1.5%
6	7,243	90.4%	10.6%
7	8,139	74.9%	11.9%
8	6,361	96.9%	9.3%
9	0	0.0%	0.0%
10	9,166	83.0%	13.4%
11	1,627	13.8%	2.4%
12	5,585	93.1%	8.2%
13	2,413	23.8%	3.5%
14	9,452	85.7%	13.8%
15	6,089	78.5%	8.9%
	68,284	54.2%	100.0%

Source: Milwaukee Department of Administration Budget and Management Division, 2016

that needs to be addressed” (qtd. in Deprey 2017). If neighborhoods who bear the burden of LSLs without the equivalent risks of lead poisoning are willing to join with organizers and demand government action, there is a possibility that every one of the 70,000 affected residences is a potential site of mobilization for FLAC’s LSM.

Implications for framing: a localized issue

A side-by-side comparison of LSL distribution versus lead poisoning in three of Milwaukee’s aldermanic districts (Figure 5) makes clear that for LSLs to cause lead poisoning,

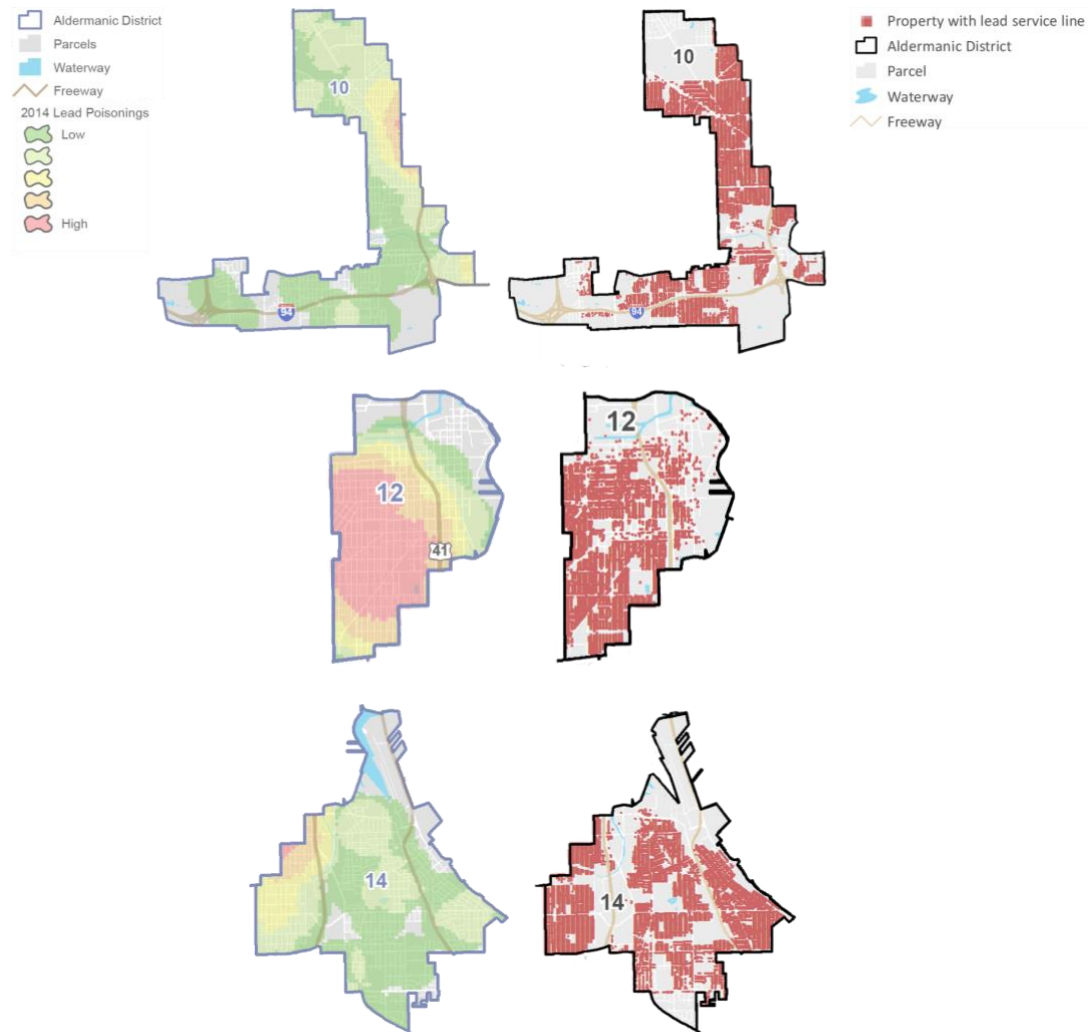


Figure 5 — Lead Poisoning Density vs. Lateral Distribution in Ald. Districts 10, 12 & 14
 Source: City of Milwaukee Health Department, Milwaukee Water Works

the risks of the laterals must be compounded by other effects. The density of lead poisoning is unmistakably more critical in district 12, which, in spite of having the lowest number of LSLs of all three districts (5,585 laterals, as compared to 9,166 in district 10 and 9,452 in district 14) has the highest proportion of LSLs: those 5,585 laterals represent 93.1% of all residential properties in district 12. The demographics of the districts are also significant here (Table 4); not only is district 12 the only majority non-White of the three districts represented above, it has a significantly lower average residential value and more than double the number of vacant

Table 4 — Demographic Information and LSL share by Aldermanic District

	District 10 Ald. Michael Murphy	District 12 Ald. José Pérez	District 14 Ald. Tony Zielinski
Total Population	39,980	39,808	38,512
% Non-Hispanic White	54.07%	14.56%	63.49%
% Black	32.25%	9.29%	3.1%
% Asian	2.54%	1.74%	1.18%
% Hispanic	7.35%	71.87%	29.0%
Total Households	17,148	11,860	16,310
Total Properties	12,590	8,319	12,636
Avg. Residential Value	\$129,139	\$83,516	\$156,167
% Vacant	1.61%	4.09%	2.07%
No. of Lead Laterals	9,166	5,585	9,452
% of District Properties	83.0%	93.1%	85.7%
% of Citywide LSLs	13.4%	8.2%	13.8%

Source: City of Milwaukee. Data Source: Online Aldermanic District Statistics

properties. Therefore, alongside an expansive ‘city-wide’ framing, organizers simultaneously sought to emphasize the locally specific patterns of lateral distribution, highlighting the disproportionate effects (physical, financial, political) of the laterals upon certain of Milwaukee’s lower-income, predominantly-minority neighborhoods.

Especially in the poorer communities [...] people just don’t have insurance. People see that [remediation measures] as a cost that they just can’t afford. And so for them it’s like, you know, I could spend money to deal with this matter or I won’t have any money to buy groceries or I won’t have any money to pay for the light bill. And so you know, it’s a matter of choices here. And you know, so this is where the government’s gotta come in and say we’re gonna pay for these pipes, we’re gonna remove all this stuff (R. Miranda, phone interview).

As a result of these realities, FLAC efforts have been focused predominantly on organizing in low-income neighborhoods on the North side of Milwaukee, “focusing on really trying to provide information to those communities and our focus is make sure that the government does what it can to remove the pipes in those areas without any cost to them” (R. Miranda, phone interview).

If we accept that the uneven nature of the segregated city will be reproduced in the density of lead poisoning, there are necessary implications for how the issue of lead laterals will be framed: who among the most affected are the potential constituents of any nascent social movement? There is a range of possible framings that we might expect to encounter, including environmental justice issue that disproportionately affects poor neighborhoods of color, whose residents are already burdened with other sources of lead exposure. If this an issue that ‘belongs’ to certain areas of the city, remediation would be contingent upon certain elected officials acting on behalf of their affected constituents, thereby providing political cover to other elected officials whose constituents have LSLs but have not felt the risks of LSLs.

Political implications of place- and scale-frames

Early diagnostic framing by FLAC and other community members reveal this tension of scale in their articulations of grievances, between the locally specific effects of the laterals and their spatially diverse distribution. These inherent tensions are reproduced in the diagnostic and prognostic framing — who, then, is responsible, and what should the solutions look like? Is this an issue that requires coalition-building across all neighborhoods and their representatives? Is it therefore one that holds all elected officials equally responsible for remediation? Or it is a locally specific issue, for which certain amongst the City’s representatives should be held primarily accountable, and others might be able to escape notice? Further, what are the political realities of compelling municipal action — as many local organizers bitterly acknowledge, this is not an issue that elected officials seem eager to sign on to:

I wouldn’t expect much out of local government. It took a disaster declaration in Flint, and like a whole bunch of resources from the state and the feds, then. We don’t have any resources, and we don’t have a disaster. I just don’t see anyone from the Health Department or the Mayor’s office, or for that matter the Common

Council wanting to like, do something to change the situation (Director of FLAC partner organization, phone interview).

The political unattractiveness of this ostensibly city-wide issue coupled with its uneven effects present a major obstacle for FLAC's efforts. On the one hand, the group could endeavor to persuade all Milwaukeeans to call on their elected officials and rely on political coalition-building to develop a comprehensive solution, an unlikely outcome given the demonstrated unwillingness of politicians to act in absence of a crisis. Alternatively, FLAC could continue its focused organizing efforts, so as to rally the elected officials responsible for the areas most disproportionately affected by lead poisoning. By speaking to (and for) different constituencies, these widely disparate strategies would rely on fundamentally different political opportunity structures and would each pose a set of distinct challenges and advantages for the group.

