

**The Policy Failures of Rental Housing: Plumbing Poverty in Detroit, Michigan**

by

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## Abstract

“Plumbing poverty,” or the lack of access to in-home water for drinking, cooking, and sanitation due to inadequate plumbing infrastructure, is a growing challenge in the U.S. and affects renters at a higher rate than homeowners. At the nexus of housing and water, plumbing poverty has critical health and equity implications for renters. While most cities have regulatory structures that govern rental housing, plumbing poverty persists. Little research has been done to investigate the social, political, and policy dynamics that perpetuate such rental water insecurity. Understanding these dynamics is essential for creating effective policies that protect renters from plumbing poverty.

This paper investigates why rental housing policies in Detroit, Michigan have failed to ensure adequate plumbing infrastructure and access to water for renters. To situate the scale of plumbing poverty for Detroit renters, I analyzed descriptive quantitative and spatial data on selected demographic characteristics of Detroit renters. Additionally, I conducted interviews to understand why Detroit renters struggle with plumbing poverty despite regulatory protections, and what barriers exist to addressing rental plumbing poverty in Detroit.

Ultimately, I find that plumbing poverty for Detroit renters is perpetuated by the implementation of City policies and tools that is underinformed and misaligned with the socio-economic dynamics of rental housing in Detroit. Central to these dynamics is a cycle of financial instability and reduced capacity in renters, landlords, and the city government. These dynamics of instability leave renters without social power and economic mobility, landlords without capital, and the City without meaningful policy tools.

*Keywords:* Water, Housing, Policy, Environmental Justice

## Introduction

### Study Motivation

“Plumbing poverty,” or the lack of access to in-home running water for drinking, cooking, sanitation, and personal health due to inadequate plumbing infrastructure, is a growing and critical challenge in the United States. At the nexus of housing and water, plumbing poverty has critical health and equity implications for vulnerable households without the capacity to repair the infrastructure that supports water access and affordability. Prominent examples of plumbing poverty include corroded or deteriorated piping that creates low water pressure or prevents water from running altogether; a lack of bathroom infrastructures such as running toilets, bathtubs, or sinks; and broken or inadequate faucets and sinks in bathrooms and kitchens. Because a lack of adequate plumbing infrastructure prevents in-home water access, plumbing poverty presents a significant threat to household water security.

Plumbing poverty significantly impacts residents’ health due to the broad range of physical and mental health effects that result from water insecurity. These physical effects include personal hygiene, disease transmission, sanitation, and nutrition (Aguilar, 2021; Young et al., 2021). Water insecurity also has significant mental health effects, as lack of access to water has been found to be a significant psychological and social stressor inducing feelings such as “heightened worry, anger, frustration, and distress” among water insecure people (Gaber et al., 2021; Young et al., 2021). As a result, we see there are multiple negative health impacts for those suffering from plumbing poverty.

There are also major environmental justice problems related to plumbing poverty as a threat to water security. Specifically, water insecurity has disparate impacts on those with marginalized identities, such as racial and economic minorities, as a lack of access to water via in-home plumbing has been found to disproportionately affect communities of color (Gasteyer et al., 2016;

Meehan et al., 2020b; Wescoat et al., 2007). For example, from 2006 to 2010, the percent of white people lacking plumbing in the U.S. states was just .45%, while it was .7% for Hispanic people, .78% for Black/African American people, 1% for Native Hawaiian or Other Pacific Islander people, and 2.89% for American Indian or Alaska Native people (Gasteyer et al., 2016). Additionally, for households that are below the national poverty level, the rate of inadequate plumbing is “almost twice the national rate” (Wescoat et al., 2007, p. 806). Further compounding this issue is the fact that water insecure, low-income people are forced to purchase bottled water or utilize other time and resource-intensive methods to acquire water that is likely beyond their financial capacity (Young et al., 2021). Thus, understanding why plumbing poverty exists and how it can be addressed through policy has critical societal benefits for improving equity.

Renters in the U.S. are particularly vulnerable to water insecurity resulting from plumbing poverty. Previous studies on plumbing poverty have found that renters are at a greater risk of plumbing poverty than homeowners, despite the significant regulatory structures and policy protections in place for rental housing. On a national level, renters are 1.61 times more likely to lack piped water than owners in the 50 largest metropolitan areas in the United States (Meehan et al., 2020b). This indicates that despite extensive federal, state, and local policies and programs that aim to protect residents living in rental housing from health and safety issues, disrepair persists in rental housing markets and in the practices of property maintenance commonly neglected. Additionally, studying renters has critical implications for equity, as just 18.7% of homeowners in the U.S. identify as a non-white race, while 37.3% of renters identify as a non-white race (U.S. Census Bureau, 2020). Renters are also more socioeconomically disadvantaged since they do not have the asset wealth of owning a home, which affects intergenerational wealth and economic mobility. These factors ultimately motivate me to study plumbing poverty for

renters, where there is significant potential to improve housing equity with more effective institutional protections.

While it is known that plumbing poverty is harmful and pervasive among renters, there is little research on why it persists and how to fix it. Understanding why plumbing poverty is pervasive for renters provides an opportunity to support the health and livelihoods of a largely disadvantaged, vulnerable population. However, to do so, we must understand why rental policies and programs intended to protect renters appear to be failing. Yet, little research has been done to investigate the social, political, and policy dynamics that underpin and perpetuate rental water insecurity at the housing-water nexus.

To address this research gap, I studied plumbing poverty for renters in Detroit, Michigan to understand exactly *why* plumbing poverty persists and what *barriers* exist to addressing it. I investigated these two research questions within the context of Detroit rental housing via interviews with a range of stakeholders coupled with a quantitative analysis of plumbing poverty and a review of relevant literature. Researching these questions within the context of a specific city allowed me to delve deeply into the elaborate system of actors operating within the housing-water nexus. In Detroit, this included landlords, renters, community organizers, city government employees such as inspectors and those working in compliance, and tenancy lawyers. Ultimately, I aimed to understand plumbing poverty from the positions and perspectives of each of these actor groups both independently and in relation to one another.

For my first research question, I find that a history of housing mismanagement and a lack of context-driven policy implementation have led to the emergence of two types of unresponsive landlords who fail to properly maintain their rental properties. Answering the second research question, I find that the tools available to Detroit renters for addressing these disrepair issues are



either not utilized by the renters due to social power dynamics, are inaccessible due to a lack of capacity and resources, and/or suffer from structural issues which disadvantage renters and inhibit tangible housing improvements. Additionally, I find that the Detroit city government suffers from capacity constraints that hinder the effective implementation of their rental ordinance. Collectively, I find that these issues produce and perpetuate plumbing poverty among renters in Detroit. Understanding these factors is imperative for improving rental housing policy design and ensuring effective implementation of local ordinances and renter tools in Detroit and similarly situated cities to guarantee both water security and affordable, habitable rental housing.

## **Related Literature and Gaps**

### ***Literature on Plumbing Poverty***

A few prominent studies on plumbing poverty and environmental justice provide important statistical findings that illuminate the importance of further research. One prominent study on plumbing poverty by Meehan et al. (2020b) introduced the term “housing-water nexus” and quantified the household water insecurities that occur at this nexus across geographical spaces. This study finds significant equity implications for plumbing poverty and introduces renters as an important subpopulation for plumbing poverty, noting that “unplumbed households are more likely to be headed by people of color, earn lower incomes, live in mobile homes, rent their residence, and pay a higher share of their income towards housing costs” (Meehan et al., 2020b, p. 2). A study from Gasteyer et al. (2016) echoes these equity-related findings, using spatial and statistical analysis on a county level to find that incomplete plumbing was correlated with lower percentages of education levels and higher percentages of people unemployed. Additionally, this study finds that the highest levels of plumbing poverty occur among non-white races in the United States. An older study from Wescoat, Headington, & Theobald (2007) found

similar results, indicating that “renter, multifamily, and Hispanic households” face greater levels of incomplete plumbing (p. 806). Ultimately, the findings from these previous studies serve as the impetus for this study, as they indicate the important need for further research on rental plumbing poverty as an environmental justice imperative.

These three studies provide important statistical insight into who is suffering from plumbing poverty and where people are suffering from it. However, these critical studies fail to address two important questions: *why* plumbing poverty persists and *what* perpetuates it among certain highly affected subpopulations of people in the U.S., such as renters. Moreover, there is a lack of qualitative research studies aimed at understanding the institutional and socio-political factors surrounding plumbing poverty. This study aims to help fill those gaps.

To frame my study around these gaps, I utilized the critical starting points for further research identified by Meehan et al. (2020b), which identifies a need for further research on the connections between housing policy and water policy as a critical point of study for understanding what produces and perpetuates plumbing poverty in the United States. Further suggestions from this paper include an important need for case studies to delve into such dynamics and to investigate the housing policies and practices that “lay the foundations for insecure water access” (Meehan et al., 2020b, p. 5). In a separate study, Meehan et al. (2020a) suggest the need for clarification on the “legal, political, and socioeconomic dynamics” that produce and perpetuate water insecurity (p. 10). Based on these suggestions for further research, this study addresses gaps in the literature by investigating the social, political, and policy dynamics that underpin and perpetuate plumbing poverty for renters. Researching these dynamics is vital to helping us understand why plumbing poverty persists among renters, despite significant institutional protections.

### *Literature on Renter Vulnerability*

Several previous studies have introduced renters as a highly vulnerable population. A study from the University of Michigan's Poverty Solutions found that 7.5% of United States renters suffered from "moderate or severe physical issues" with their properties as of 2017 (comparatively, the same number for U.S. homeowners was 3.5%) (Ruggiero et al., 2020, p. 7). From the findings of the Meehan et al. (2020b) and Wescoat, Headington, & Theobald (2007) studies described above, we also see that renters are more likely to suffer from plumbing poverty than owners in the United States as a whole. Additionally, renters may also be particularly vulnerable to housing disrepair given the power dynamics between landlords and renters based on a 2019 policy brief from Local Progress on Housing Code Enforcement. This brief explains that since renters are the ones that make complaints to the city government about property disrepair issues, they may "be at risk" and "fear retaliation" from their landlords – causing them to not report property disrepair issues (Local Progress, 2019, p. 78). In need of further investigation is how to address these barriers that renters may face due to their disadvantaged power positions in landlord-tenant relationships to help reduce the high levels of housing disrepair and plumbing poverty for U.S. renters. My study researches these barriers and begins to fill this vital gap.

