# Domestic Neglect and External Power:

## A Structural Analysis of Unsafe Drinking Water in Illinois and Michigan

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### Abstract

Despite the United States' global economic and political influence, unsafe drinking water continues to affect residents across multiple states, particularly Illinois and Michigan. This paper examines how aging infrastructure, fragmented governance, regulatory limitations, and historical disinvestment contribute to persistent water contamination and associated public health risks. Focusing on lead exposure through service lines, the analysis argues that unsafe drinking water is not the result of isolated technical failures but a predictable outcome of governance structures that deprioritize domestic infrastructure maintenance. The paper further contrasts domestic water neglect with the speed and scale of U.S. foreign intervention, highlighting structural imbalances in national priorities. Unsafe water is framed as a public health, environmental justice, and democratic legitimacy issue requiring coordinated, preventative, and equity-centered solutions.

### 1. Introduction

Safe drinking water is a fundamental requirement for public health, economic stability, and civic trust. Yet across the United States, millions of residents continue to face exposure to contaminants through municipal water systems. Illinois and Michigan represent particularly significant cases due to their aging infrastructure, industrial histories, and documented contamination events.

While national attention intensifies during visible crises—most notably the Flint water crisis—chronic exposure in other communities often persists with far less scrutiny. This paper explores why unsafe drinking water remains a recurring issue in a nation with substantial technical and financial capacity. It asks a central question: **Why does the United States demonstrate the ability to mobilize rapidly and decisively in foreign affairs while domestic water safety remains slow, fragmented, and reactive?**

### 2. Aging Infrastructure and Lead Exposure

Much of the drinking water infrastructure in Illinois and Michigan was installed prior to modern safety standards. A critical concern is the continued presence of lead service lines, which connect municipal water mains to individual homes and buildings. Illinois is estimated to have the highest number of lead service lines in the United States, with Chicago alone accounting for several hundred thousand (Illinois Environmental Protection Agency [IEPA], 2022; ProPublica, 2019).

Lead contamination in drinking water is primarily driven by corrosion rather than the original water source. When corrosion control measures are absent or insufficient, lead can leach from pipes into tap water, creating intermittent and difficult-to-detect exposure risks (Environmental Protection Agency [EPA], 2022). Because lead levels can fluctuate based on water use, stagnation, and chemistry,

contamination often goes unnoticed until health effects emerge.

## 3. The Flint Water Crisis as a Systemic Signal

The Flint water crisis is frequently portrayed as an isolated failure, yet it is better understood as a signal event exposing systemic vulnerabilities present in many U.S. water systems. In 2014, Flint's water source was changed as a cost-saving measure without adequate corrosion control, causing lead to leach from aging pipes into residents' drinking water (Masten et al., 2016).

Despite resident complaints and visible health symptoms, official responses were delayed, extending exposure and deepening harm. Subsequent studies documented significantly elevated blood lead levels in children following the switch (Hanna-Attisha et al., 2016). Flint demonstrated that technical knowledge alone is insufficient when governance systems fail to act on evidence and community reports.

## 4. Public Health Impacts of Lead Exposure

Lead has no known safe exposure level, particularly for children. Extensive research links low-level lead exposure to reduced cognitive function, developmental delays, behavioral regulation difficulties, kidney damage, cardiovascular effects, and adverse pregnancy outcomes (Lanphear et al., 2005; Centers for Disease Control and Prevention [CDC], 2023).

These health effects extend beyond individual harm. Chronic exposure increases special education needs, reduces workforce productivity, and elevates long-term healthcare costs, placing sustained strain on public systems and community resources.

## 5. Environmental Justice and Unequal Burden

Unsafe water exposure is not evenly distributed. Elevated risks are concentrated in communities with older housing stock, lower household incomes, and histories of disinvestment. These communities are often predominantly Black and were previously subjected to redlining and infrastructure exclusion (Bullard, 2007).

This distribution reflects environmental injustice rather than coincidence. Communities with less political and economic power experience longer remediation delays and reduced capacity to compel corrective action, allowing preventable harm to persist.