Paradoxically, the most vocal elected official, Alderman Zielinski, has been one whose constituents have the most LSLs but among the lowest cases of lead poisoning; political cover, in this case, is afforded to those aldermen whose constituents are too disenfranchised to compel their representatives to action. LSM activists are vociferous in assigning this discrepancy in action as representative of an unwillingness to take on unpopular issues. This unwillingness, in turn, originates from the political opportunity structures of Milwaukee, with a political and demographic context that does not impel leaders to action:

The likelihood of these people [elected officials] doing just about anything on anything progressive is very small to me. [...] If we want to fix all these things, they have to go, and people have to stop looking at them as like, installations in our City Hall. They're just people that can go. Like I said, people in Milwaukee get used to how it is, they also get used to their poor leaders and don't envision that there could be another options out there. (FLAC organizer, personal interview)

The pugnacious efforts of Alderman Zielinski as contrasted with the efforts of some of his fellow aldermen has come to be seen as demonstrative of the effects of the presumed political cover the

uneven risk of LSLs can provide elected officials. Zielinski's efforts (District 14) stand in stark contrast to those of Aldermen Murphy (District 10) and Pérez (District 12), who represent districts with the second highest number of laterals and the highest number of cases of lead poisoning, respectively. And yet, these aldermen have been remarkably tight-lipped on the issue, and have expressed an unwillingness to partner or meet with FLAC and other activists in support of remediation efforts or publicly acknowledge the gravity of the problem.

In a sense, FLAC is trying to leverage the city-wide scale of the issue to remedy concentrated effects. The group's multi-scalar framing relies on the political opportunity posed by the dramatically widespread dispersal of the LSLs as a motivational framing to ensure government resources are brought to the areas that are disproportionately affected by lead exposure and routinely underserved by their elected officials. What, then, are the implications of multiple iterations of diagnostic and prognostic framings — either city-wide or localized? How might these multiscalar frames alter the group's potential activism, resource mobilization, and remediation? As the last few years have shown, municipal responses to these two framings have the effect of working against one another; responses have either catered weakly to FLAC's city-wide framing but proved insufficient to address the magnitude of the issue, or have attempted to address the unevenness of lead risk by making residents more responsible for personally mitigating those risks. This runs directly contrary to FLAC's framings: not only do these municipal responses fail to adequately address the spatial comprehensiveness of LSLs, but they re-burden those residents who are most affected by lead exposure with the added responsibility of employing mitigation strategies. A closer examination of these municipal responses will help to illuminate these tensions in action.

5.4 Insufficient municipal responses and the individuation of risk

Although the City has responded to some of FLAC’s prognostic framings with interim solutions, they have been insufficient to address the issue and have effectively shifted responsibility for mitigating LSL-related risks upon Milwaukee residents, an individuation of risk for which FLAC’s framing has had to adapt. In lieu of legislative solutions for government action, the city has instead proposed solutions which are stop-gap measures that place an additional financial, emotional and physical burden upon residents. These solutions suggest that residents must assume responsibility for their own health outcomes by taking the following measures: purchasing and maintaining lead-certified water filters; seeking additional lead testing for children under the age of three; and flushing the water in their taps for three minutes every morning, to remove any stagnant water and potential lead particles. Not only do these solutions place responsibility on residents instead of government, where FLAC contends it ultimately rests, but they also pose a problem for FLAC’s mission of full removal of the lead laterals because they are interim measures rather than comprehensive solutions, effectively shifting the political opportunity structure for organizers. If, in fact, interim measures are able to effectively manage the crisis by mitigating immediate risks for Milwaukee residents, they may have the perverse effect of undermining FLAC’s political opportunity by relieving the pressure on government to pursue comprehensive, long-term solutions.

Water Filters

One of the City’s most significant responses to date — a free filter distribution program — has still been underfunded and insufficient to address the magnitude of the problem. This municipal failing has added fuel to FLAC’s framing of an intentionally unresponsive City

government. The November 2016 filter distribution program was managed in partnership with Sixteenth Street Community Health Centers (SSCHC). However, the demand far outstripped the City's resources; in spite of having initially alerted more than 70,000 homeowners that their property was at risk as a result of lead laterals, the City only procured 2,000 filters for distribution, or enough for less than three percent of affected residences (Bence 2016). In fact, even the Mayor's promise of 2,000 filters — already a quantity insufficient for the needs of residents — was an overestimation of what the city could procure; the filters were not purchased with municipal funds, but with \$90,000 raised by The United Way of Greater Milwaukee & Waukesha County, which was only sufficient to acquire 1,725 filters. From the outset, critics were vocal about the inadequacy of the filter program, and the City's inability to fully fund filter distribution without seeking outside financing, contrasting it with other big-budget projects the City had successfully undertaken:

Government needs to move on this like they move on stadiums. Like, if they want to build Miller Park, if they want to build the Bucks stadium, these guys move fast. You know, they have no problem finding hundreds and hundreds of millions of dollars to do those kind of things, but when it comes to doing something that is more of a related to the needs of people, it just seems like they want to drag their feet. (R. Miranda, phone interview)

Criticisms such as these are premised upon a public perception of the City of Milwaukee as continuously and intentionally misplacing its priorities, more interested in funding flashy downtown projects than a meagre filter distribution program, a perception upon which much of FLAC's diagnostic and motivational framing rests. For Milwaukee residents, expensive public projects like the Bucks Stadium, Miller Park and the streetcar ("The Hop") serve as visible reminders of the City's ability to "move fast," as Robert Miranda puts it, for certain projects. A stark contrast to the pace at which the City has responded to FLAC's organizing, these projects serve to highlight the inadequacy of the City's response to LSL remediation. This sentiment is

not restricted to activists and organizers; at a City Council meeting, Alderman Borkowski noted that “if you can find money for a streetcar, if you can find money for a Bucks Arena” then there was reason to believe “where there's a will there's a way” to find money for a more comprehensive municipal response to LSLs (Milwaukee City Council, December 13, 2015).

Anger over the City’s funding priorities was compounded by the inadequacy of the filter distribution program. Although SSCHC, the City’s non-profit partner organization for the program, organized two weekday evening events on the South Side of Milwaukee in November of 2016 and distributed 800 filters, the events were ‘first come first serve,’ and supplies at one event ran out in less than an hour. Over one hundred residents optimistically left their phone numbers to be alerted in case more filters became available in the following calendar year, 2017 (WUWM, September 12, 2017). For North Side residents, distribution was only available through the office of the Social Development Commission, which operates during regular business hours from 8 a.m. - 5 p.m. on weekdays, a considerable inconvenience for those Milwaukeeans who are required to be at their own place of work during those hours. A further limitation for residents are the stipulations for filter eligibility: only households with children under 6 or with pregnant or breastfeeding women may receive a free water filter, and all subsequent replacement filtration cartridges (which must be replaced every three months in order to be maximally effective) are to be purchased at residents’ own expense. Although FLAC agrees that filters provide the best immediate protection for residents with LSLs, the group has largely dismissed the utility of the filter distribution program, instead seeing it as evidence of the magnitude of the issue and the City’s inability — or unwillingness — to sufficiently respond. As one FLAC organizer put it, “the way that Milwaukee is looking at this issue, [it’s] like you're putting a band aid on a bullet to the heart” (FLAC organizer, personal interview).

The limitations and inconsistencies of the filter program have fundamentally shifted the political opportunity structure by making residents responsible for ensuring their own health outcomes, effectively relieving government of its obligation to protect residents' health. For FLAC, this means that not only has the calculus for potential solutions shifted, but emphasis has been refocused on a solution that is not financially realistic for all Milwaukeeans. In this altered political opportunity structure, where filters are the best solution currently available, some now maintain that it is residents' responsibility to 'make good decisions' and get one, in spite of how the financial burden might differentially affect residents:

When it comes to like, you know, the filtering issue and how much a filter product costs, and you know you say, well, I know piles of poor people who can't afford a filter....I would argue that if they knew the risk they would make good decisions, and lots of people would buy their own filters. (Director of FLAC partner organization, phone interview)

The idea that residents who 'know best' will assume responsibility for their health and purchase a filter mistakenly presumes that all Milwaukee residents are uniformly able to afford and maintain a water filter. Not only that, it suggests that residents who do not buy a filter are doing so because they are either ignorant of the risk or indifferent to the outcome — a sweeping generalization which disregards the real, everyday choices faced by those living at or below the poverty line. As Robert Miranda put it, "a lot more people are apt to sacrifice their health to have heat in the home" (R. Miranda, personal interview), a grim reality that underscores FLAC's emphatic prognostic framing: government must be held solely responsible for uniformly removing the sources of lead exposure, because choosing health is not a luxury every Milwaukee resident enjoys.

Ordinance 160742

The most ambitious legislative proposal for remediation, Ordinance 160742, is similarly viewed by activists as a meagre measure with too long a timeframe, leaving Milwaukeeans vulnerable in the intervening years. The ordinance, passed in December 2016, is a purported solution to begin addressing the LSLs. It ensures that if an LSL is discovered in the course of Milwaukee Water Works' regular main replacement work, the City will replace its portion of the lateral — and mandates that the homeowner do the same, within 10 days. Because many homeowners might be unable to pay for a costly emergency project on such short notice, the ordinance proposed a cost-share plan, whereby the city would assume two-thirds of the homeowner's cost, with a maximum cost to the homeowner of \$1,600 (which can be paid off over the course of ten years). Although activists celebrated the passage of legislation, FLAC took grave issue with the precedent the ordinance established: that residents are responsible for their LSLs, and for any associated risks or costs.

I am pleased that the Common Council and the bureaucrats at the City are moving on this. I am disappointed that the legislation did pass because, again, I just believe wholeheartedly that the taxpayer, the property owner, the homeowner should not be paying one penny of any shared cost, I don't care if it's \$1,600, \$800, they shouldn't be paying one penny (R. Miranda, phone interview).

The ordinance was received with horror by FLAC and other community advocates, who recall being “stunned” that low-income residents' inability to pay for this construction would have draconian consequences — in order to ensure that residents cooperate with these replacements in a timely way, the ordinance included provisions by which the city could compel homeowners to cooperate, from issuing fines to shutting off the water supply of non-compliant homeowners.