Another study from Ross (1996) finds that the implementation of city rental ordinances via property inspectors significantly disadvantages low-income renters. According to the study, low-income renters are more vulnerable to disrepair issues because city inspectors were found to use discretionary enforcement more in low-income neighborhoods than middle- and high-income neighborhoods, which means that houses are not as maintained to habitable standards. While the intentions of inspectors doing this may be to reduce the burdens on low-income landlords or to

avoid property abandonment, homes in low-income neighborhoods are not being inspected to the same degree as homes in middle- and high-income neighborhoods (Ross, 1996,). Additionally, this study explains how low-income ownership of properties makes it difficult to keep properties maintained and habitable, which indicates that renters with low-income landlords may be particularly vulnerable. For example, another report finds that housing code enforcement may highly affect low-income landlords and renters as inspectors may “require changes that are simply not economically feasible” for landlords and renters (Local Progress, 2019, p. 78). This study indicates some important social and economic dynamics that appear to be playing out between landlords, renters, and city employees, as well as potential barriers that landlords may face for property maintenance. My study aims to build on these findings using Detroit, Michigan as a case study to further investigate how such dynamics may contribute to rental ordinances and renter tools which do not protect renters from property disrepair – a problem that is prominent in Detroit.

## **Case Study**

### ***Selecting Detroit, Michigan***

I selected Detroit as my case study city due to the prominence of plumbing poverty in the city and the city’s issues with inadequate housing stock, particularly for renters. Meehan et al. (2020b) estimate that Metro Detroit, one of the 50 largest metros in the United States, had 5,490 households without piped water, which equated to about 11,560 people in the Detroit metro area. Further, one of the most prominent property disrepair issues in Metro Detroit is water leakage, with about 12% of all occupied properties having water leaks (Ruggiero et al., 2020). Water leakage is one example of plumbing poverty which affects both water access and affordability. These statistics indicate that plumbing poverty is a significant and relevant problem for

Detroiters and those living in the surrounding metropolitan area. More generally, Detroit also suffers from significantly inadequate and uninhabitable housing in the city. One study found that in 2017, there were 84,600 properties, or about 5% of all occupied housing units in Metro Detroit, that suffered from severe or moderate housing inadequacy (Ruggiero et al., 2020). There are also significant disparities in housing inadequacy for Black residents, those making less than \$20,000 a year, those with disabilities, and renters in Metro Detroit (Erb-Downward & Merchant, 2020; Ruggiero et al., 2020). For both owners and renters in Detroit, a recent study on housing stability in Detroit found that the city does *not* have enough habitable housing specifically for its low-income residents, indicating severe housing disrepair issues in the city (Erb-Downward & Merchant, 2020). Looking specifically at tenancy, renters in Metro Detroit have been found to be about “twice as likely to live in inadequate housing” as compared to homeowners (Ruggiero et al., 2020, p. 11) With high levels of plumbing poverty and high levels of housing uninhabitability for renters, Detroit presents a unique opportunity to investigate how rental housing policies and practices on a local level have failed to protect renters from plumbing poverty.

### ***Detroit Rental Housing History***

Detroit’s housing market has faced significant problems with housing affordability in the past few decades. Housing affordability in the city of Detroit is important since the city had a 35% poverty rate in 2019 (compared to 10.5% nationally the same year) and a 2019 adjusted median household income of \$30,968 (Jessica Semega et al., 2020; Social Explorer & U.S. Census Bureau, 2019). Exacerbating already high levels of poverty and low income in the city, Detroit has an extensive history of widespread housing foreclosures affecting its most vulnerable residents.

The first problem was a series of mortgage foreclosures that happened in the mid to late 2000s following an increase in “property values and rents despite continuing population loss” (Dewar et al., 2020, p. 317). This caused an increase in the demand for rental housing from those homeowners that lost their properties. These widespread foreclosures resulted from the harm that Detroit’s housing market endured from the country-wide recession during this time. Within the last decade, the city has experienced another wave of foreclosures because of tax delinquency due to the city’s history of overvaluing properties. This overassessment of housing values in the city led to exorbitantly high property taxes and forced people out of their homes when they couldn’t pay (Dewar et al., 2020; Stein, 2022). The Detroit Free Press reports that this resulted in 100,000 Detroit residents losing their homes to tax foreclosure from 2010 to 2016 when the City “overtaxed homeowners by at least \$600 million” (Stein, 2022). Looking at both waves of foreclosures together, from 2005 to 2015, about half of the homes in Detroit underwent a tax or mortgage foreclosure (Erb-Downward & Merchant, 2020). With so many people losing their homes during these extensive foreclosures, demand for rental housing increased along with rent prices (Dewar et al., 2020).

This trend continues, as the availability of low-income housing was still declining in the city as of 2017 (MacDonald, 2017a). Detroit’s housing stock is now occupied predominantly by renters, with rental properties comprising 52.8% of all occupied housing units and 47.3% of these renter-occupied units being single-family homes, based on the U.S. Census American Community Survey’s 2015-2019 estimates (Social Explorer & U.S. Census Bureau, 2019). This history has ultimately resulted in a weak housing market with undervalued homes in the city of Detroit.

A third problem is that Detroit suffers from pervasive housing uninhabitability with important equity implications. A recent study finds that, in Detroit, there is “insufficient habitable housing to meet the needs” of low-income Detroiters (Erb-Downward & Merchant, 2020, p. 1). According to the study, with the short availability of habitable housing in the city, about 9% of the city’s households must either live in disrepair, move elsewhere, or live in households with multiple families. A different study also found that 10% of low-income Metro Detroiters live in uninhabitable properties (Ruggiero et al., 2020). This widespread disrepair is due in part to the fact that 53.7% of the city’s occupied housing units were built *before* 1950 yet have not undergone any significant maintenance investments (Social Explorer & U.S. Census Bureau, 2019). A prime example of these age-related disrepair issues is when water was shut off for many Detroiters during the COVID-19 pandemic due to a lack of payment, and many of these homes’ water service could not be restored due to aging and deteriorated water pipes (Ferretti, 2020). Additionally, other research has found that significant racial disparities exist for housing habitability in the city. Ruggiero et al., 2020 found that 11% of Black households in Metro Detroit do not have adequately maintained homes, while just 3% of white households face this issue. For a national comparison, these same numbers are 7% and 4%, respectively (Ruggiero et al., 2020).

A final problem is Detroit’s long history of little code enforcement of its rental ordinance while just recently increasing enforcement measures (MacDonald, 2017c). According to an investigation from The Detroit News, the City has not been adequately enforcing its rental ordinance for over a decade, letting “landlords ignore inspection rules” during this time (MacDonald, 2019). However, in early 2018, the City attempted to change this by initiating a zip code-based enforcement measure intended to inspect rental properties in the city and ensure they

can pass health and safety inspections (MacDonald, 2019). They also updated their rental ordinance at this time to improve tools for renters, including a new rule allowing renters to withhold their rent and put it in an escrow account if landlords are not making repairs (MacDonald, 2018). However, the progress of the enforcement effort and the updated ordinance has been slow. In 2019, just a year after this enforcement measure was instituted, only 10% of the city's registered rental properties -- just a small fraction of the total rental properties operating in the city -- had obtained the necessary rental housing certificates to operate in the city (MacDonald, 2019).

The result of all this is that renters in Detroit have few options to address repair issues and may lack the capacity to challenge their landlords, meaning that tenants in Detroit often face eviction or move to new properties to escape the housing situations they are currently in (MacDonald, 2017c, 2017b). In Detroit, there are 35,000 eviction cases each year on average, and in 2017 "13% of residents reported being evicted or losing their housing" in the city (Erb-Downward & Merchant, 2020, p. 1; MacDonald, 2017c). Ultimately, we see that Detroit's rental ordinance and available tools have been generally ineffective at improving property habitability and housing stability for renters in the city.

### ***Scale of Rental Plumbing Poverty in Detroit***

Currently, the city of Detroit contains an almost even mix of homeowners and renters, with those who rent their places of residence comprising 49.8% of the city's total population and 52.8% of all occupied housing units (Social Explorer & U.S. Census Bureau, 2019). This high level of renters in the city is representative of a trend in the city towards increased tenancy after the two big foreclosure crises in the city in the 2000s and 2010s. For example, in 2010, only 45.5% of the city's occupied housing units were rental properties, compared to almost 53% now



(Social Explorer & U.S. Census Bureau, 2010). These numbers indicate the prominence and growth of rental housing in the city, which is relevant for this study as it investigates whether renters have the proper policy protections to protect them from plumbing poverty.

Detroit is also a majority Black city, and 79.5% of all occupied housing units or households are owned or rented by Black Detroiters (Social Explorer & U.S. Census Bureau, 2019). Interestingly, tenancy rates are higher among Black Detroiters than at the citywide level, with 54.1% of housing units occupied by Black Detroiters being rented (Social Explorer & U.S. Census Bureau, 2019). According to the same data, when we broaden this to the entire non-white population in the city of Detroit, similar statistical breakdowns are present, with 53.6% of all non-white-occupied housing units or households being rented. Meanwhile, these data show that the opposite is true for white, non-Hispanic or Latinx Detroiters, as a majority of these residents' housing units are owned rather than rented. While not a drastic margin, these numbers indicate that the rate of tenancy is higher among Black and non-white-identifying Detroiters than the city as a whole. With higher rates of tenancy among Black and other non-white Detroiters, the equity implications for this research on rental plumbing poverty and renter protections are numerous.

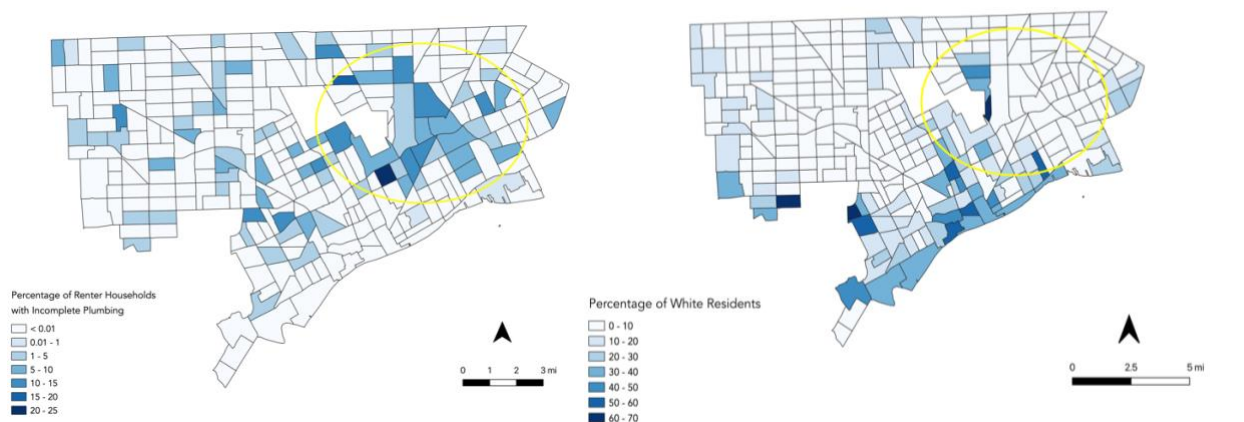
Detroit renters are also more socio-economically vulnerable than homeowners in the city. Census data show that the 2019 adjusted median household income for owner-occupied housing units in Detroit was \$40,990, while it was just \$22,716 for renter-occupied households (Social Explorer & U.S. Census Bureau, 2019). Comparatively, the 2019 median household income in Detroit as a whole in 2019 was \$30,968, while in the United States it was \$68,703 (Jessica Semega et al., 2020; Social Explorer & U.S. Census Bureau, 2019). Despite such a low median household income for renters, they are faced with high rents and high cost-burdens. For example, the median gross rent in Detroit in 2019 was \$824, while 53.1% of Detroit renters pay more than

30% or more of their income on rent (Social Explorer & U.S. Census Bureau, 2019). Meanwhile, these data show that just 27.2% of homeowners in Detroit pay at least 30% of their income toward homeownership costs. As a result of these factors, there is a lack of affordable rental housing in the city, with a study from 2015 finding that “a majority of rental households could not find affordable housing” in that year (Dewar et al., 2020, p. 319). Additionally, Detroit renters are disadvantaged socio-economically due to low levels of education. In 2019, 19.4% of Detroiters who lived in renter-occupied households had less than a high school degree and only 13.1% had a bachelor’s degree or higher (Social Explorer & U.S. Census Bureau, 2019). These data show that the same numbers for homeowners in the city are 14% and 21.4%, respectively. Overall, these data are indicative of the economic vulnerability of renters and their lack of economic mobility, as compared to Detroit homeowners. This lack of financial capacity for Detroit renters is important in understanding how rental plumbing poverty is produced via financial incapacities.