## 6. Governance Structure and Regulatory Fragmentation

Drinking water systems in the United States are primarily managed at the local or regional level. While federal agencies establish regulatory standards, enforcement and infrastructure investment depend heavily on municipal capacity. This fragmented governance model produces uneven protection, inconsistent compliance, and slow replacement timelines (U.S. Government Accountability Office [GAO], 2020).

Testing and reporting protocols further complicate risk assessment. Lead sampling methods may underestimate exposure due to timing, location selection, and averaging practices. Additionally, many service line materials remain undocumented or classified as "unknown," delaying replacement efforts (EPA, 2023).

## 7. Domestic Water Neglect and Foreign Intervention

A notable structural contrast emerges when domestic water infrastructure is compared to U.S. foreign intervention. Foreign involvement is typically centralized, rapidly funded, and framed as a matter of national security. Domestic water repair, by contrast, is decentralized, politically less visible, and dependent on long-term local financing.

This imbalance suggests that unsafe water persists not due to technical incapacity but due to incentive structures that reward external action more consistently than internal maintenance. Infrastructure repair yields benefits defined by the absence of harm, which are less politically rewarded than crisis response or international engagement.

## 8. Economic Costs of Inaction

The long-term economic costs of unsafe drinking water include increased healthcare expenditures, special education services, reduced productivity, and diminished lifetime earnings. National analyses indicate that these cumulative costs exceed the upfront investment required for comprehensive lead service line replacement and preventative maintenance (National Academies of Sciences, Engineering, and Medicine, 2021).

Delaying action shifts costs from public infrastructure budgets to individuals, families, and social systems, effectively privatizing the consequences of systemic failure.

## 9. Psychological and Civic Impacts

Unsafe water also produces significant psychological and civic harm. Residents forced to rely on bottled water or filtration experience chronic stress, loss of bodily security, and persistent distrust in institutions. When basic survival needs cannot be reliably met, civic confidence erodes.

A state's legitimacy depends in part on its ability to provide essential services. Persistent water insecurity undermines public trust and weakens democratic foundations.

## 10. Comparative Perspective

Many peer nations maintain safer drinking water systems through centralized infrastructure ownership, national replacement schedules, proactive maintenance, and transparent reporting. These approaches reduce fragmentation and prevent crisis-driven governance (World Health Organization [WHO], 2017).

The U.S. experience illustrates how decentralization without sufficient coordination can delay solutions even when resources and technical expertise exist.

## 11. Methods

This paper employs a qualitative synthesis approach drawing on publicly available infrastructure inventories, regulatory documents, peer-reviewed public health literature, demographic mapping, and comparative governance analysis. The focus is on identifying structural patterns rather than assigning individual blame.

## 12. Conclusion and Forward-Looking Statement

This paper is written with the sincere hope that the drinking water challenges affecting Illinois, Michigan, and similar communities are resolved sooner rather than later. Safe drinking water is not a

privilege or a political abstraction; it is a foundational public health requirement and a basic condition of human dignity.

The persistence of unsafe water in a wealthy nation reflects structural misalignment rather than scientific uncertainty. Fragmented governance, delayed infrastructure investment, unequal political leverage, and crisis-driven response models have allowed preventable exposure to continue for far too long. Recognizing these dynamics is not an act of blame, but a necessary step toward durable solutions.

Several actions are essential for meaningful improvement. Comprehensive and publicly accessible service line inventories must be completed and maintained nationwide. Full lead service line replacement—including both public and private segments—should be prioritized over partial replacements that prolong risk. Corrosion control enforcement must be treated as a non-negotiable public health safeguard. Water safety should be framed explicitly as a public health issue to align urgency, funding, and accountability. Federal coordination should be strengthened to reduce fragmentation and accelerate repair timelines, while transparent communication and community involvement must be restored to rebuild trust.

The cost of inaction—measured in health outcomes, educational impact, economic loss, and civic erosion—far exceeds the cost of decisive, preventative repair. Resolving unsafe drinking water is both achievable and necessary. The remaining question is whether it will be addressed with the urgency and equity that public health demands.

**Author's Note**
This paper is part of an independent public health research series published through PartumPress. It draws on publicly available data, peer-reviewed literature, and government sources to examine structural causes of environmental and public health harm. The purpose of this work is educational, analytical, and civic in nature. It does not provide medical diagnosis or individual treatment guidance.

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