Additionally, the ordinance did not necessarily signal a departure from MWW's business as usual, as replacements would only happen as they coincide with existing, scheduled work and

infrastructure projects. At best, the ordinance relies upon luck, building efficiencies into MWW's existing main replacement program and addressing lead service lines only as they are discovered in the course of routine work. A former budget specialist for the city explained:

We'll still be doing [water main] replacements all this time. You know, presumably. So you know, it may be that we'll get lucky, and some of the water mains we replace are ones that otherwise are busted, you know...but you know, when you're talking about 60,000 [sic] lead service lines, they could be scattered all over. (Milwaukee Budget & Management specialist, phone interview)

Any plans to accelerate main replacement (and, by extension, LSLs) were speculative, and even a best-case scenario would only include an additional 300-500 planned replacements, according to city budgeting specialists. Therefore, even an 'aggressively' scaled-up version of the ordinance would not present a full solution for nearly 150 years, the length of time required to replace all 70,000 LSLs at the city's proposed pace of work, an untenable solution for organizers and residents. Although FLAC has consistently held government solely responsible for a comprehensive municipal solution for remediation, due to the limitations of both City resources and political will organizers have had to balance this with a pragmatism about the need for immediate, interim solutions, a further individuation of risk that focuses on how residents can protect themselves until a more comprehensive solution can be achieved.

“Lead-Safe Milwaukee”

Another municipal measure which shifted focus from the lead laterals to individual behavior was the City's lead awareness campaign, which debuted in early 2017. The media campaign, “Lead-Safe Milwaukee” (Figure 6) was comprised of bus ads, a website and brochures distributed with water bills. The cartoon campaign was in Mayor Barrett's words, “a very friendly reminder to parents to do what they can to make sure their kids are safe” (WUWM,



Figure 6 — 2016 Lead-Safe Milwaukee Campaign, Bus Shelter Ad

Source: LeadSafeMKE.org

September 12, 2017). Many activists dismissed this “friendly reminder” as too mollifying, placing “safe water” in the context of “safe paint,” “safe kids,” instead of drawing attention to the dangers posed by LSLs, which organizers deemed to be the public health crisis at hand. Additionally, activists argued that the campaign placed the burden of responsibility upon residents and parents for the health of their homes and their children, informing residents of the steps they should already be taking to keep their families safe and reinforcing the idea of Milwaukee as a “Lead-Safe” city, per the campaign’s own title. Brenda Coley, FLAC member and the co-executive director of Milwaukee Water Commons, saw the campaign as evidence of the city’s priorities, noting “I don’t think they’ve [the City] been much interested in letting the public know in a concise clear way, what the issue is” (WUWM, September 12, 2017). This criticism seems to echo FLAC’s contention that the city’s response is not incidentally insufficient, but rather is rooted — for a host of pernicious reasons — in an unwillingness to respond sufficiently.

Taken together, these municipal efforts have either directed Milwaukee residents to assume more personal responsibility for mitigating the risks posed by the LSLs, or (as was the case with the limited supply of filters) left them with little choice but to find an alternate

solution. At a North Side community event organized by FLAC in November 2016, residents repeatedly asked panelists what measures they could take to protect themselves and their families in the absence of government action. FLAC's prognostic and motivational framings have had to account for this delegation of responsibility, placing emphasis on ways residents can help themselves in addition to lobbying for government-funded solutions. This poses a predicament for FLAC's framing and its efforts to organize residents, essentially dividing the issue of the LSLs into two separate crises: on the one hand, an immediate danger posed to the public, to be managed in the short term; on the other hand a larger, more complex crisis, for which comprehensive solutions must be sought. If interim solutions are successful in managing the short-term crisis, any immediate risk posed to residents will be minimized or eliminated. Paradoxically, a successfully-managed crisis — for as long as residents are willing to partake in short-term measures — alleviates some of the urgency for politicians to devise longer-term, more expensive and politically arduous solutions. Miranda maintains that FLAC's mission has been clear from the outset: "Remove the lead pipes, there is no other alternative to eradicating lead in water, it's just to remove the lead pipes. And that's our purpose, is to push the government to prioritize, to send resources towards removing lead pipes" (R. Miranda, phone interview). If the crisis is being effectively managed in the short term, mitigating — for those residents who can afford these measures — any risk of lead poisoning, what impetus remains to compel government to search for a long-term fix to remove any potential source of lead exposure?

Even some of FLAC's organizers seem to recognize these as two separate crises: one to be managed in the short-term, and one that demands comprehensive government action. In an interview, one FLAC organizer mentioned that being able to afford a filter relieved him of any immediate fears about the public health crisis: "for some people like me, I don't have kids, I can

afford a filter, I can handle all that...as far as like, a personal risk to my health, right now I don't feel it is. [...] Like I already said, I can take care of the health risk on my own” (FLAC organizer, personal interview). In this calculus, providing residents with interim solutions effectively bisects their prognostic frames into one set of immediate actions for residents’ protections, and a separate set of long-term actions for government. This duality further undermines a framing which holds government solely responsible, given that the majority of interim solutions — flushing, childhood testing, filtering (both the distribution and purchasing subsequent cartridge replacements) — will be undertaken by residents, health care providers and local organizations. Further, these ‘interim solutions’ may turn out to be anything but interim, if — as Ordinance 160742 suggests — full remediation may take upwards of 30 years. If interim solutions prove capable of reducing the health risks to acceptable levels for another three decades, FLAC may find itself demanding that the government respond to a public health crisis which no longer exists.

Reading Survey Data: Perceptions of Responsibility and Stop-gap Strategies

This tension between short-term and long-term solutions is already evident in the way many residents understand the issue of LSLs, as can be seen in analysis of a survey conducted by 16th Street Community Health Centers (SSCHC) at two 2018 lead education events. The data from these surveys reveals that while residents hold government primarily responsible, aligning with FLAC’s demands for full remediation, residents are more likely to emphasize the importance of short-term strategies to mitigate the effects of lead, rather than remove the risk entirely. The rank ordered survey was distributed as residents arrived at each event, and asked respondents to rank a list of possible remediation strategies (Figure 8), and the groups who had

Question: In your opinion, which of these groups have the most responsibility in addressing lead poisoning? Please rank (1 to 5) in order of importance, with 1 being the most important, and 5 the least important. Results below reflect pre- and post-event survey responses.

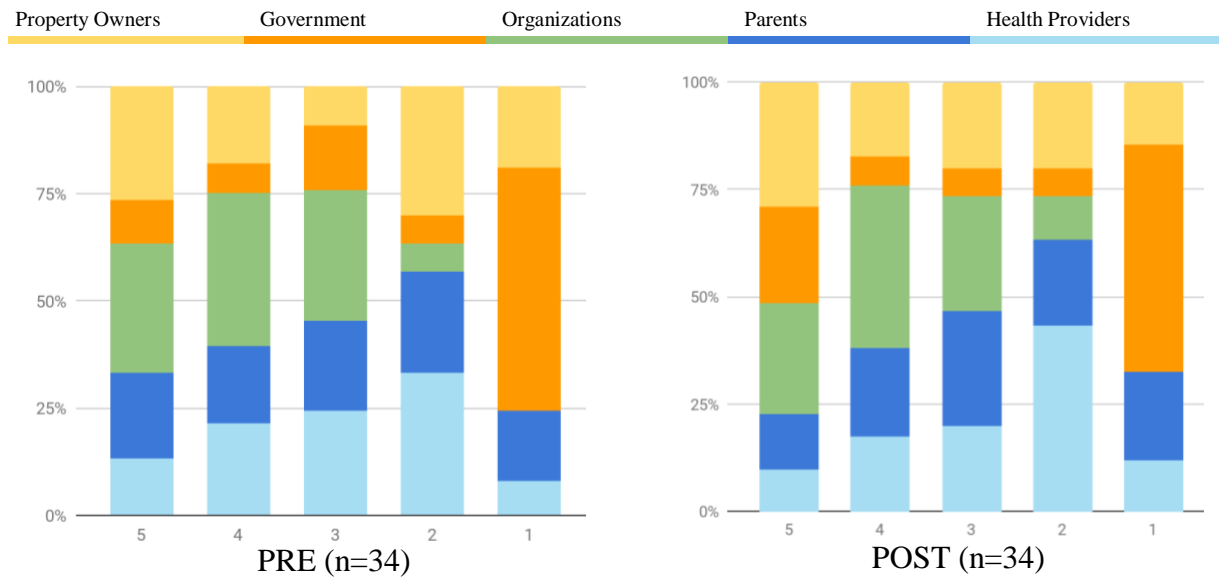


Figure 7 — 16th Street Survey Responses (Responsibility)

Data Source: 16th Street Community Health Center

the most responsibility in addressing lead poisoning (Figure 7). The survey was re-administered at the conclusion of the session, after residents had heard from a number of health professionals, city representatives and lead abatement specialists, to see if the information provided had changed residents’ perceptions. Although the sessions did not reveal a notable shift in respondents rankings (n=34), it did demonstrate that residents overwhelmingly held government responsible for addressing lead poisoning: 56.8% of respondents ranked government number 1 in pre-surveys, and 52.9% ranked government number 1 in post-surveys (Figure 7).

Respondents did not demonstrate a similar uniformity in their rankings for strategies, which showed residents to be far more divided — no single strategy garnered more than 39% of first place rankings (Figure 8). Further, the rankings for strategies were incongruous with FLAC’s prognostic framing of full removal of the lead laterals, in that the strategies which received the most votes were mitigation strategies, designed to deal with mediating existing lead

Question: In your opinion, which of the following strategies is the most important to focus on to address lead poisoning? Please rank (1 to 7) in order of importance, with 1 being the most important, and 7 the least important. Results below reflect pre- and post-event survey responses.