Looking specifically at levels of plumbing poverty, I use the U.S. Census category of “incomplete plumbing” to indicate levels of plumbing poverty. Using this category, we see that in 2019 there were 1,465 renter-occupied housing units facing plumbing poverty in Detroit (U.S. Census Bureau, 2021). Levels of plumbing poverty for Detroit homeowners are also similar to those of renters, with 1,483 owner-occupied housing units facing plumbing poverty in 2019 (Social Explorer & U.S. Census Bureau, 2019). While these numbers represent just a fraction of the total housing units in Detroit, plumbing poverty at any level is unacceptable given the health and equity implications of a lack of access to complete plumbing. Further, they indicate that there is some need for policy reform, as current protections are failing to protect these households from plumbing disrepair issues.

Investigating beyond what descriptive statistics can tell us about Detroit renters with plumbing poverty, geographical analysis provides some further insights into the characteristics of renters suffering from plumbing poverty. Below on the left is a map of the percentage of renter households with incomplete plumbing by Census tract in Detroit. Circled in yellow is what appears to be a primary hotspot for rental plumbing poverty. Comparatively, we see a map of Detroit Census tracts by their percentage of white residents to the right of the rental incomplete plumbing map.<sup>1</sup> Circled in yellow on this map is the same area that is circled on the plumbing poverty map on the left. These maps indicate that where a large “hotspot” of rental incomplete plumbing is concentrated is not geographically similar to where white Detroiters are concentrated. While not statistically tested, these maps provide some initial evidence that non-white Detroiters are bearing the brunt of rental plumbing poverty in comparison to white Detroiters -- revealing the spatial dimensions of plumbing poverty within the city.

**Figure 1:** Maps comparing rental plumbing poverty and white resident concentrations in Detroit, MI



<sup>1</sup> I compare the map of incomplete plumbing to that of White residents instead of Black or other non-white residents because Detroit residents are primarily people of color. Thus, hotspots for comparison would not be as apparent between the two maps since non-white residents make up the majority of Detroiters.

### ***Policy Context***

With an understanding of the scale of rental plumbing poverty in Detroit, we can now focus on the policy context, specifically at the city level in Detroit, since this is where direct policy action and change can happen more quickly for rental housing. However, one relevant state law which sets the local requirements for rental codes in Michigan is the Housing Law of Michigan (MCL 125.401). This law allows cities in the state of Michigan to regulate multi-family rental housing and requires that rental properties have a Certificate of Compliance in order to legally have tenants (*Rental Requirements*, n.d.). The City of Detroit also has a rental ordinance to regulate one- and two-family rental properties. This ordinance and the associated code requirements play a critical role in local rental housing maintenance in Detroit (*Rental Requirements*, n.d.).

Chapter 8 of Detroit's City Code regulates Property Maintenance and has several requirements to ensure that landlords are operating safe and healthy rental properties. Article XV, Division 3, Section 8-15-81 of this code requires that landlords register their properties with the City of Detroit's Buildings, Safety, Engineering, and Environmental Department (BSEED) by getting a "Certificate of Registration" (City of Detroit, 2022). Next, the Section 8-15-82 of the same code says that it is unlawful for a landlord to rent out their property (either by allowing it to be occupied or by collecting rent from a tenant occupying the property) without having a "Certificate of Compliance" for the property. The process of obtaining a Certificate of Compliance requires each landlord to pay all fines, to have an inspection (either from a city inspector or from a third party inspector), and to obtain a lead inspection and risk assessment in order to get a lead clearance (City of Detroit, 2022; *City of Detroit Landlord Guide*, 2021). These

requirements must be done every few years – see the table below for the City of Detroit’s rules on the frequency of these requirements (*City of Detroit Landlord Guide*, 2021).

Rental property inspections can be prompted by complaints from residents, observations from a Detroit Building Official, requests from property owners, and other various methods (City of Detroit, 2022). This inspection requires properties to be in compliance with the property maintenance requirements, both externally and internally, and requires landlords to pay a fee for the inspection (*City of Detroit Landlord Guide*, 2021). For plumbing specifically, Article XV, Division 4 of the city code requires that the landlord “shall provide and maintain facilities, fixtures, and systems for the plumbing and drainage” with all plumbing fixtures “maintained in good repair” without “leaks or defects” and in a “safe, sanitary, and functional condition” (City of Detroit, 2022). This code also requires that plumbing fixtures supply water without defects and leaks and that “bathtubs, kitchen sinks, laundry facilities, lavatories, and showers” supply both hot and cold running water, and that this water be free from contamination. The landlord cannot have tenants if they are not in compliance with these plumbing maintenance requirements. Interestingly, if the City finds that there is a plumbing-related issue (and other types of violations) that “endangers the health, safety, or welfare of the occupants,” then they can order the property to be closed and vacated or have the water supply cut (City of Detroit, 2022). While this importantly moves tenants out of hazardous situations, it leaves tenants without a property to live in.

**Figure 2:** Detroit’s Rules on the Frequency of Property Registration and Inspection (City of Detroit Landlord Guide, 2021) (edited to be black & white)

		<b>1 OR 2 UNIT STRUCTURES</b>	<b>3+ UNIT STRUCTURES</b>
1. REGISTRATION	FREQUENCY	Complete initial registration and renew annually on unique registration date	
2. RENTAL INSPECTION	FREQUENCY	Complete and pass initial rental inspection and complete a renewal inspection every three years.	Complete and pass initial rental inspection and complete a renewal inspection every two years.
	INSPECTOR	City certified, Third Party Inspection Companies	City of Detroit Inspectors
3. LEAD INSPECTION AND RISK ASSESSMENT (LIRA), AN LEAD CLEARANCE	FREQUENCY	Complete and pass lead inspection and risk assessment (LIRA) and receive a lead clearance initially to obtain a certificate of compliance. See section 3 for details on lead inspection frequency.	
	INSPECTOR	State licensed Lead Inspection companies.	

If the property passes the above property maintenance requirements, then it receives a Certificate of Compliance from the City and can legally operate. If a landlord does not have a Certificate of Compliance for the property, then the tenants that live there can put their rent into an escrow account through BSEED (City of Detroit, 2022). This escrow tool was added into the rental ordinance in 2017 to give renters an additional tool for ensuring they are living in safe and healthy home environments. Additionally, Article XV, Division 3, Section 8-15-98 of this code says that it is unlawful for a landlord to terminate a renter for the “purpose of avoiding compliance with any section” of the rental code (City of Detroit, 2022). Lastly, Article XV, Division 2, Section 8-15-36 of the code requires that any violations of the rental property maintenance codes are considered “blight violations” and will result in tickets for the property owner. City officials can also “suspend or deny” a Certificate of Compliance if an owner has a blight violation or is delinquent on property taxes without a tax repayment plan (City of Detroit,

2022). The ticket structure for violations of the rental codes and requirements can be seen in the table below. Overall, Chapter 8 of Detroit’s City Code provides landlords with several requirements to ensure maintained properties and renters with some tools to alleviate disrepair issues.

*Figure 3: City of Detroit’s Ticketing Structure for Rental Property Violations(City of Detroit Landlord Guide, 2021)*

SECTION 4 ENFORCEMENT 39

**Rental Tickets**  
Rental Ordinance can be ticketed by Property Maintenance for the following issues on table below

**Table 4.1 Rental Tickets and Violations**

Violation	First Offense	Second Offense	Third Offense
Failure to Register	\$250.00	\$350.00	\$500.00
Failure to obtain a lead clearance 1-2 family rental properties	\$500.00	\$1,000.00	\$2,000.00
All other rental properties (except for buildings with five or more stories)	\$1,000.00	\$2,000.00	\$4,000.00
Rental properties with 5 or more stories	\$2,000.00	\$4,000.00	\$8,000.00
Failure to obtain a Certificate of Compliance	\$250.00	\$500.00	\$1,000.00

**Emergency Tickets**  
A rental property can also receive an emergency ticket if the subject property poses an imminent danger, is in unsafe or unsanitary condition, or if unlawful occupancy is occurring. The table below displays the fines associated with emergency tickets:

**Table 4.2 Emergency Tickets and Violations**

Type of Property	First Offense	Second Offense	Third Offense
One- or two-family dwelling	\$500.00	\$1,000.00	\$1,500.00
All other structures, except buildings with five or more stories	\$1,000.00	\$1,500.00	\$2,000.00
Buildings with five or more stories	\$1,500.00	\$3,000.00	\$5,000.00

**Vacant Property Tickets**  
Vacant properties that are not in compliance can be ticketed by Property Maintenance for the following issues:

There are also several other policies and legal tools available to landlords and renters in the City of Detroit relevant to rental plumbing poverty. Primarily, landlords can take renters to the city’s 36<sup>th</sup> District Court for eviction. Landlords can evict tenants for various reasons, including the non-payment of rent, causing health hazards, causing damage, illegal use of the property, and other various reasons (*Common Questions about Eviction, 2018*). Tenants are also vulnerable to eviction at any time if they have no lease or are on a month-to-month lease (*Common Questions about Eviction, 2018*). However, tenants have several means to fight

eviction. Primarily, renters can fight eviction for rent non-payment by using evidence of disrepair issues that the landlord has neglected to fix if they have been putting their rent into an escrow account. Additionally, landlords are not allowed to remove a tenant or lock them out from a property by making the home unlivable without a court eviction order (*Common Questions about Eviction*, 2018). If the landlord does attempt to illegally evict a tenant, then the tenant can bring their landlords to court.