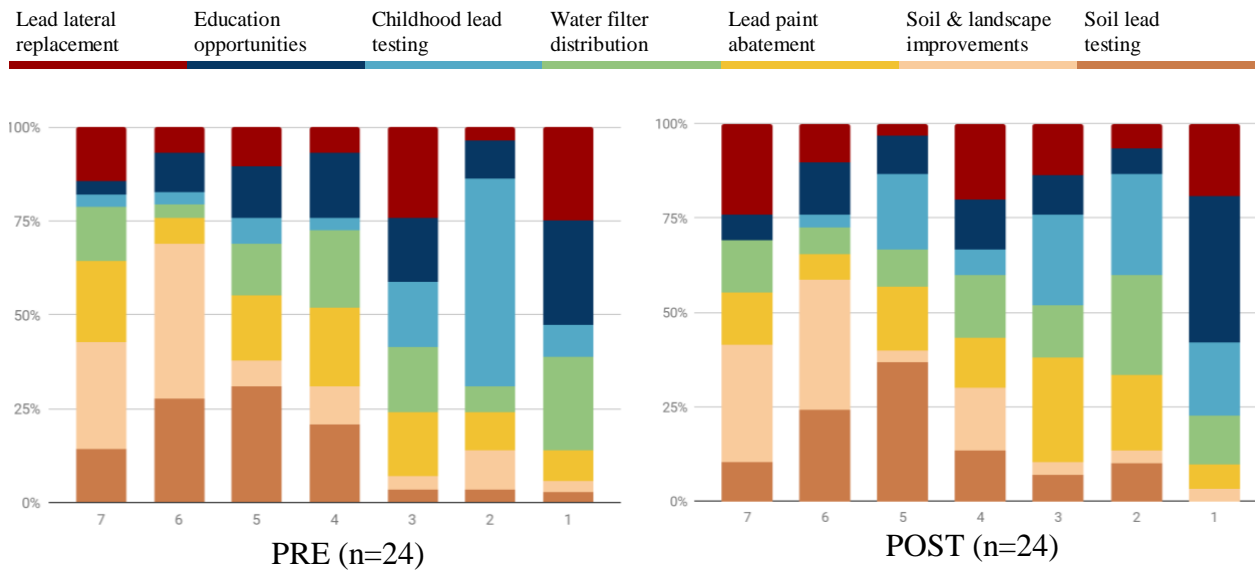


Figure 8 — 16th Street Survey Responses (Strategies)

Data Source: 16th Street Community Health Center

exposure, rather than strategies to remove the source of exposure. *Lead education opportunities* was the highest ranked strategy (27.8% ranked first pre-survey, 38.7% in post), with the remaining responses split amongst *water filter distribution* (25% pre, 26.7% post), *lead paint abatement* (8.3% pre, 6.5% post) and *childhood lead testing*, which saw the largest jump (8.3% pre, 19.4% post). Together, *filter distribution*, *education opportunities* and *childhood lead testing* garnered more than 70% of first place ranking in post- surveys. All of these can be considered to represent pragmatic mitigation strategies — a recognition that lead exposure is unavoidable, but that its most hazardous effects can be contained through a variety of measures. The only two strategies listed which would wholly eliminate the possibility of lead exposure, *lead lateral replacement* and *lead paint abatement*, received a total of 35.8% of first place rankings in the pre- surveys, but fell to 26.7% in post-surveys. *Lead lateral replacement* alone failed to garner more than 25% of first place rankings pre-survey, and fell to only 19.4% in post-

survey responses. While it is not surprising that residents might prioritize strategies which give them an immediate measure of control over their lead exposure, this carries serious implications for FLAC's organizing efforts and their ability to leverage community activism to pressure government into pursuing full removal of Milwaukee's LSLs.

If these survey responses suggest that Milwaukeeans are willing to accept interim solutions or personally undertake the necessary steps to mitigate the risks of lead poisoning, there is similarly pressure for organizers to pursue a strategy focused on interim measures rather than full remediation. These divergent strategies are already underway, as a leader of one of FLAC's partner organizations explained:

I have tremendous respect for Robert [Miranda] and all the work that they've [FLAC] been doing on this issue, because without 'em people wouldn't be thinking about doing anything about it. He and I may disagree whether first priority is removing the lead pipes or just filtering and getting a public campaign out there so that people understand the risks, make the decisions, start filtering. (Director of FLAC partner organization, phone interview)

As emphasized in the quote above, alternative strategies to FLAC's campaign of full remediation are contingent upon residents actively assuming greater responsibility, acting in their own best interests and making decisions to pursue interim solutions. In spite of how this devolved responsibility runs contrary to FLAC's framings, organizers recognize that "getting filters on people's faucets is important...it's not a casual stopgap measure, it's an important stopgap measure" (Local organizer, personal interview). These interim measures provide residents a critical measure of autonomy over their own well-being, and a recourse to solutions in the deafening absence of comprehensive government action. The same organizer quoted above pragmatically noted "I mean logistically, can we just tear up every street and rip all the pipes out in two years? No. So that means that we better have a pretty good long-term plan for water filtration until then" (Local organizer, personal interview). Both residents and organizers

understand that, as things currently stand, even the most aggressive municipal response would place full remediation an unacceptable number of years in the distance, perhaps necessitating that these “stopgap” measures serve as long-term — possibly lifetime — solutions.

If a comprehensive solution is indeed decades away, interim solutions are critical measures by which residents may protect themselves from risk, a reality for which FLAC’s framing must adapt. Pragmatism therefore necessitates that FLAC pursue a prognostic framing that bifurcates solutions and responsibility, demanding both full removal of the laterals and an increased emphasis on interim measures. However, a bifurcated notion of responsibility — divided between ultimate responsibility for a long-term solution and interim responsibility for necessary, stop-gap measures — has important implications for FLAC’s organizing strategy and demands. The group has adjusted their demands to account for these interim measures, but is loath to budge on their diagnostic framings of ultimate responsibility:

Demand: for the City to develop a comprehensive plan for lead removal and mitigation (pipes and paint). This plan must not burden home owners [sic] and renters with implementation costs, it must continually provide water filters to affected residences, and must include the complete removal of all lead laterals in the City within a generation (FLAC Community Assembly Agenda, April 2018).

Although FLAC may have amended their official demands, an uneasy relationship exists between these two prognostic framings, in that interim measures such as filtering and education programs may lessen the political pressure on city government by dint of their very effectiveness.

Although organizers may agree that interim measures are necessary for public health, demands for short term solutions may allow Milwaukee's elected officials latitude in continuing to evade the question of complicated, expensive long-term solutions. While short-term measures may reduce the likelihood of lead poisoning for some residents, it can never fully remove the

risk. As one organizer put it, “you drag out the water filter and say a water filter is going to take 100% of the lead out of the water— there’s not a water filter manufactured by man! They’re [government] using that as a band aid but they’re not continuing to talk about removing these pipes” (FLAC organizer, personal interview). Not only do these solutions place responsibility on residents instead of government, where FLAC contends it ultimately rests, they pose a problem for FLAC’s mission of full removal of the lead laterals because they are interim measures focused on minimizing risk, rather than removing it. If interim measures are able to effectively manage the crisis by mitigating immediate risks for Milwaukee residents for decades to come, they may have the perverse effect of undermining FLAC’s political opportunity by removing any immediate public health crisis, relieving the pressure on government to pursue comprehensive, long-term solutions.

In spite of the neoliberal context within which residents are willing to assume greater responsibility, this study does not contend that the individuated risk and increased emphasis on short-term solutions is solely the result of government neglect or a neoliberal governmentality; rather, I argue that we must take seriously the role of lead itself in frustrating FLAC’s ultimate prognostic framings, and in facilitating the ease with which residents will either accept responsibility for interim measure or do without any sort of comprehensive solution. Therefore, the next section explores more fully the unique properties of Milwaukee’s lead laterals.

5.5 The invisibility of lead

As this research has attempted to demonstrate, much of FLAC’s work has been devoted to persuading Milwaukeeans and their elected officials that LSLs pose a compelling and galvanizing public health risk. This begs the question, is there something about lead which

makes it uniquely difficult to organize around? Or, more specifically, is there something about Milwaukee's urban lead — positioned within networks of space, race, politics and non-humans — which makes it uniquely difficult to organize around, and irreconcilably different from other urban lead environmental justice movements? Although the recent horrors of Flint's urban lead crisis have at times served as part of FLAC's motivational framing, colloquially invoked by activists as a similar and galvanizing example of lead poisoning and racialized, political callousness, this chapter argues that Milwaukee's case of urban lead is distinct from Flint. When we expand our analysis, in the vein of Actor Network Theory (ANT) to consider the relational networks of power and agency, we can consider not only the uniqueness of lead and the challenges it poses for organizers, but the unique ways in which the networks of which Milwaukee's urban lead are a part have conditioned and hampered the efforts of FLAC and other activists. The "actor network" at issue in Milwaukee includes the spatiality of the pipes, the history of their development, the racialized and segregated landscape of the city, and numerous other 'actants' that together distinguish the lead in Milwaukee's pipes, making its visibility more contested, more challenging and more complex.

The crisis to which FLAC has devoted itself is, for a variety of reasons, 'invisible'; it is largely unseen not only in public discourse or media coverage but in the sense that the lead laterals and the risks associated with them are difficult — geographically, temporally, materially and physically — to locate. In spite of this 'invisible' crisis, FLAC has successfully agitated for overt government acknowledgement of the issue, greater distribution of information to the public, and tangible (if meagre) municipal responses to FLAC's prognostic framing. However, the group has still struggled to garner a sufficient collective response from residents with their motivational framing. If the purpose of diagnostic and motivational framing in social

movements is to generate collective action and mobilize those affected, we might see this modest public response as one example of how an ‘invisible’ crisis might affect public perception of these framings, making the issue easy for residents to ignore and for elected officials to deny. Therefore, I suggest that the uneven public response to FLAC’s organizing efforts cannot be sufficiently explained solely through frame analysis; rather, I contend that we must take seriously the role of non-humans in shaping perceptions of the embodied risks attached to the LSLs, and who then ultimately bears responsibility for their remediation. Lead is more than simply the subject at hand; it plays an agential and significant role in shaping (and inhibiting) framings, perceptions, and actions, often because its presence — in the ground, the water, and the body — is so difficult to prove.

The most unambiguous way in which Milwaukee’s lead crisis is invisible is that the water is objectively inconspicuous. Unlike the lead crisis in Flint, MI, Milwaukee’s water does not appear perceptibly dangerous; it neither tastes, smells nor looks ‘dangerous,’ and because there is no instigating public health event for current crisis, Milwaukee residents have not seen their water quality change. In Robert Miranda’s eyes, this is what makes Milwaukee water “more insidious” than Flint, a threat that communicates, by dint of its invisibility, a false sense of security to residents (R. Miranda, phone interview). This hurdle of perception is a high bar for FLAC and other organizers, who must provide a diagnostic and motivational framing compelling enough to cause residents to examine an habitual action — turning on their tap — as dangerous, in spite of a lack of discernable evidence that doing so poses an imminent risk. A FLAC member who runs a local non-profit health organization likened this to the education efforts around the AIDS crisis in the 1980s, where risk was ambiguous and the solutions required a fundamental change in everyone’s personal, sexual behaviors:

People had to change, completely change their behaviors around sex in order to stay safe, and you didn't even want to get the test because you were afraid to find out, because you knew you had done things that were risky. So I think it's a lot like that, because I can say to people 'go get tested' but I would be willing to bet that I have not have not been able to convince one fucking person to get tested (Director of FLAC partner organization, phone interview).

While it the inconspicuous nature of Milwaukee's water may be a significant obstacle for organizers to overcome in persuading residents to change their everyday behaviors, it is also important to note that due to the differentiation housing stock in the city, not all Milwaukeeans expect their water to seem 'safe' and perpetually drinkable, even before revelations of the widespread LSLs. The same interviewee noted that "depending upon where you live in the city of Milwaukee, you turn your water on and it may come out discolored" (Director of FLAC partner organization, phone interview). And yet, it is illuminating to set this reality alongside the responses of those Milwaukeeans who do unquestioningly see their water supply as drinkable and harmless; the above quote was immediately followed with an anecdote about her daughter:

My daughter lives over on the East side, off of Brady, and um, she was washing her dishes one day, and she's got a set of white dishes, and she said the water was yellow. So she ran a glass of the water and then went in her bathroom and the water there came out clear. And she put the two glasses side by side, and said what the hell is—she took a picture and texted me—she said 'what the hell is going on'? And I said 'what the hell is going on is I just ordered you a water filter off of Amazon and it will be delivered tomorrow (Director of FLAC partner organization, phone interview).

This complex negotiation of the differentiated pattern of risk in the city of Milwaukee seems to imply that while not all residents have access to have objectively safe, drinkable water, some residents should — or at the very least, have come to expect that they should. For certain residents, turning on the tap to find discolored water serves as enough of a shock to drive an immediate response to mediate potential risk; for other residents in the city, discolored water is simply what they have come to expect when they turn on the tap, meaning for these residents,

any potential ‘riskiness’ due to lead is disguised by the fact that normal water already appears risky.

Not only is the crisis ‘invisible’ in that LSLs are subterranean, but confirmation of the spatial extent of the LSLs is hidden in the history of Milwaukee’s infrastructural development. In order to determine the spatial extent of the LSL crisis, the city has relied upon the year each house was built as evidence of risk, based on the presumption that certain materials were used during specific years of development. Because water systems are a network of city-owned service lines combined with property-owned lines, identification of risk is contingent upon identifying both city- and property-side materials. However, verifying these materials requires a laborious examination of the uneven and uncertain records kept over decades of unsupervised private-side development. Former MWW Commissioner Carrie Lewis explained:

What [material] is on the private side is not recorded anywhere. What’s on the private side *may* be recorded, I am told by plumbing inspection, as a little note on the permit when the inspector went to inspect the installation in the house, but that isn’t catalogued, that isn’t collected and searchable except on those individual pieces of paper (Water Quality Task Force Meeting, February 10, 2017).

Given the unevenness of such record keeping, LSLs — particularly those laid on the private-side between 1951 and 1962 — pose a doubly invisible risk to the residents of these homes. These laterals are not only invisible in that they are buried in the ground, but because proof of the risk is oftentimes non-existent in official records, meaning their ‘riskiness’ might go uncounted by official city maps and estimates.

Currently, official city maps (Figure 2) and listings of ‘at-risk’ properties are based on records of homes built prior to 1962, the year in which the City of Milwaukee mandated the exclusive use of copper pipes for service lines. However, previous estimates of risk — including the 70,000 residences that had received the initial letter from MWW — had relied on the

assumption that lead pipes had not been used after 1951. This amendment, changing the dividing line between safety and danger from 1951 to 1962, added an additional 12,000 potential homes to the pool of at-risk residences, immediately rendering previously innocuous homes sites of risk. Even with this amendment, there continues to be ambiguity in which homes are affected; the City routinely used lead for service lines prior to 1951, but did not officially mandate the use of copper until 1962, making the additional 12,000 homes precarious zones of risk and safety, with only one way to definitively reveal if the possible threat is real: to locate the pipe and examine it. This physical and temporal invisibility further contributes to the sense that the lead laterals are a spectral crisis: a potentially widespread crisis that eludes official methods of identification. To mediate this unknowability of the geographic distribution of risk, both FLAC and the City of Milwaukee have made efforts to help residents verify the risk on their own, by testing to see if their pipes are indeed made of lead (Figure 10).

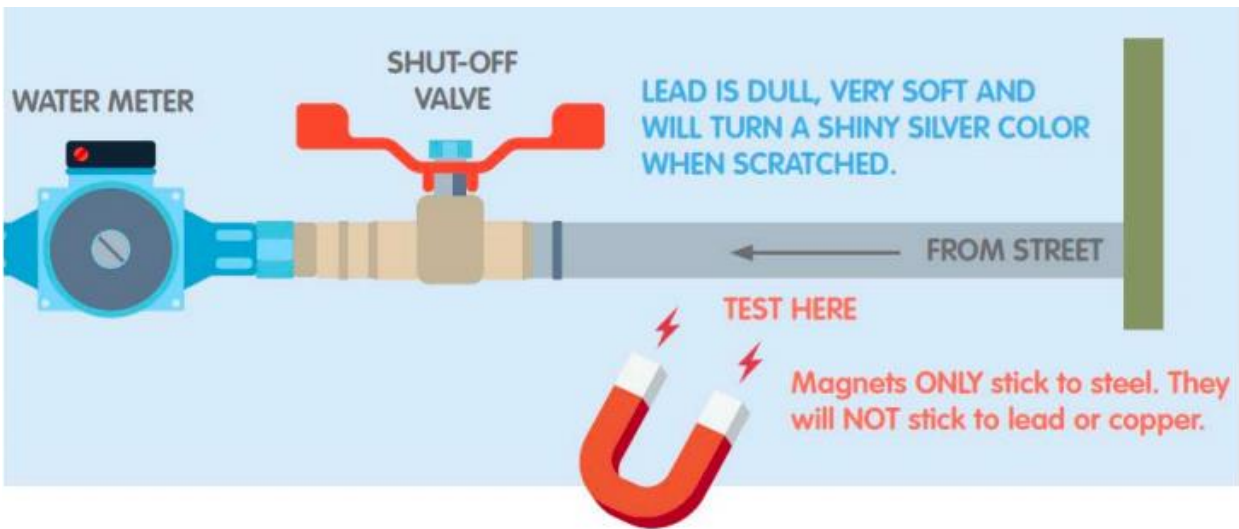


Figure 9 — “Test a service line to see if it is made of lead”

Source: City of Milwaukee

Confirming that a service line is made from lead only constitutes part of the calculation of risk, which is tied not only to the presence of LSLs but also to the unpredictable way they

affect the toxicity of water as it moves through the laterals, a further ‘invisibility’ of the risk associated with LSLs. Although testing may indeed reveal elevated lead levels, the toxicity is prone to fluctuate, spiking as lead particles flake off the pipes into the moving water and at times dwindling to ‘risk-free’ levels. Risk here is not just invisible but unpredictable, subsiding and reemerging in an unpredictable fashion that may defy a definitive scientific classification as either at-risk or risk-free. When one activist found out their lead blood level was 17 bbp, they did everything possible to uncover the source of lead exposure; because this activist lived in a home with LSLs and did not have any other ‘risky’ behaviors, process of elimination seemed to guarantee that risk exposure must have come from the taps. As Miranda put it, “[she] doesn't eat paint chips, she doesn't eat mud pies¹ and she isn't out snorting windowsill dust. The only way she got that, and she knows it, is she drank water from her lead line tap at her home” (R. Miranda, phone interview). And yet, testing the taps proved to be infuriatingly inconclusive:

We tested the water in my master [bedroom] sink and it was higher than at my kitchen sink, but that means nothing because you know, the test is only good for that minute. You know, you test two hours later and get a different test result, two weeks later and have different test results. The thing I learned about testing water is don't do it. Stop testing your water and just buy the filter. (Director of FLAC partner organization, phone interview).

This frustration demonstrates that testing, purportedly a means to identifying risk, can in fact serve to highlight the unknowability of lead, even when risk has been otherwise proven to be demonstrably evident in one's body, as it was for this FLAC member. Although process of elimination seemed to imply that the exposure had to have come from the taps, the uneven toxicity results did little more to confirm or refute the riskiness of the activists LSLs. This ambiguity further contributes to a conditional sense of the riskiness of lead that organizers must

¹ The “mud pies” reference here is to possible exposure via lead in the soil, which is most accessible for children who are crawling or playing outside and may ingest soil.

overcome; the risk is at once spectral and threatening, while not yet discernable enough to drive behavior changes or activism.