Interestingly, the state of Michigan's "Anti-Lockout Law" characterizes an illegal lockout that forces eviction not only as a physical changing of locks, but also includes the use of threats or force by a landlord to remove a tenant and stopping a service to the property that is "so essential that its termination or interruption would constitute constructive eviction" such as "heat, running water, hot water, electric, or gas service" (Kershaw, Vititoe, & Jedinak, PLC, 2018). In addition to the lockout law, tenants can also fight eviction from their landlords in court by refuting the landlord's claims using evidence of disrepair issues that the landlord has failed to repair. Lastly, tenants have other tools available to address disrepair issues such as making a complaint to the City that prompts an inspection and making the needed repairs themselves and deducting the costs from their rent (*Common Questions about Eviction*, 2018). Importantly, landlords are *not* allowed to evict tenants for making a complaint to the City for a repair issue in their property (*Common Questions about Eviction*, 2018). Overall, these legal tools can aid renters in fighting evictions.

A small number of programs from community organizations also play an important role in helping renters address their disrepair needs within the state and local policy context. However, few organizations offer programs for renters, and only one organization in the city, Wayne Metropolitan Community Action Agency ("Wayne Metro") offers plumbing repair-



related programs to renters (Ruggiero & Yan, 2022). Wayne Metro is a non-profit in Wayne County, Michigan serving moderate and low-income households that offers two plumbing repair-related programs to renters (Wayne Metropolitan Community Action Agency, n.d.). The first of these programs is the Water Residential Assistance Program (WRAP) which allows both homeowners and renters to get free water conservation and plumbing repairs costing up to \$2,000 if they have a high water bill and are low-income (Ruggiero & Yan, 2022). Additionally, Wayne Metro has an Emergency Plumbing Assistance Program which addresses issues of water access, toilets, bathroom sink faucets, showers and bathtubs, kitchen sink faucets, and laundry tubs (Wayne Metropolitan Community Action Agency, 2021). These programs provided by Wayne Metro fill an important gap for renters that need plumbing repair assistance that isn't being addressed by the other policy and legal tools available to them.

## Methods

To understand why plumbing poverty persists and what perpetuates it among Detroit renters, I conducted interviews with Detroit government employees, community stakeholders, landlords, and renters. Interviewing was selected over other methods due to the richness of experiences and perspectives that would be communicated through interviews with all participants. I found that eliciting such rich examples and experiences surrounding complex and sensitive topics would best help me understand the multi-dimensional dynamics underpinning my two primary research questions. As opposed to focus groups, interviewing allowed me to gather examples and insights from study participants that may be too private for a group setting but are imperative to understanding plumbing poverty in Detroit. Additionally, as an introductory study in this area, my selected methods allowed me to gather experiences from a diverse group of participants with an interest or involvement in Detroit rental housing and plumbing poverty. These diverse groups provided a range of insights across different proximities to the issue, from different positionalities and power positions, and from both the supply and demand side of rental housing in Detroit, which allowed me to answer the research questions more holistically. The importance and applicability of this method are supported by other studies which emphasize using a range of stakeholder interviews as a key method (Schreiber et al., 2020).

It is also important to acknowledge my positionality as the researcher in this study and how it may have affected data collection and analysis. I come from a position of educational and racial privilege from a large academic institution which gives me a lot of inherent power in interviews with those of different identities and in less privileged positions. This positionality may have affected how many of my renter interviewees perceived and interacted with me during interviews, as many of them were non-white with different educational backgrounds. These differences may have made renter interviewees warier about opening up to me on issues they

were facing, or worried that as a researcher I would exploit their answers to get them in trouble with their landlords, given the history of exploitative research done on predominantly BIPOC communities by white researchers. In particular, there is a history of work done in affiliation with my academic institution which has contributed to this exploitation. This history may have contributed to additional caution from my interviewees to fully engage with me. Additionally, these factors also may have affected which types of issues my renter interviewees talked to me about, since they may have perceived me to not fully understand or to understand them differently given my identity and privileged position. However, I believe that I was able to build trust, connection, and respect with my renter interviewees which helped relieve the potential for these issues. For analysis, I have a strong background in philosophy, gender and women's studies, and environmental justice, which may have primed me to be more aware or observant of social issues, identities, and power dynamics within my data than other researchers.

### **Data Collection and Analysis**

In total, I completed 32 semi-structured interviews via Zoom or phone call from November 2021 through February 2022 (due to the COVID-19 pandemic, interviews were all virtual). Interviews were recorded and subsequently transcribed. Outreach for potential interviewees was done over email, via text, by phone call, or via attendance at public community organization meetings. Study participants were organized into three interview groups: Detroit City Government, Community Organizations, and Renters & Landlords. The following details the participant groupings and interview details of each group:

- *Detroit City Government:* This participant group was composed of individuals that work for the City of Detroit within the departments and divisions related to housing, water, policy, and plumbing. Study participants covered the areas of rental inspection,

- rental compliance, and policy design, strategy, and implementation. In total, about 43% of those in this category that I reached out to completed interviews with me. These interviews lasted about one hour, with some lasting up to two hours. The interview inquired about a range of topics including these employees' experiences working with renters with plumbing issues, their knowledge and experiences with the design and implementation of local rental policies and programs, and their experiences and understanding of potential barriers to water access for renters.
- *Community Organizations:* The Community Organizations interview group was composed of various non-governmental organizations in Detroit that do work on housing, water, and plumbing in the city. Participants from this group encompassed lawyers focused on rental housing in the city and employees and volunteers of community-based aid and assistance organizations for housing and water/plumbing-related issues. The interview completion rate for this category was 47%. These interviews lasted between 30 minutes and one hour and covered a range of issues including these individuals' experiences working with renters with plumbing issues, background on what their organization does and how its programs work, their experiences working with city rental policies and programs, and their experiences and understanding of potential barriers to water access for renters.
  - *Detroit Renters and Landlords:* The final interview grouping was composed of renters and landlords/property managers currently or previously living and/or working in the city of Detroit. Both renters and landlords were mailed \$10 Visa gift cards as compensation for their participation in this study. Renters were accessed via collaboration with Wayne Metro. The potential participant pool for renters was

created by selecting individuals that both lived within the city of Detroit and rented their places of residence from the clients of Wayne Metro's Emergency Plumbing Repair Program and Water Residential Assistance Program (WRAP). Each program's narrowed client list was then randomized and groups of renters were randomly selected for participation outreach. Between both programs, I reached out to 166 total renters via texts from Wayne Metro. Based on the contact information passed on to me from Wayne Metro of those renters that replied to the text messages, I had a response rate to this outreach of 18.7%, or about 31 renters. About 20 of these renters conveyed some interest in participating in the study, and I then contacted them for interviews. Of these renters, 55% of them completed interviews. One additional renter was interviewed via a connection from a community contact, and three other community stakeholders from Interviewee Category #2 provided information on themselves or their family and friends in rental housing. These interviews lasted 20 to 40 minutes and delved into renters' experience in Detroit rental housing, their experiences with their landlords, their knowledge and utilization of their tenants' rights, any history of plumbing issues, experiences and barriers using available renter tools, and dynamics between themselves, their landlords, city officials, and the legal system. For landlords and property managers, I contacted various landlord organizations that operate within the city of Detroit, Wayne County, and the greater regional area via email and phone to connect with study participants. I had an interview completion rate of 60% for landlords and property managers. These interviews typically lasted about an hour and covered the landlord or property manager's role in the rental housing market, their relationships with their tenants and

the city government, repair issues in their properties and how they resolved them, barriers to maintaining rental properties, and their experiences with the City's rental ordinance and inspection enforcement.

After interviews were completed, they were transcribed and then were coded and analyzed using NVivo. The coding process sought out broad thematic patterns that were present across the three different participant groups in relation to the two primary research questions. An initial coding structure and approach was developed during the interview transcription process. Coding was subsequently completed using this structure and updated iteratively in response to new themes or ideas that emerged throughout the coding process. Subsequent analysis from the coding process was produced inductively to extract key themes and conclusions from the highly specific examples, experiences, and insights of the study participants from their respective positions within the housing-water nexus of Detroit.

## Study Findings

### Why do renters struggle with plumbing poverty?

Detroit renters struggle with plumbing poverty primarily due to a lack of landlord responsiveness facilitated by the mismanagement of the city's rental housing stock and lack of context-driven enforcement of its rental codes. These dynamics in Detroit have ultimately led to the advent of two types of landlords who are unresponsive. Although there are landlords who are responsive to repair needs, it is those that do not respond which contribute to plumbing poverty. Both of these unresponsive landlord types fail to address plumbing poverty but differ considerably in their scale, capacity, and motivations to respond to renter issues like plumbing disrepair. This unresponsiveness encompasses two types of inadequate responses that perpetuate plumbing poverty due to a lack of in-home repairs: those to renters with repair needs and complaints, and to the City's rental housing regulation and enforcement efforts to bring rental homes up to health and safety codes. While there are no specific data giving a breakdown of the types of landlords in Detroit, the findings from this study have led me to be able to group the city's unresponsive landlords into either low-capacity landlords or high-capacity landlords. The diagram at the end of this section provides a conceptual model of these findings.

Low-capacity landlords lack the financial means to make plumbing repairs in their rental properties but appear to be otherwise motivated to do so. Despite a lack of responsiveness to rental repair issues and engagement with City enforcement, these landlords are generally cast as the "good actors" within the city's rental housing landscape. My findings indicate that these landlords are typically understood as those that own a smaller number of properties, may self-manage their properties, and tend to be more locally or regionally based, sometimes living within the same neighborhood or units that they rent. And while these low-capacity landlords still contribute to plumbing poverty via a lack of responsiveness, I find that this unresponsiveness is

due more so to larger structural issues within Detroit's rental housing market and inadequate city support structures. These landlords simply lack the capacity to implement changes in their rental properties, but do not necessarily suffer from a lack of care or motivation to make repairs, such as the types of landlords popularly characterized as "slumlords." Ultimately, I find that addressing the capacity issues these landlords face could contribute significantly to reducing plumbing poverty in Detroit.