Further, because water in each municipality has a unique chemical composition, testing for lead and the subsequent interpretation of the test results is both a proprietary action and proprietary knowledge which cannot be personally undertaken by residents. Water testing must be specifically calibrated in laboratories to refer to the characteristics of the sampled water, requiring residents to either purchase testing kits which may then be sent off for calibration and testing, or actively seek out the help of city agencies. While these at-home kits are relatively affordable and widely available at most home goods stores, none of them are certified by the EPA or any other government agency; by contrast, those laboratories that are EPA-certified routinely work exclusively with businesses or city agencies, and will decline to provide testing for individual homeowners. Municipal agencies such as MWW, on the other hand, have not made testing widely available, and they will decline test water samples that are brought to their offices by residents, for the specific reasons considered above: the risk changes from minute to minute, and samples must be verified at the source. Unsurprisingly, residents at one SSCHC lead education event repeatedly asked for information on how they could get themselves and their water tested for lead. In spite of these hurdles, one activist seemed to imply that a failure to understand how to test one's water was due to a lack of personal motivation, explaining that "all of that stuff [information about testing] is available easily on the internet if they're [residents] super curious....it's just that people gotta make that decision that they want to be tested" (Director of FLAC partner organization, phone interview). In this accounting, homeowners are powerless to influence the chemical composition of their drinking water, are denied recourse to a

means of independently ascertaining whether the water could indeed be considered ‘safe,’ and are yet obligated to be personally responsible for finding a way to obtain that information.

Perhaps most sinister, given the spatial distribution of risk of Milwaukee’s lead laterals, are the ‘invisible’ effects of long-term lead exposure in the body. The majority of scientific research of lead exposure has focused on either the developmental effects of lead on pregnant women and children under the age of six; studies of exposure in adults tend explore the effects of high-dose, anomalous exposure, such as may be related to travel or workplace hazards.

Although lead bio-accumulates (remaining in the body and building up over time) long term, low-dose exposure — such as might be caused by Milwaukee’s LSLs — has received much less scientific attention. The studies that have explored the effects of lead poisoning in adults have revealed that effects of long term, low-dose exposure may be ‘invisible’ in another sense, in that they are easily conflated with the effects of genetics, poverty, and what might be pejoratively referred to as “lifestyle choices.” Recent tests have revealed that even low-level lead exposure can lead to high blood pressure, stroke and cardiovascular disease for adults (Lanphear et al. 2018, Navas-Acien et al. 2007), health outcomes which are more often considered to be the unlucky result of genetics, lack of exercise and poor diet. Lead exposure can also cause irritability, and affect decision-making ability and intelligence, effects which are more readily considered individual character traits than health outcomes (CDC, 2017).

Further, lead exposure can be compounded by the effects of diet; an EPA publication notes that “children with empty stomachs absorb more lead than children with full stomachs” (EPA, 2001), a reality which disproportionately affects families living in poverty. Hunger and poverty are inextricably linked, and there is a clear correlation to be made between one’s physical ability to mitigate the effects of lead poisoning and one’s socioeconomic status, a

connection we should not overlook, given the way poverty and segregation is tied to the spatial distribution of risks posed by LSLs in Milwaukee. This potential invisibility — the insidious connection between the long-term effects of lead poisoning and disenfranchised communities, is one that is almost too immense to comprehend:

As more and more of this stuff comes out, more and more it shows that communities that are poor, especially communities of color, that their kids are being poisoned by this. I mean, it was back in the 1990s that they knew lead caused violent behavior and disturbed behavior and...you know, poor ability to get through school, but you just think the narrative is that it's "these people" or "poor people," you just shrug your shoulders.Let's look at what we've wrought over these last 30, 40 years, of not paying attention to this. (Community advocate, phone interview).

This is the magnitude of what FLAC — and Milwaukee — might be truly be reckoning with: the invisible effects of lead on generations of certain communities, effects that have been racialized and dismissed as "these people," to use this community advocate's words. Taken this way, we must perhaps reconsider whether FLAC is indeed organizing 'in the absence of a crisis,' or if it is more apt to argue that they are organizing around a crisis so difficult to detect, so latent, and so oft dismissed that it has become not a crisis, but a chronic state.

• • •

As these findings have attempted to demonstrate, FLAC's struggles to bring the LSL crisis onto the public and political radar is hampered not only by a lack of political will and government misdirection, but also by the very nature of the crisis. Lead itself, and its uneven and invisible effects upon both bodies and space, has contributed significantly to the organizing hurdles the group faces. These hurdles are compounded by residents' willingness to assume responsibility for pursuing and maintaining interim solutions, reducing the risk to acceptable levels and reliving political pressure for expensive government solutions. However, these interim measures protect only those Milwaukeeans who can afford interim solutions, potentially

leaving residents who are already most at-risk for lead exposure doubly underserved — unable to access interim solutions, and easily dismissed by a government that sees the crisis as effectively managed. These findings not only carry practical implications for future activists' efforts and practices, but also for future research into local social movements.

6 - CONCLUSION

This research expands social-movement and framing theories to understand the dynamics between framings and non-humans, and the implications for the effectiveness of social movement efforts. It does so by exploring not only the diagnostic, prognostic and motivational frames employed by a local social movement, but also by examining the external factors that have inhibited or conditioned the effects of these frames. The ideal combined effect of diagnostic, prognostic and motivational framings is to mobilize activism in service of proposed solutions for the identified problem; this interconnected nature means that external factors will not simply affect one element of a social movement's framing, but will have implications for each discursive element and for the overall efficacy of the movement's goals. This analysis demonstrates how the effects of external factors — specifically, the often invisible role of non-humans — can in fact be fundamental to a local social movement's efforts to address urban lead contamination.

This brings us full circle back to the question I posed of my own behavior at the outset — what, exactly, facilitates such a complex and uneasy relationship with my lead laterals? The conclusion seems to be that a variety of factors together contribute to a sense of unknowability of risk and responsibility, to which social movement actors have sought to respond with clarity. The limited publicly available information on the crisis, the repeated refutations by elected officials and the City's experience with lead abatement and water technology has contributed to public confusion or denial as to the extent of the crisis, or ignorance of its very existence (sections 5.1, 5.2). The uneven effects of place, race and political opportunity throughout Milwaukee's neighborhoods have made the risks of lead exposure 'invisible' — both by dint of

the unintentionally mitigating effects of wealth and Whiteness, and because the effects of lead exposure are easily conflated with the effects of poverty and segregation (section 5.3).

Municipal responses to the crisis have been insufficient to the magnitude of its effects, and have emphasized individual responsibility over government-led solutions, which has the effect of further penalizing those residents who are most afflicted by lead exposure, and unable to afford interim solutions (section 5.4). Lastly, lead itself contributes greatly to this uneasy and uneven relationship — ‘invisible’ in many ways, lead has proven a uniquely difficult contaminant around which to organize a social movement (section 5.5).

FLAC has gone to great lengths to account for the unknowability of lead, and the unevenness of its effects in Milwaukee's water supply. This can be seen in the group's efforts to reveal the science behind lead's ‘invisible’ embodied effects, and their determined emphasis on the uneven relationship between race, poverty, and lead poisoning, which disproportionately affects certain neighborhoods for reasons that are insufficiently addressed by existing efforts to remediate lead risks. Although the group is many ways cognizant of the dynamics of non-humans, they have yet primarily employed framings that emphasize the social and political conditions that have made current patterns of lead exposure problematic. While these dynamics are critical to the current case study, alternative frames that more directly engaged with the unique characteristics of lead would certainly be possible, and would not prohibit an emphasis on socio-political factors. For example, a framing which emphasized the unknowability of lead — the ‘invisible’ threat in 70,000 homes — would not preclude a framing of government malfeasance. Rather, such a framing would benefit from illuminating the ways in which government action has unevenly distributed this ‘invisible’ threat, exacerbating its effects and its unknowability for certain areas of the city. This study therefore carries practical implications for

local social movement and activist practice. By revealing the dynamics of non-humans in the current case study, it is my hope that subsequent framings can not only take seriously the role of non-humans, but also discursively relate and respond to the conditions they produce.

Recognizing the role of non-humans in social movements offers an important opportunity for future research to analyze how framings have — and have not — managed to take seriously the role of non-humans in shaping or constraining collective-action frames. Following this study's findings, future research might help to reveal if an explicit recognition of the properties and capabilities of non-humans leads to more nuanced — and successful — collective-action frames. Using Milwaukee's local social movement efforts to remediate lead laterals as a case study, this research demonstrates that there may be significant theoretical and practical insights to be gleaned from recognizing the role of non-humans in framing activity.

This study also has practical implications for policy, as it demonstrates that the trend in Milwaukee towards short-term solutions and mitigation strategies places an undue burden on residents and alleviates political pressure for long-term solutions to remove all of the city's lead service lines. FLAC's focus has always been on full removal of all of the city's lead laterals, at no cost to homeowners; although their framings have adapted to include demands for interim measures, as well, it remains to be seen how the group will continue to generate public interest and political will to pursue expensive and complex solutions for a crisis that, while still existing in 70,000 homes, has been — for some residents — effectively reduced to a manageable, 'risk-free' level.