While these low-capacity landlords may intend or desire to be responsive to their renters' needs and open to engaging with the City's regulations, they face significant challenges to do so because of a lack of financial capacity. Financially, many unresponsive low-capacity landlords have been incapacitated due to larger structural dynamics and mismanagement of the city's rental housing stock. In Detroit, the financial barriers to entering the rental housing market are low due to the drastically low housing prices in Detroit and auctions that sell off properties for exceedingly low prices (Dickson, 2021; Social Explorer & U.S. Census Bureau, 2019). However, with such an old housing stock, many low-priced Detroit properties have expensive repair needs which significantly outweigh their purchase cost. For example, one city employee explained that *"...a lot of the landlords would buy from the Wayne County Auction and you can get a very decent house for about five thousand dollars...but it would take you 15 to bring it up to total code"* (Personal Interview, personal communication, January 14, 2022). Other respondents indicated that the average repair need for these homes can be as high as \$30,000, especially if lead remediation is needed (Personal Interview, personal communication, November 2, 2021). Although, it is not particularly known whether these low-capacity landlords are aware of such maintenance costs before buying into the housing market or if they have the information available to know the extent of repair needs and their associated costs. Still, low-capacity



landlords, who do not have the financial capabilities of high-capacity landlords, have been able to acquire rental properties in Detroit at very low prices yet are unable to maintain them at an appropriate level due to the extreme maintenance costs inherent in purchasing unmaintained, old housing stock. Exacerbating this is that landlords are also unable to garner enough profit to make repairs through rent since undermaintained properties cannot charge high rents and moderate- or high-income renters will not live in such properties. A Detroit city employee describes this problem:

“So, if you're looking at a renter household who's making, you know, less than \$30k a year, they really can only afford to pay about three hundred in rent a month. Current average rent is around like eight hundred, and it would require landlords to collect around a little over \$1,200 to actually get some type of profit, maintain their property on a regular basis...Like there's not the cash flow there. It's also that, you know, they don't have access to credit that, you know, traditionally you would need to make sizable repairs.” (*Personal Interview*, personal communication, November 2, 2021)

As a result, a cycle of financial incapacity that leaves renters with unmaintained properties takes shape, where structural conditions of the housing market and the City's management prime low-capacity landlords to purchase rental properties that they are unable to properly maintain.

I also find that the City's implementation of rental regulations exacerbates financial incapacities for low-capacity landlords which discourages property maintenance. Detroit's rental ordinance requires extensive and costly health and safety repairs that tack on additional costs for upgrading, maintaining, and bringing properties up to city code. While these stringent requirements are needed to ensure properties are maintained at a safe, livable level, this ordinance is being enforced without a context-driven implementation design that would

accommodate landlords of different scales and capacities. For example, low-capacity landlords who may be otherwise motivated to make repairs to their properties but simply lack the financial capacity are subject to the same level of enforcement and fine structure as more “bad-actor” landlords who have the financial capacity, yet do not maintain their properties and evade rental enforcement. One city employee explains this idea:

“And then if you look at our ordinance, you know, it's going to require new windows, new doors, you know, a lot of investment. And historically, we didn't do anything...and so, yes, now we have a good ordinance, a Cadillac ordinance, right? But it comes down to like the ability to actually be able to enforce such a thing. And can you extract that money out of these rental properties or not?” (*Personal Interview*, personal communication, November 5, 2021)

During the initial enforcement period of this ordinance in 2018, the City did offer a program to landlords with low capacities to make “compliance agreements” to give them more time to comply, but these agreements still failed to get significant property improvements and compliance (*Personal Interview*, personal communication, November 2, 2021). This is partly because the City of Detroit is not offering the financial support programs needed to help low-capacity landlords maintain their properties (*Personal Interview*, personal communication, November 2, 2021).

Without external supports in place for landlords who face capacity issues, the City’s enforcement of its rental ordinance financially shocks low-capacity landlords who have less flexibility in their ability to financially respond. For example, one interviewee described that during the initial enforcement of the rental ordinance in 2018, a landlord could be hit with “*up to three rounds*” of tickets “*and the first round was a grand and then it doubled after that*”

(*Personal Interview*, personal communication, November 2, 2021). This interviewee further noted that this was an expensive ticket structure “*particularly if you have the small landlords who already have financial challenges*” (*Personal Interview*, personal communication, November 2, 2021). With this type of rental ordinance enforcement and a lack of understanding of the actors in the city’s rental landscape, this type of implementation worsens the financial incapacities of low-capacity landlords who are subject to repeated fines for their inability to make repairs.

Such implementation without external financial support for compliance fails to enable low-capacity landlords to make property repairs and actually prevents these landlords from engaging with the City for rental regulation. An interview with a city government employee explains this dilemma:

“But a lot of landlords would say, why would I offer up my properties for the city to turn around and ticket? So, if I know that I’m struggling to come into compliance, there is no reason why I would voluntarily say I’m a landlord and here [are] my properties.” (*Personal Interview*, personal communication, November 2, 2021)

These low-capacity landlords are also prevented from engaging with the City’s rental housing requirements due to the initial costs of obtaining a Certificate of Compliance after property registration, which requires inspections and repairs (*Personal Interview*, personal communication, November 2, 2021). As a result, the fear of being further financially debilitated by registering with the City and being subject to the rental housing requirements and code enforcement disincentives these low-capacity landlords from engaging with the City – discouraging adequate property repair. Ultimately, the City’s lack of context-driven design and

implementation of its rental ordinance exacerbates the cycle of financial inability of low-capacity landlords to keep maintained properties.

Another significant capacity barrier to property maintenance faced by low-capacity landlords is a lack of information and education on how to properly engage with the City and manage rental properties. Some low-capacity landlords generally lack engagement with the City and its rental ordinance without knowledge of what is required of them (*Personal Interview*, personal communication, November 2, 2021). A respondent explained this issue as follows: “*How to comply with our rental ordinance...what you should inspect because again, as I say, like those big companies they understand and they do it, the smaller folks necessarily don't*” (*Personal Interview*, personal communication, November 5, 2021). Without this knowledge, some low-capacity landlords exist outside of the City’s rental system. This means they are not getting inspected to ensure they are making necessary or less apparent repairs such as those related to plumbing (*Personal Interview*, personal communication, November 2, 2021). Even if some low-capacity landlords are aware of the City’s rental ordinance, they are not aware of the proper processes and requirements mandated by the City’s rental regulations such as the licenses and certifications needed for landlords to make repairs (*Personal Interview*, personal communication, November 5, 2021). Without the proper education via licenses and certifications, low-capacity landlords who make repairs themselves or use less reputable contractors could be creating more health and safety hazards within the property or making temporary fixes that will need to be revisited. Respondents indicated that while the City provides some informational and educational resources to landlords, they are not extensive enough or as widely available as needed (*Personal Interview*, personal communication, November 5, 2021). Overall, without the proper knowledge

to comply with the City's rental ordinance and regulations, low-capacity landlords often lack knowledge of how to properly repair and maintain their rental properties.

The second prominent type of landlord is the high-capacity landlord. This type of landlord has the capacity to own a greater number of rental properties, may own larger properties like apartment buildings, and generally has a greater financial and informational capacity for maintaining their properties. These types of landlords with greater financial capacity may also utilize a property management company to maintain their properties either because they have the resources to do so or because of the number or size of the properties they own. I find that these landlords have the capacity to be responsive and maintain their properties to prevent plumbing repair needs yet are unmotivated to make such repairs. My results also indicate that these landlords do not generally face financial or informational capacity issues related to engaging with the City to ensure they are complying and following regulations. Instead, results indicate that these high-capacity landlords choose to avoid regulations and responsibilities to keep properly maintained properties. As a result of this lack of motivation, these high-capacity landlords contribute to property disrepair through their unresponsiveness to renter complaints and City requirements and regulations.

My results point to several potential reasons for this lack of motivation and indicate that these landlords put significant effort into evading or minimizing property maintenance. I find that the potential reasons for this lack of motivation for high-capacity landlords could stem from profit motives, the inability to make costly repairs across many properties due to over-scaling, a disconnect from not living locally and utilizing a property management company, and/or complications of working with the Detroit city government on compliance (*Personal Interview*, personal communication, January 14, 2022; November 2, 2021; February 14, 2022; February 9,

2022). For the high-capacity landlords who are unresponsive and neglect property maintenance for profit-motive, I find that they use a plethora of evasion techniques to avoid enforcement of the City's rental code. One prominent way that these landlords avoid enforcement in Detroit is via passing properties between LLCs to elude ticketing. One interview respondent described this common practice as follows:

“If I write an LLC a ticket, the LLC may just morph into another LLC...they just don't even address the ticket. They just keep moving, or in six months they may pass it to another company...they pass the properties between one another. So, you may be working with four or five different LLCs and they get a loan or whatever. They don't put the money back into the property and before you know they may not even register the deed.” (*Personal Interview*, personal communication, January 14, 2022)

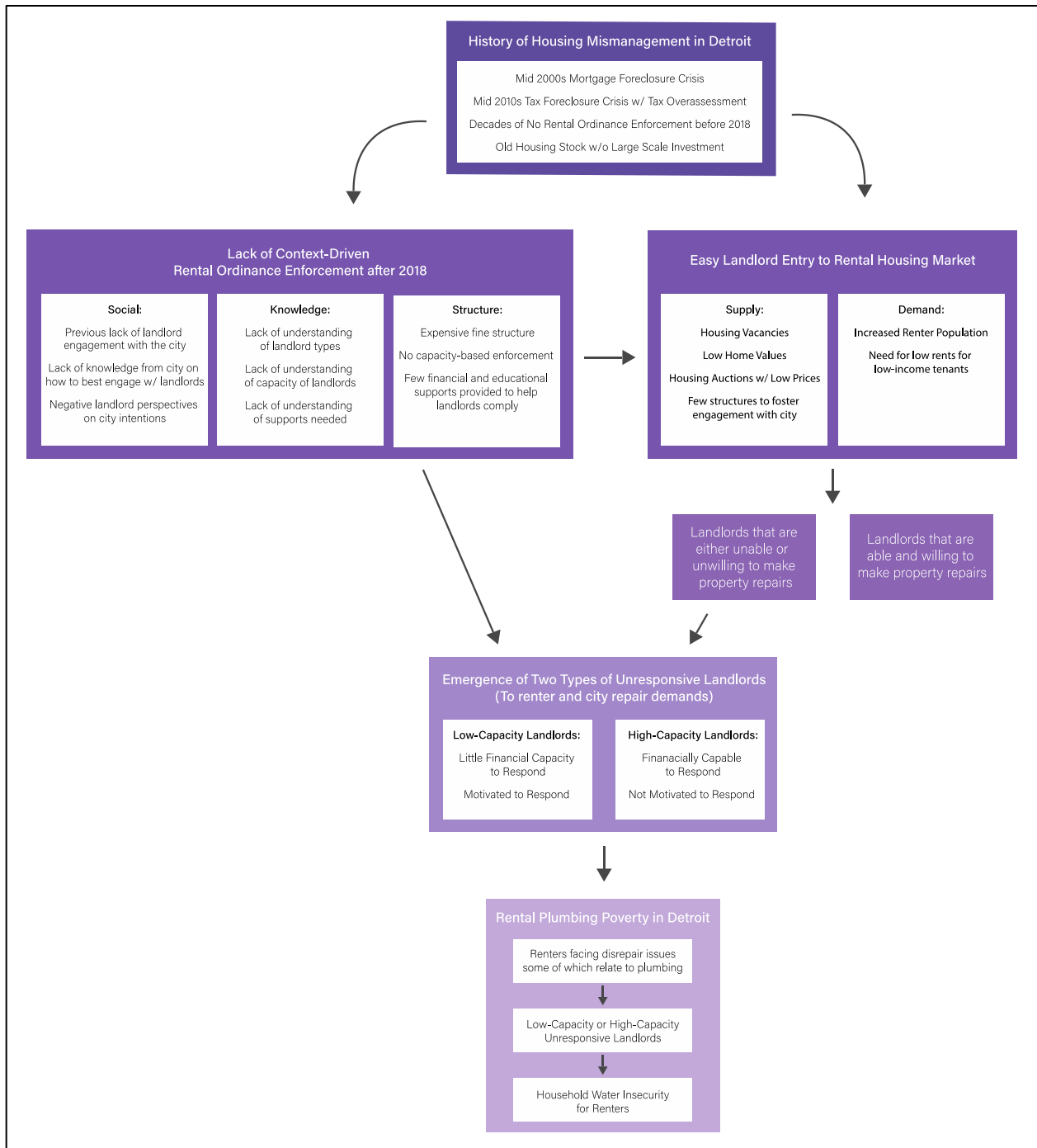
Other methods of evasion include refusing to pay code enforcement tickets and taxes on the property and not registering properties with the City to avoid further attention. The former method is utilized by some landlords who buy properties to rent them out but refuse to pay taxes or tickets and then buy these homes again after they've been taken by the City and go into the foreclosure auction. An interview respondent best describes this tactic: “...*because folks, you know, did buy stuff out of the auction and rent it out without paying anything on it and let it go back into the auction and buy it back out again and do these sort of, you know, mining activities for additional wealth*” (*Personal Interview*, personal communication, November 5, 2021). For landlords that are unmotivated to respond due to complications of working with the Detroit city government, I find that these landlords are discouraged from engaging with the City for compliance due to negative experiences related to city government inefficiency, lack of communication or inconsistency, or the idea of feeling unfairly targeted for inspections by the

City (*Personal Interview*, personal communication, November 5, 2021; February 9, 2022).

Collectively, these factors underpin high-capacity landlords' lack of motivation to maintain their properties and comply with City code regulations and enforcement.

With these two unresponsive landlord dynamics, renters' needs for in-home repairs are neglected, leaving low-income renters to self-manage their housing situations unless they can get repair assistance from intermediaries such as community organizations. I find that many renters tend to cope with their living situations if their landlords aren't fixing repair issues. The renters in my interviews that expressed the use of coping methods indicated that they wanted to make their situation "work" despite issues (*Personal Interview*, personal communication, January 14, 2022). For many renters, making their situation work despite repair issues and an unresponsive landlord means resorting to making repairs themselves. This is particularly prominent when their landlords either do not respond to them at all or are slow at responding to them (*Personal Interview*, personal communication, January 28, 2022). Renters may also cope or make repairs themselves when their landlords utilize impermanent band-aid solutions to fix more extensive repair issues (*Personal Interview*, personal communications, January 12, 2022; January 28, 2022; January 31, 2022). These sentiments echo my other findings that some renters will stay in their current housing rather than lose their housing via moving or fighting with their landlord, even if there are repair issues that are not being fixed (*Personal Interview*, personal communication, January 14, 2022). However, some renters indicated that if coping, self-fixing, or challenging their landlord did not change their living situations, they would resort to moving (*Personal Interview*, personal communication, November 23, 2021). Ultimately, these findings indicate that despite differences in the two prominent landlord types in Detroit, their joint unresponsiveness in repair needs still leaves renters vulnerable and forced to self-manage.

**Figure 4: Conceptual Model of Why Plumbing Poverty Persists in Detroit, MI**





### **What barriers exist to addressing plumbing poverty?**

With an understanding of why plumbing poverty persists in Detroit, I then move to understand what barriers exist to addressing plumbing poverty. Knowing that landlords, as the point of action for property repairs, are being unresponsive to renter and City demands for repair, I question what renters and the city government can do and whether the tools available to them are effective. While I find that there are several tools available in Detroit for renters and the city government to address landlord unresponsiveness, my results indicate that these tools are either not used by renters or have not been implemented effectively by the city government. Overall, I find that several complex and intersecting dynamics specific to each tool are preventing their effective use and implementation, each of which I delve into next.

#### ***Renter Tool: Calling the city for a rental inspection***

If faced with health and safety disrepair issues in their place of residence, renters may call the City of Detroit to have their property inspected, which would result in ticketing for landlords if disrepair issues were found. However, although this important tool exists, I find that renters do not generally utilize it. I find that there are two cases of renters who do not utilize this tool: ones who are *not* hesitant or fearful to contact the city government yet choose not to do so, and those renters who are warier to contact the city government due to precarious identities such as immigrants who are afraid of being deported or getting in trouble (*Personal Interview*, personal communication, January 19, 2022). In both cases, renters tend to self-fix, cope with issues, move out, or wait until the issues are severe enough to necessitate contacting the City for inspections. While the latter renter dynamic is important, I focus specifically on why the renters who are not fearful to contact the city government do not do so, since it is important to understand why they won't utilize the tool despite a lack of initial barriers.

For these non-fearful renters who still do not utilize the City's inspection tool, I find that a significant contributor is both positive and negative social and power dynamics between landlords and tenants. Positively, I find that some renters take into consideration the social identities and contexts of their landlords and choose to not call the City on their landlord for these reasons. For example, some tenants may know that their landlord is elderly and generally just slow at responding to repair needs so they don't want to burden them with extra costs and tasks by involving the City. Others may consider the financial constraints of their landlord and choose not to call for this reason. Two renters expressed this consideration:

“When you build a bond with people...if you have a problem or issue, you speak directly to the person. Because you don't know how that affects them...Instead of going to the City... first instead of going to the landlord, the City comes and fixes the problem which you might not get a quick response on the City when it comes to certain things, so...you might get a miracle and they come and fix the problem and they send that bill to the landlord and that bill is exceedingly high. And when you didn't even call the landlord to give him a chance to call the people... So, it's just common courtesy, it's just courtesy. Because especially if you got a relationship with the landlord, you built a relationship...it's when you built the trust among each other, so.” (*Personal Interview*, personal communication, January 12, 2022)

“See the landlord is a woman who's about, she's up in age -- 80. And just wouldn't take any action on it, you know? So, you know, I just dealt with it, you know. And I didn't want to get her trouble...but at the same time, it's not fair to have just the small luxuries like we have to able to take a bath, you know?” (*Personal Interview*, personal communication, January 28, 2022)

An additional positive social dynamic between landlords and renters is when renters have a strong relationship with their landlords, either through several years of tenancy or through a friend or family connection. These strong dynamics prevent many renters from calling the City even if they are dealing with a lack of repair. As a result of these types of positive dynamics, renters choose not to put extra burdens on their landlords and instead self-fix or cope with issues they may have instead of utilizing city tools for property inspection.

However, some renters experience negative social dynamics with their landlords which prevent them from utilizing this tool. Namely, many renters expressed fear of getting kicked out of their current home and not being able to move to another place. Because of this, renters do not want to strain their relationship with their landlords or challenge their landlords in any sense for fear of being threatened or forced out of their current residences. For example, when asked about why renters do not report on disrepair issues until they become severe, a city inspector said that *“a lot of times it's, they think because the owner is going to do something and...it's a financial hardship to move”* (Personal Interview, personal communication, January 14, 2022). Inherent in this type of relationship is a power dynamic between landlords and tenants which systematically disadvantages renters since landlords hold power over renters as the legal owners of their homes. This makes renters extremely vulnerable to their landlords, given the importance that stable and affordable housing has for many individuals and families. If a landlord were to displace a renter from the home, this could strip renters of important social supports such as relationships with neighbors and friends; proximity to family, good schooling, and jobs; and location-based safety and security. Additionally, these power dynamics subject some renters to threats, harassment, or other types of mistreatment from their landlords. For example, in Detroit, some female renters face significant sexual and verbal harassment from male landlords – a dynamic perpetuated by

the vulnerable position they have with their landlord based on both owner vs renter power dynamics and the identity power dynamics of gender. One of these female renters described her situation with her landlord as follows: “*He used to harass us a lot, like he, he was a man and it was just, yeah, it was just too much like he was very aggressive, like very disrespectful, and it was just too much*” (*Personal Interview*, personal communication, February 1, 2022). As a result of these negative social dynamics, renters are fearful to report on or challenge their landlord, for fear of being forced out of their homes by landlords or fear of exacerbating already harmful dynamics with their landlord. This results in a lack of usage of the City’s inspection tool, despite a lack of fear of the city government.

I also find several other, less prominent barriers to these non-fearful renters utilizing City inspection tools. Primarily, some renters face a lack of information for using this tool. For example, some renters indicated that they were aware of their rights as a tenant, yet other types of interview respondents indicated that few renters were actually aware of the specific rights they could utilize when having disrepair conflicts with their landlords (*Personal Interview*, personal communication, November 23, 2021). This indicates that while some renters may believe they are aware of their rights as a tenant or could easily learn these rights, they may not be privy to the actual intricacies of these rights and the specific actions they can take against their landlords with them. Additionally, some renters find their use of city tools ineffective and feel as if contacting the City for help will not improve their situation (*Personal Interview*, personal communication, January 31, 2022). While less widespread than social and power dynamics, these additional factors contribute to renters’ lack of use of city inspection tools.

***Renter Tool: Challenging landlords in court and other legal tools***

Other tools for renters to utilize are those available via the legal system. Common legal tools used by renters are on a local scale and include mechanisms such as withholding rent and placing it into an escrow account if landlords are not making repairs; paying for repairs not done by landlords and then deducting the costs from rent payments; or utilizing a lack of landlord repairs as a counterargument when being brought to court for late rent or eviction (*Personal Interview*, personal communication, February 7, 2022). However, while these legal tools are available, I find that landlords are generally the ones bringing renters to court for non-payment cases or evictions, rather than the tenants utilizing these legal tools to their advantage. I find four prominent reasons for this, which I delve into next.

First, a major barrier to renters' use of legal tools is that the design of the most commonly used policies does not place responsibilities or requirements on landlords to properly maintain their properties. Namely, during tenancy court proceedings, landlords are currently not required to show whether they have obtained a Certificate of Compliance with the City for the property in which the renter they are challenging in court lives (*Personal Interview*, personal communication, February 7, 2022). This means that there is no incentive for landlords to ensure their properties are maintained and instead incentivizes profit-driven evasion tactics, as landlords can easily evict tenants that are not paying rent and bring a new tenant in without making the proper health and safety repairs required by rental codes. This perpetuates a cycle of disrepair within rental housing.