7 - REFERENCES

- Bakker, Karen. 2010. *Privatizing Water: Governance Failure and the World's Urban Water Crisis*. Ithaca, NY: Cornell University Press.
- Barry-Jester, Anna Maria. 2016. "What Went Wrong in Flint." *FiveThirtyEight.com*, January 26.
- Becker, Elmer Becker. 1974. *A Century of Milwaukee Water: An Historical Account of the Origins and Development of the Milwaukee Water Works*. Milwaukee, WI: Milwaukee Water Works.
- Behm, Don. 2016. "Barrett urges use of water filters to remove lead." *The Wisconsin Journal Sentinel*, September 7.
- Bellinger, David C. 2016. "Lead Contamination in Flint — An Abject Failure to Protect Public Health." *New England Journal of Medicine* 374 (12): 1101-3.
- Bence, Susan. 2016. "Milwaukee Announces Water Filter Plan to Help Address Lead Pipes." *WUWM*, National Public Radio, November 8.
- . 2017. "How Far Has Milwaukee Come In Resolving Its Lead Water Crisis?" *WUWM*, National Public Radio, September 12.
- Benford, Robert D., and David A. Snow. 2000. "Framing Processes and Social Movements: An Overview and Assessment." *Annual Review of Sociology* 26: 611–39.
- Benford, Robert D. 1993. "‘You could be the hundredth monkey’: collective action frames and vocabularies of motive within the nuclear disarmament movement." *The Sociological Quarterly* 34: 195-216.
- Beveridge, Charles E. 1958. *History of Water Supply in the Milwaukee Area*. Milwaukee, WI: Metropolitan Study Commission, Committee on Metropolitan Functions.
- Bonds, Anne, Judith T. Kenny & Rebecca Nole Wolfe. 2015. "Neighborhood revitalization without the local: race, nonprofit governance, and community development." *Urban Geography* 36 (7): 1064-1082.
- Buell, R. 2001. *Writing for an Endangered World: Literature, culture, and the environment in the United States and Beyond*. Cambridge, MA: Harvard University Press.
- Center for Disease Control and Prevention. 2016. "Learn More about CDC’s Childhood Lead Poisoning Data." <https://www.cdc.gov/nceh/lead/data/learnmore.htm>.

- Center for Disease Control and Prevention. 2017. “Health Problems Caused by Lead”
<https://www.cdc.gov/niosh/topics/lead/health.html>.
- Ceraso, Marion. 2013. “20 years after fatal outbreak, Milwaukee leads on water testing: Utilities target — and sometimes find — unregulated chemicals in drinking water, sewage.” *WisconsinWatch.org*, May 22. <https://www.wisconsinwatch.org/2013/05/20-years-after-fatal-outbreak-milwaukee-leads-on-water-testing/>
- City of Milwaukee. n.d. “City of Milwaukee Lead Poisoning Prevention.”
city.milwaukee.gov/health/lead-Poisoning.
- Coates, Ta Nehisi. 2014. “The Case for Reparations.” *The Atlantic*.
<http://www.theatlantic.com/magazine/archive/2014/06/the-case-forreparations/361631/>
- Delong, Katie and Suzanne Spencer. 2018. “‘I made clear my concern.’ Mayor returns interim health commissioner appointment to council unsigned.” *Fox 6 News*, 15 February
Fox6Now.com. <http://fox6now.com/2018/02/15/i-made-clear-my-displeasure-and-concern-mayor-returns-interim-health-commissioner-appointment-to-council-unsigned/>
- Deprey, Dylan. 2017. “The Saga for Lead-Free Water Continues.” *Milwaukee Courier Online* 18 February. <http://milwaukeecourieronline.com/index.php/2017/02/18/the-saga-for-lead-free-water-continues/>.
- EPA. *Lead and a Healthy Diet: What You Can Do to Protect Your Child*. Office of Pollution Prevention and Toxics, 2001. Print. https://www.epa.gov/sites/production/files/2014-02/documents/fight_lead_poisoning_with_a_healthy_diet.pdf
- Faraj, Jabril. 2016. “Civilian water council: Milwaukee in ‘undeclared state of emergency’.”
Milwaukee Stories, August 28.
- Ferman, Barbara. 1996. *Challenging the growth machine: Neighborhood politics in Chicago and Pittsburgh*. Lawrence, KS: University Press of Kansas
- Foss-Mollan, Kate. 2001. *Hard Water: Politics and water supply in Milwaukee, 1870-1995*. Lafayette: Purdue University Press.
- Freshwater for Life Action Coalition. 2016. “Community coalition formed to address lead service pipe removal in Milwaukee.” *Neighborhood News Service Milwaukee*, May 8.
- Freshwater for Life Action Coalition. 2018a. “Exposing the lead in water cover-up: Emergency Town Hall Meeting” Flyer. April 18.
- Freshwater for Life Action Coalition. 2018b. “‘Get The Lead Out’ Community Assembly.” Agenda. March 24.

- Fuortes L. & E. Bauer. 2000. "Lead contamination of imported candy wrappers." *Veterinary and Human Toxicology* 42 (1): 41-2.
- Gamson, William A. 1990. *The strategy of social protest*. 2nd ed. Belmont, CA: Wadsworth Publishing
- . 1992. *Talking politics*. New York, NY: Cambridge University Press
- Goffman, Erving. 1974. *Frame Analysis: An Essay on the Organization of Experience*. Cambridge, MA: Harvard University Press.
- Goodson, Nelson H. 2016. "FLAC Wants Milwaukee Mayor Barrett To Replace 70K Home Lead Toxic Pipe Laterals." *Hispanic News Network U.S.A.* June 16. <http://hispanicnewsnetwork.blogspot.com/2016/06/flac-wants-milwaukee-mayor-barrett-to.html>
- Habermas, Jurgen. 1981. "New social movements." *Telos* 49: 33–37.
- Hall, Dee J. 2016. "Wisconsin must do more to protect residents from lead in drinking water, DNR and Milwaukee leaders agree." *The Wisconsin Center for Investigative Journalism*, September 7, 2016.
- Harvey, D. 1996. *Justice, nature and the geography of difference*. Cambridge, MA: Blackwell.
- Heynen, Nik, Harold A. Perkins & Parama Roy. 2006. "The political ecology of uneven urban green space: the impact of political economy on race and ethnicity in producing environmental inequality in Milwaukee." *Urban Affairs Review* 42(1): 3-25.
- Hunzaker, M. B. F. 2016. "Cultural Sentiments and Schema-Consistency Bias in Information Transmission." *American Sociological Review* 81 (6): 1223-50.
- Jackson, Kenneth T. 1985. *The Crabgrass Frontier: The Suburbanization of the United States*. New York: Oxford University Press.
- Jannene, Jeramey. 2018. "Barrett Ousts Bevan Baker Over Lead Fiasco." *Urban Milwaukee*. 12 January.
- Jenkins, J. Craig. 1983. "Resource Mobilization Theory and the Study of Social Movements." *Annual Review of Sociology*, 9:527-53.
- Johnson, Chris and Robert Miranda. 2016a. "Community Meeting on Lead Service Lines, Homeowners Have Paid Enough Already." *KINGFISHmke.com*. December 6.

- Johnson, Chris and Robert Miranda. 2016b. "Mayor Barrett's proposing homeowners pay for crisis created by city, replacement plan misleading" *KINGFISHmke.com*. December 12.
- Jones, O., & Cloke, P. 2008. "Non-human agencies: Trees in place and time." *Material Agency: Towards a non-anthropocentric approach*. Eds. Carl Knappett and Lambros Malafouris. Berlin: Springer. 79-96.
- Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford University Press.
- Leavitt, Judith Walzer. 1996. *The Healthiest City: Milwaukee and the politics of health reform*. Milwaukee, WI: University of Wisconsin Press.
- Lanphear, Bruce P., Stephen Rauch, Peggy Auinger, Ryan W Allen, Richard W Hornung. 2018. "Low-level lead exposure and mortality in US adults: a population-based cohort study." *The Lancet Public Health* 3 (4): e177 - e184.
- Kurtz, Hilda E. 2003. "Scale frames and counter-scale frames: constructing the problem of environmental injustice." *Political Geography* 22: 887–916.
- Mansfield, Becky. 2012. "Environmental Health as Biosecurity: "Seafood Choices," Risk, and the Pregnant Woman as Threshold." *Annals of the Association of American Geographers*. 102 (5): 969–976.
- Martin, Deborah G. 2003, "'Place-framing' as place-making: constituting a neighborhood for organizing and activism," *Annals of the Association of American Geographers* 93 (3): 730-750.
- Massey, Wyatt. 2016. "Special Report: Risk of poisoning from lead-based paint remains, despite city's progress." *Neighborhood News Service Milwaukee*. April 13.
- McCarthy, John D. and & Mark Wolfson. 1996. "Resource Mobilization by Local Social Movement Organizations: Agency, Strategy, and Organization in the Movement Against Drinking and Driving." *American Sociological Review*. 61 (6): 1070-1088.
- McPhail, Clark. 1991. "The Myth of the Madding Crowd." *Social Forces* 71 (1): xxii-xlviii.
- Mendez, Edgar. 2016. "Concerns Over Lead In Drinking Water." *Neighborhood News Service Milwaukee*, September 19.
- Millman, Oliver, and Jessica Glenza. 2016. "At least 33 US cities used water testing 'cheats' over lead concerns." *The Guardian*, June 2.
- Milwaukee Common Council. Common Council Meeting, December 13, 2016. Video Recording. http://milwaukee.granicus.com/MediaPlayer.php?view_id=2&clip_id=1263

- Milwaukee Department of Administration Budget and Management Division. 2016. *MEMORANDUM: Analysis of Properties with Lead Service Lines*. June 16.
- Milwaukee Health Department “Lead Poisoning Prevention Data & Reports.” <http://city.milwaukee.gov/>.
- Miranda, Robert. 2016. “Letter to the Editor regarding Lead Water Forum Article.” *KINGFISHmke.com*.
- Muller, Joann. 2013. “The Capital of Water.” *Forbes*. April 15.
- Navas-Acien, Ana, Eliseo Guallar, Ellen K. Silbergeld & Stephen J. Rothenberg. 2007. “Lead Exposure and Cardiovascular Disease—A Systematic Review.” *Environmental Health Perspectives* 115 (3): 472–482.
- Ottinger, Gwen. 2018. “Opening Black Boxes: Environmental Justice and Injustice Through the Lens of Science and Technology Studies.” *The Routledge Handbook of Environmental Justice*. Eds. Ryan Holifield, Jayajit Chakraborty & Gordon P. Walker. Routledge, Taylor & Francis Group: New York. 89-100.
- Olson, Mancus. 1965. *The Logic of Collective Action*. Cambridge, MA: Harvard University Press.
- Pulido, Laura. 1996. “A critical review of the methodology of environmental racism research.” *Antipode* 28 (2): 142–159.
- . 2016. “Flint, Environmental Racism, and Racial Capitalism.” *Capitalism Nature Socialism*. 27 (3): 1-16.
- Rabin, Richard. 2008. “The Lead Industry and Lead Water Pipes: A Modest Campaign.” *American Journal of Public Health*. 98 (9): 1584–1592.
- Ranganathan, Malini. 2016. “Thinking with Flint: Racial Liberalism and the Roots of an American Water Tragedy.” *Capitalism Nature Socialism*. 27 (3): 17-33.
- Renner, Rebecca. 2010. “Reaction to the solution: Lead exposure following partial service line replacement.” *Environmental Health Perspectives*. 118 (5): A202-8.
- Robbins, Paul. 2007. *Lawn People: How Grasses, Weeds, and Chemicals Make Us Who We Are*. Philadelphia: Temple.
- Rose, Nikolas. 2001. “The Politics of Life Itself.” *Theory, Culture & Society*. 18 (6): 1-30.
- Roy, Parama. 2011. “Non-profit and Community-based Green Space Production in Milwaukee: Maintaining a Counter-weight Within Neo-liberal Urban Environmental Governance.” *Space & Polity*. 15 (2): 87-105.