Relatedly, many renters do not have the time, resources, or knowledge to properly utilize practices to challenge their landlords in court and ensure that disrepair issues are being brought forth during court proceedings. For example, the practice of putting one's rent in an escrow

account requires knowledge of this practice and time and resources to complete the practice, many of which low-income renters do not have or cannot sacrifice. Additionally, renters do not have the knowledge or time to research how to effectively rebut or challenge their landlords in court, and thus may not know that they can use a lack of repair as a defense against their landlords, despite the lack of requirements for a Certificate of Compliance from the landlord (*Personal Interview*, personal communication, February 7, 2022). Further, court proceedings between landlords and renters result in negative repercussions for renters, but not necessarily for landlords, despite the outcomes. Since any kind of court proceeding, whether it is a case dismissal or a case decision where rent was properly withheld due to disrepairs, stays on a renter's legal record, these legal tools can have significant negative impacts on a renter's ability to find future housing (*Personal Interview*, personal communication, February 7, 2022). Particularly, if future landlords see such a record, it may dissuade them from renting to a person, and such records may also affect a renter's credit score – debilitating them in more areas than just access to housing. A tenancy lawyer in Detroit described the various repercussions that renters face from going to court, despite the outcome:

“It affects your credit score. And it affects looking for a new apartment, you have a judgment now and potential landlords are going to look at, do you have a judgment on your record? They can...see how many times [you] were you evicted and...refuse to rent you to a new apartment.” (*Personal Interview*, personal communication, February 7, 2022)

Conversely, landlords hold power over their renters as they choose whom they rent to in the properties they own, and so their court records do not affect them in this area.

Another significant barrier for renters to utilize legal tools for disrepair issues is a significant lack of knowledge of how to access these tools. Particularly in court proceedings, many renters are unaware of the rights they have to use against their landlords (*Personal Interview*, personal communication, February 7, 2022). As a result, landlords hold knowledge power over their tenants, as many tenants do not know how to properly challenge or counter-argue their landlords in court. Additionally, many tenants face resource barriers in the form of physical access to legal tools. With in-person court proceedings, tenants have to be able to negotiate time off work, arrange for transportation or pay for parking, and face other physical access obstacles that would be particularly burdensome for a renter that is already low-income or needs their job to support their family and pay for living costs (*Personal Interview*, personal communication, February 7, 2022). Further, with online court, some renters face physical access barriers related to technology since some do not have access to a computer and to internet service, do not have the ability to upload their documents for court, or do not otherwise possess the technical knowledge to access court in this way (*Personal Interview*, personal communication, February 7, 2022). As a result, legal tools available to renters may be inaccessible due to several types of resource barriers.

As with the utilization of City inspections, social power dynamics between landlords, tenants, and actors in the court system also serve as a barrier for tenants' use of legal tools. In the court system, renters find themselves in the most powerless position to defend their housing disrepair issues, while judges and landlords wield significant power over renters -- putting tenants in quite vulnerable positions in legal proceedings. Judges hold power via the credibility and positionality of their titles and their ability to make decisions on which entities are responsible in housing cases and who must pay. Landlords also hold significant power over

tenants in legal cases. The most striking case of this is the ability of landlords to acquire legal representation for these cases, while renters are not legally entitled to representation (*Personal Interview*, personal communication, February 7, 2022). In fact, renters must seek out representation if they want a lawyer to represent them in these proceedings, whereas many landlords who take their tenants to court have greater access to an attorney due to greater resources. A lawyer in Detroit describes this disparity in access to representation as follows:

“Landlords are hiring attorneys, some of them have, almost house counsel that they use all the time and management companies, some management companies have a particular attorney that represents that management company. But yeah, most landlords have representation. Most tenants do not. That's the difference.” (*Personal Interview*, personal communication, February 7, 2022)

Fortunately, in Detroit, there are numerous legal aid non-profits for renters to find free legal representation. However, renters may lack knowledge of these organizations and the help they can offer since it is not a requirement of these housing legal proceedings for a judge to notify a renter of their ability to access and obtain legal counsel (*Personal Interview*, personal communication, February 7, 2022). Rather, respondents indicated that only some judges inform renters of this, while others do not. An interview respondent describes this dynamic here:

“Some of the judges, not all of them, would make an announcement at the beginning of the morning and say there is a clinic across the hall. If you want representation, Mr. and Mrs. Tenant, go across the hall and see someone. Not all the judges made that announcement.” (*Personal Interview*, personal communication, February 7, 2022)

Additionally, another way that landlords hold power over renters in legal proceedings is in the way that some cases are resolved. In some cases, judges encourage mediation out of the



courtroom between the landlords and the renters (*Personal Interview*, personal communication, January 29, 2022). This puts renters in a significantly disadvantaged position – particularly if they do not have legal representation – since they must then negotiate directly with the person who is threatening their access to immediate housing (*Personal Interview*, personal communication, February 7, 2022). As discussed in the previous section, if renters lose their housing, they may face issues of finding new housing that is difficult to acquire or pay for, is not in a good neighborhood/location, or is far away from a supportive environment. These out-of-court mediations make renters particularly vulnerable when they are forced to negotiate with not just their landlords, but their landlord’s attorney, which is exacerbated when they don’t have legal counsel of their own. For example, one interviewee described these types of interactions like this:

“Particularly if they're negotiating with the attorney for the landlord...So, they may be negotiating with the attorney of the landlord who's saying, so how much can you pay? And when can you pay it? And the tenant may not know that they ought to be, like I said, raising these repair issues at all. They just know they've got to pay money. And when can they get their hands on the money? And they may agree to something that they cannot afford to pay that's not realistic.” (*Personal Interview*, personal communication, February 7, 2022)

As a result, renters are intimidated and susceptible to agreeing to terms in which they cannot follow through or which do not improve their living situation if they have repair issues. This is particularly true if renters do not have legal counsel and are unaware that they can withhold rent or counter-argue against their landlord for disrepair issues.

Lastly, the commonly used legal tools available to renters are structurally inaccessible. As mentioned previously, renters are not entitled to legal representation and must seek it out themselves. Exacerbating this issue is that there is an insufficient number of available lawyers from free, community organizations to represent all tenants in their various cases. One lawyer said: “we don't have the capacity to represent everyone that walks in the courtroom right now” (*Personal Interview*, personal communication, February 7, 2022). Because of this, these organizations are forced to represent only the most extreme landlord-tenant cases, leaving many renters without the ability to access representation for disrepair cases even if they were able to seek representation out (*Personal Interview*, personal communication, February 7, 2022). Compounding this issue is that landlord-tenant housing cases are designed to move very quickly due to the sheer number of cases to be worked through, with many cases being introduced, litigated, and resolved within part of a day (*Personal Interview*, personal communication, February 7, 2022). Because of these time constraints, tenants do not have as much ability to share with judges the context surrounding a landlord's claim or to explain any mitigating circumstances, nor to spend a lot of time obtaining or working with their representation (*Personal Interview*, personal communication, February 7, 2022). Meanwhile, judges do not have time to learn the intricacies of each individual tenant's case. As a result, our respondents indicated that judges tend to rule more favorably for landlords since they have too many cases to go through and lack time to put needed attention into each individual renter's case (*Personal Interview*, personal communication, February 7, 2022). A community tenancy lawyer expressed these dynamics as follows:

“...most of the judges erred on the side of the landlord. They were not necessarily tenant, leaning towards the tenant's side. Part of it has to do with how many cases they have. So,

they're running through an enormous number of cases and they don't have the time to listen to everyone's sad story. But by and large, they tended to go with the landlords. So, there was some, I mean, the judge would say, have you talked to each other? Why not go out and talk and see if you can resolve it? Sometimes they could. But the problem you have and here is where the tenant gets screwed in it -- is if they're not represented, they don't know they can say unless they're an outspoken person..." (*Personal Interview*, personal communication, February 7, 2022)

Additionally, online court proceedings face additional barriers in this area, as the online court makes it more difficult for both judges and lawyers to connect to the identities and circumstances of each renter to ensure better representation for lawyers and more holistic decision-making for judges (*Personal Interview*, personal communication, February 7, 2022). As is evidenced by these factors, there are several structural barriers for renters to utilize the legal tools available for disrepair issues.

### ***Renter Tool: Use of intermediaries for repairs***

Renters may also utilize the programs offered by intermediaries other than the City and their landlord to make needed health and safety repairs in their residences. Community organizations that can make such repairs or provide support for these repair needs are important types of intermediaries for those renters facing plumbing poverty. However, for Detroit renters, there are several obstacles to effectively utilizing these intermediaries. Primarily, while these intermediaries can provide some support, they do not have the capacity and resources to fully take the place of landlord or City support for rental repairs. Additionally, many only offer programs for those that meet narrow requirements, and many offer support only to homeowners, not renters (Ruggiero & Yan, 2022). In the City of Detroit specifically, there is only one

organization that offers services for major plumbing-related repair for renters – Wayne Metro Community Action Agency (Ruggiero & Yan, 2022). The services and resources of just one community organization is simply insufficient to fully replace the property investment that needs to be done for rentals in Detroit. Additionally, another major barrier to the use of intermediaries such as community organizations is that repairs done on rental properties must be approved by landlords, even if the renter has requested them (*Personal Interview*, personal communication, November 23, 2021). This presents a significant obstacle if landlords do not live locally or utilize a property management company and are difficult to get in touch with, or if the landlord is otherwise inaccessible due to other technological or physical access barriers. A community organization employee describes that “*with trying to either reach out to their landlords, some of them may be out of the state, some of them are possibly out of the country, and it's hard for them to contact their landlord to get that paperwork signed*” (*Personal Interview*, personal communication, November 23, 2021). Respondents also indicated that some landlords do not want to utilize the services of intermediaries such as community organizations due to a sense of pride for some landlords to make their own repairs, or the wariness of others coming in to make repairs (*Personal Interview*, personal communication, November 23, 2021; November 10, 2021). As a result, while the use of intermediaries is important, they cannot compensate for the under-investment of landlords and the city government in Detroit’s rental housing stock.

### ***City Tool: Implementing the rental ordinance***

The City of Detroit’s primary tool for ensuring rental housing is in good repair and preventing plumbing poverty is the effective implementation of its rental ordinance. However, the City of Detroit lacks the capacity for effective enforcement due to financial, personnel, and knowledge constraints.

As discussed earlier, the City of Detroit does not currently have adequate financial support in place for landlords who face disrepair issues in their properties and do not have the financial capacity to make investments, especially when faced with ticketing from the City's current enforcement of its ordinance. While these supports are needed to help improve the financial capacity of landlords to make repairs, my results indicated that the City simply does not have the financial ability at present to provide the level of monetary support needed for some landlords to bring their rental properties up to rental code. For example, one city employee said:

“How do we support those sort of folks in compliance and sort of like slice and dice our moneys down to a chunk-able group? Because of course, we cannot serve all of these properties.” (*Personal Interview*, personal communication, November 5, 2021)

This, combined with the lack of low-income renters' and some landlords' ability to pay for more upgraded properties or make repairs themselves, creates a cycle of financial incapacity between landlords, the City, and renters for investing in Detroit's rental housing stock.

Furthermore, Detroit simply lacks the personnel for effective implementation and enforcement of its rental ordinance. With so many rental properties, it is difficult to have enough staff to manage the data on these rentals and to enforce the rental code for all rental properties (*Personal Interview*, personal communication, November 5, 2021). For example, one respondent indicated that a case-by-case management technique for getting landlords into compliance was effective in the past, but that the City simply does not have the staff capacity to support this:

“...like if you could have more handholding and kind of case management, potentially that could lead to more properties getting their Certificate of Compliance -- again if financing isn't an issue. So that would require, right, like needing a higher, needing more staff that are available to kind of assist landlords literally at like every step of the way, just ensuring that

you know, everything is kind of flowing through the compliance pipeline as intended.”