- . 2010. “Analyzing Empowerment: An Ongoing Process of Building State–Civil Society Relations – the Case of Walnut Way in Milwaukee.” *Geoforum*. 41 (2) (3): 337-48.
- Rutland, T., and A. Aylett. (2008). “The work of policy: Actor networks, governmentality, and local action on climate change in Portland, Oregon.” *Environment and Planning D: Society and Space* 26 (4):627–646
- Schmidt, Silke, and Dee J. Hall. 2016a. Lead in drinking water poses danger for children, pregnant women. *The Wisconsin Center for Investigative Journalism*. January 31.
- . 2016b. Lead pipes, antiquated law threaten Wisconsin’s drinking water quality. *The Wisconsin Center for Investigative Journalism*. February 1.
- Seely, Ron. 2015. Safe, clean drinking water eludes many Wisconsinites. *The Wisconsin Center for Investigative Journalism*. November 8.
- Simon, Roger D. 1996. *The City-Building Process: Housing and Services in New Milwaukee Neighborhoods, 1880–1910, Revised Edition*. Philadelphia: American Philosophical Society.
- Smith, Lindsey. 2015a. “Not Safe to Drink: This mom helped uncover what was really going on with Flint’s water.” Michigan Radio, December 14, 2015.
- . 2015b. “Not Safe to Drink: How people in Flint were stripped of a basic human need: safe drinking water.” Michigan Radio, December 15, 2015.
- . 2015c. “Not Safe to Drink: After ignoring and trying to discredit people in Flint, the state was forced to face the problem.” Michigan Radio, December 16, 2015.
- Smith, N. 1984. *Uneven development: Nature, capital and the production of space*. Oxford, UK: Basil Blackwell.
- Snow, David A. 2013. “Framing and Social Movements.” In *The Wiley-Blackwell Encyclopedia of Social and Political Movements*, ed. D. A. Snow, D. Della Porta, B. Klandermans and D. McAdam.
- Snow, David A. and Robert D. Benford. 1992. "Master Frames and Cycles of Protest." Chapter 6 in *Frontiers in Social Movement Theory*, ed. A. Morris and C. Mueller. New Haven, CT; Yale University Press.
- Spicuzza, Mary. 2017. Milwaukee launches lead awareness campaign. *Milwaukee Journal Sentinel*. February 3.
- Stone, Jeff, Carrie Lewis, and Ghassan Korban. 2016. Milwaukee water works letter and commission response.

- Squires, Gregory D., William Velez & Karl E. Taeuber. 2014. "Insurance Redlining, Agency Location, and the Process of Urban Disinvestment" *Urban Affairs Review* 26 (4): 567 - 588.
- Tarrow, Sidney G. 1998. *Power in Movement: Social Movements and Contentious Politics*. New York: Cambridge University Press.
- Tilly, Charles. 1978. *From Mobilization to Revolution*. Reading, MA: Addison-Wesley.
- Towers, G. 2000. "Applying the political geography of scale: grassroots strategies and environmental justice." *Professional Geographer* 52 (1): 23-36
- Trueman, Benjamin F., Eliman Camara & Graham A. Gagnon. 2016. "Evaluating the Effects of Full and Partial Lead Service Line Replacement on Lead Levels in Drinking Water" *Environmental Science & Technology*. 50 (14): 7389-7396.
- Warren, C. 2001. *Brush with Death: A Social History of Lead Poisoning*. Baltimore: Johns Hopkins University Press.
- Wisconsin Department of Public Health Services. 2014. "2014 Report on Childhood Lead Poisoning in Wisconsin."
- Zimmerman, Jeffrey. 2008. "From brew town to cool town: Neoliberalism and the creative city development strategy in Milwaukee." *Cities* 25. 4 (8): 230-42.
- Zupan, Sandra. 2011. "Enacting an Equitable Agenda: Exploring Community Strategies in Milwaukee's Inner-city Redevelopment." *Urban Geography*. 32 (7): 1043-65.

8 - APPENDICES

Appendix A - Milwaukee Water Works letter to LSL property owners

Milwaukee Water Works

Safe, Abundant Drinking Water.

Dear Milwaukee Water Works Customer,

With recent national attention focused on reported cases of lead in drinking water in other cities, we are reaching out to homeowners/occupants whose homes were built before 1951 with information about the safety and quality of water we provide. Your property is among the approximately 70,000 properties in Milwaukee built before 1951 that likely were built with lead service lines.

Years ago, lead was used in paints, plumbing, and other products. Lead can cause health problems if it accumulates in your body. The most common source of lead is from paint in buildings built before 1978.

Lead is not found in Milwaukee's source water, Lake Michigan, nor is lead in our treated drinking water. Your water meets all federal guidelines for safety.

However, lead can enter the water as a result of the wearing away of materials containing lead in service lines or internal plumbing. When water stands for several hours in fixtures or pipes that contain lead, the lead may leach into the water. The amount of lead will vary depending on how much water is used in your home and how often it is used. Since 1996, Milwaukee Water Works (MWW) has safely treated our water with a compound that forms a protective coating inside pipes to control lead dissolving into the water.

Physical disturbance of the piping, such as water main replacement, main breaks, or service line leaks, may also release lead into the water. In the event of a leak or other disruption to your service line, MWW will contact you and provide information on how to reduce the risk of lead exposure.

We are providing you with steps you can take to further reduce your risk of lead exposure. These actions are especially important for children in your household under the age of 6 and women who are pregnant or breastfeeding.

- 1. Flush your plumbing.** Before using tap water for drinking or cooking, flush your plumbing by running the kitchen faucet (or any other tap from which you take drinking or cooking water) on cold for a minimum of 3 minutes, and longer if necessary, until the water stream is noticeably colder. This is especially important if your water has been sitting in your pipes for more than 6 hours.
- 2. Use only cold water for cooking and drinking.** Households with residents that include children under the age of 6, and pregnant and breastfeeding women should consider using bottled water or filtered tap water for formula, concentrated juices, cooking and drinking.
- 3. To reduce the possibility that small particles that may contain lead might accumulate at your faucet, remove the screen and aerator from the end of faucets, rinse out any debris, and re-attach.**
- 4. A home filtration system or water filtering pitchers can further reduce the possibility of lead entering your drinking water.** Find a list of products at milwaukee.gov/water.
- 5. A licensed plumber can help you assess the cost and feasibility of replacing your lead service line or interior plumbing.**

Milwaukee's water is safe and affordable, and the City of Milwaukee will ensure it remains that way. For more information on lead and drinking water, call (414) 286-CITY and visit milwaukee.gov/water and milwaukee.gov/health.

Sincerely,

Milwaukee Water Works
841 N. Broadway, Room 409
Milwaukee, WI 53202

Appendix B – List of interview participants

Name (if applicable) and occupation / affiliation	Interview Type
Robert Miranda, Founder of FLAC	Phone interview, In-person interview
FLAC partner/organizer	In-person interview
Director of FLAC partner organization	Phone interview
Community Advocate	Phone interview
Milwaukee Budget Specialist	Phone interview
Milwaukee Fiscal Planning Specialist	Phone interview
Community organizer, FLAC partner organization	In-person interview
FLAC activist	In-person interview
FLAC activist	In-person interview

Appendix C – List of interview questions

- When did you first find out about Milwaukee’s lead laterals?
- How did you find out about Milwaukee’s lead laterals?
- What do you know about where Milwaukee’s lead laterals are located?
- Is your home / neighborhood impacted by Milwaukee’s lead laterals?
- Do you know if your home is one of the addresses with potential lead laterals?
- What do you understand to be the risks posed by the lead laterals?
- In your opinion, for whom do the lead laterals pose the greatest risk?
- What actions, if any, have you taken in your own life to minimize the risks (as you understand them)?
- What actions, if any, do you plan to take in the future to minimize the risks (as you understand them)?
- How have you decided which actions to take to minimize the risks?
- What actions have you seen the city undertake to minimize the risks posed by the lead laterals?
- What further actions do you believe the city should take?
- What is your relationship to FLAC (the Freshwater for Life Action Coalition)?
- Are you involved in any of FLAC’s efforts? If so, how? If not, why?
- What do you understand to be FLAC’s mission?
- Do you agree with FLAC’s mission? If not, why not? If not entirely, in what ways?
- What actions have been undertaken by FLAC to minimize the risks posed by the lead laterals?
- What further actions do you expect them to take?
- In your opinion, are certain Milwaukeeans more involved than others in this social movement? If so, who?
- In your opinion, what drives Milwaukeeans to be more / less involved in this movement?