*(Personal Interview, personal communication, November 2, 2021)*

Additionally, without a history of rental code enforcement, Detroit is now faced with the problem of having to locate and register all rental properties in the city that they were unaware of before recent enforcement efforts. Respondents indicated that there may be as many as 80,000 rental properties in Detroit, yet only about 5,000 of those are currently registered with the City *(Personal Interview, personal communication, November 5, 2021)*. Having to integrate so many properties into their system in a short amount of time after decades of little enforcement puts significant stress on the City of Detroit in terms of financial and staff capacity.

Lastly, the City of Detroit faces knowledge barriers to the effective implementation of its rental code. As discussed previously, the City implemented its rental code without an understanding of its rental landscape – that is, who the landlords are, what type of capacities they have, who are the good and the bad actors, etc. Without context-driven implementation, the City’s enforcement of its rental ordinance has been done without this understanding and has not resulted in effective enforcement via property registration and compliance, as evidenced by the small percentage of registered rental properties and the sheer amount of property disrepair that continues in the city *(Personal Interview, personal communication, November 5, 2021; Erb-Downward & Merchant, 2020)*. This is due to the barriers that different types of landlords face in the city, and how the current implementation of the ordinance may discourage engagement from some types of landlords. Instead, context-driven implementation would help the City target its “bad actors” and support engagement from its landlords who lack capacity but have good intentions for maintaining their properties. The City is currently in the process now of completing the needed studies to better understand its rental landscape, which should aid in more

effective implementation and enforcement of the rental code (*Personal Interview*, personal communication, November 2, 2021). Having more knowledge of the rental landscape would allow the City to better understand the landlord-renter social power dynamics which prevent renters from utilizing city inspection tools as a part of the rental code.

## Discussion

This study set out to investigate the social, political, and policy dynamics which underpin and perpetuate rental plumbing poverty in U.S. cities. I aimed to fill the research gap of what housing policies and practices lay the foundations for water insecurity by researching rental plumbing poverty – two critical dimensions of housing policy and water insecurity.

Understanding the social, political, and policy dynamics of rental plumbing poverty illuminates exactly *why* plumbing poverty persists and *what* perpetuates it at the local scale, which are two gaps left by the important research previously done at the housing-water nexus. Using Detroit as a case study, I was able to better understand the dynamics that create and maintain rental plumbing poverty at the local level.

Socially, I found that the relationships and power dynamics between landlords, renters, city government, and courts play an imperative role in why plumbing poverty-related repairs are left unaddressed and why certain City and legal tools face barriers to effectively protecting renters from disrepair. Politically, this study began to delve into the capacity deficits and complex dynamics present within the local government which affect its ability to effectively work with landlords and to successfully enforce its rental ordinance. These factors have played a role in landlord unresponsiveness and effectiveness of the renter and city tools available to address plumbing poverty. In terms of policy, I have forged an understanding of why Detroit's local rental ordinance has design and implementation flaws that have created usage barriers and prevented renters from using them for disrepair needs. These findings provide significant implications for why plumbing poverty persists and what perpetuates it for Detroit renters. Ultimately, my findings can be summarized into four broader themes that have emerged out of the Detroit case for rental plumbing poverty:



1. **Detroit's history of rental housing mismanagement** has created a rental housing environment that allows for significant landlord unresponsiveness to emerge and persist.
2. **Rental policies have not been enforced effectively** and lack a deep understanding of the city's rental landscape and the capacities, identities, contexts, and social dynamics of renters and landlords.
3. **There is a lack of effective policy tools and support for renters**, resulting in the disempowerment of renters and lack of access to tools or help for low-income renters.
4. **There is a lack of financial capability of the City, landlords, and tenants** to invest in deteriorating housing stock, resulting in a cyclical process of disrepair without the potential for investment and improvement of rental housing stock.

These broader themes from the Detroit case are inseparable from the city's history and current challenges with housing. Primarily, they reveal that housing disrepair in the city is still very persistent, despite the City's attempts to strictly enforce its rental ordinance in the past few years (Erb-Downward & Merchant, 2020; MacDonald, 2019). The continued levels of low landlord compliance and lack of investment and maintenance in the city's rental housing stock serve as evidence that current policy and legal tools are not working in the ways they should be, as rental plumbing poverty persists in the city (*Personal Interview*, personal communication, November 5, 2021; Erb-Downward & Merchant, 2020). These persistent issues are rooted in the city's history of housing mismanagement via home assessment overvaluations and foreclosure auctions, as well as decades of little to no enforcement of the local rental housing code which has made current implementation and enforcement of the rental code very difficult (Dewar et al., 2020; MacDonald, 2019; Ruggiero et al., 2020; Stein, 2022). Lastly, these findings highlight that with the social, political, and policy barriers to reducing plumbing poverty in the city, a cycle of

financial incapacity persists among those directly capable of changing the state of Detroit's housing stock – landlords, their renters, and the city government.

While these findings are locally specific to my case study City of Detroit, they offer important insights and implications for other cities facing high levels of plumbing poverty and similar issues with rental policy design and implementation. This research highlights the following important lessons for other localities:

- **Understanding the policy design and implementation failures of Detroit** serve as lessons for other cities when designing, revising, or implementing local rental ordinances in a way that will reduce plumbing poverty. Other cities should take note of the significance of context-driven enforcement, the need for incremental enforcement of ordinances, the need for financial and informational support for landlords and renters, and should place importance on forming connections with landlords and renters to shape their perceptions and experience of city government to improve engagement.
- Localities need to place **greater emphasis and importance on social and power dynamics** in their rental housing market when trying to address plumbing poverty. Cities should focus on understanding how social and power dynamics between landlords and tenants and between landlords and the city government within their rental housing system may hinder effective rental code enforcement or reduce the utilization of renter tools. Understanding these dynamics will help cities implement policies and provide tools in a way that supports well-intentioned landlords engaging with the City and enables vulnerable renters to use the available tools and resources to reduce disrepair.
- Support from **community organizations and other intermediaries can play a critical role** in breaking the cyclical financial instability and incapacity of city governments,

landlords, and renters to invest in housing stock and reduce plumbing disrepair.

Community organizations should be further supported to continue and expand their important role in reducing plumbing poverty for renters. Programs should be expanded to widen eligibility requirements and more programs should be supported which provide a particular focus on renters. While these organizations should be supported, they should maintain their independent roles as intermediaries with whom residents can build trusting relationships without the wariness that can come with working with government entities.

## Conclusion

At the nexus of housing and water, plumbing poverty is intricately connected to water insecurity for those that lack in-home access to adequate plumbing infrastructure to obtain water for drinking, cooking, personal health, and sanitation. Water insecurity that occurs as a result of plumbing poverty has significant health and equity implications for those that experience its effects via a lack of proper water piping, broken faucets, a lack of a bathtub or shower, and other inadequate plumbing infrastructure problems. Those experiencing plumbing poverty are highly vulnerable to malnutrition, disease transmission, and the detrimental mental health effects of an unstable water supply (Aguilar, 2021; Gaber et al., 2021; Young et al., 2021). To add to these vast impacts, those experiencing plumbing poverty are more likely to be people of color, showing how plumbing poverty is compounding the disadvantages and systemic vulnerabilities of POC in the United States (Gasteyer et al., 2016; Meehan et al., 2020b).

Previous research on plumbing poverty and renter vulnerability identified renters as a critical subpopulation within the housing sphere being highly affected by plumbing poverty-induced water insecurity (Local Progress, 2019; Meehan et al., 2020b; Ross, 1996; Ruggiero et al., 2020; Wescoat et al., 2007). My results support this finding using qualitative methods, as this study has illuminated how the institutions, policies, and tools intended to protect renters from plumbing poverty have failed. While these institutions, policies, and tools are designed and implemented with the intention to protect renters from disrepair issues such as plumbing poverty, this study has found they are inaccessible to renters and suffer from local histories and contexts which reduce their effectiveness without context-driven implementation. My findings also support the previous research on renter vulnerability due to power dynamics, as I've found that renters suffer from vulnerable positions within the court system and in their relationships with their landlords, which prevents the effective utilization of available tools (Local Progress, 2019;

Ross, 1996). Thus, renters not only statistically suffer the most from plumbing poverty as previous studies have shown, but we now better understand why this is since they are also not given accessible tools to take power over their precarious housing situations. From my research and previous studies, we see that renters are a systematically disadvantaged subpopulation of residents facing plumbing poverty. As a result, we gain a better understanding of what perpetuates these circumstances for them, which is critical for improving rental housing equity.

This study has initiated this understanding by investigating why plumbing poverty persists and what perpetuates it among the critical subpopulation of renters in Detroit, Michigan. I found that Detroit's history of housing mismanagement and lack of context-driven implementation of its rental ordinance has led to the emergence of two landlord narratives in the city (Dewar et al., 2020; MacDonald, 2018; Ruggiero et al., 2020; Stein, 2022). While these landlords face different barriers to proper housing maintenance, both lack responsiveness to renter and City demands for rental property maintenance. This, in turn, has allowed plumbing poverty to persist, as landlords are not making the proper repairs on their properties. Additionally, I find that plumbing poverty is perpetuated among renters due to a lack of effective renter and city tools to address localized rental repair issues. Among the renter tools of city inspections and legal tools, we see a common theme of social power dynamics preventing effective renter utilization of these tools. For legal tools, I also find policy design barriers, resource incapacities, and structural inaccessibility preventing renters from effectively utilizing these tools. I also find that renters can utilize intermediaries to make needed rental repairs, but that these intermediaries lack the needed capacity and many have narrow requirements not applicable to rental plumbing poverty. Lastly, I find that the City can more effectively implement

its rental ordinance, but that it also faces financial, personnel, and knowledge barriers to effective enforcement.

These findings on the *why* and *what* of plumbing poverty at the local scale are valuable for formulating and implementing more effective policies for rental housing that reduce levels of plumbing poverty in the United States. However, since plumbing poverty and the conceptualization of the housing-water nexus are emergent areas of study, there are further research needs in this area. In relation to this study, a surveying study would be useful for further broadening my results. While delving into plumbing poverty within the context of a specific locality via interviewing was appropriate for the scope of my research questions, such a surveying study may be effective for quantitatively gauging renters' understanding and usage of available policy and legal tools across different localities and policy environments. This would allow for interesting comparisons between cities on the efficacy of different rental policy tools and approaches. Additionally, my study focused primarily on housing policies at the local level. Previous research has called for the need to better understand the inequalities produced at the intersections of housing policy *and* water policy (Meehan et al., 2020b). Further research is needed to delve into the crossover of these two types of policies at the local scale to understand how they may intersectionally produce plumbing poverty at the housing-water nexus. With these additional studies, in combination with this study and other previous research on plumbing poverty, we may begin to make tangible changes for those communities bearing the brunt of plumbing poverty and related water insecurity in the U.S.

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