Erika Rosebrook, Ph.D.
October 29, 2025

Staying Afloat

PUBLIC WATER SYSTEM FISCAL HEALTH IN MICHIGAN

Affordability.
Quality Issues.
Disinvestment.

More than 10 years later, Flint declares its water safe after replacing lead pipes, but health issues and doubts persist

UPDATED AUG 4, 2025

By Nicquel Terry Ellis

Battle Creek water system exceeds TTHM limits; officials say no immediate health risk

by Donny Ede and Mackenize Dekker | News Channel 3 | Fri, March 21, 2025 at 8:37 AM
Updated Fri, March 21, 2025 at 8:16 PM

GREAT LAKES

Many Rural Towns Have Neglected Drinking Water Systems for Decades

As some rural towns lose population and government funds shrink, some drinking water systems are one failure away from crisis.

by Lester Graham May 3, 2022

Water woes loom for Michigan suburbs, towns after decades of disinvestment

by Kelly House
May 3, 2022

Highland Park resolves $55M water debt after governor signs relief package

By Jack Nissen | **Published** December 18, 2023 5:13pm EST | Highland Park | FOX 2 Detroit |

EGLE finds significant deficiencies, 'immediate health risk' in Wyandotte water system

Keith Matheny
Detroit Free Press
Updated July 7, 2025, 9:46 a.m. ET

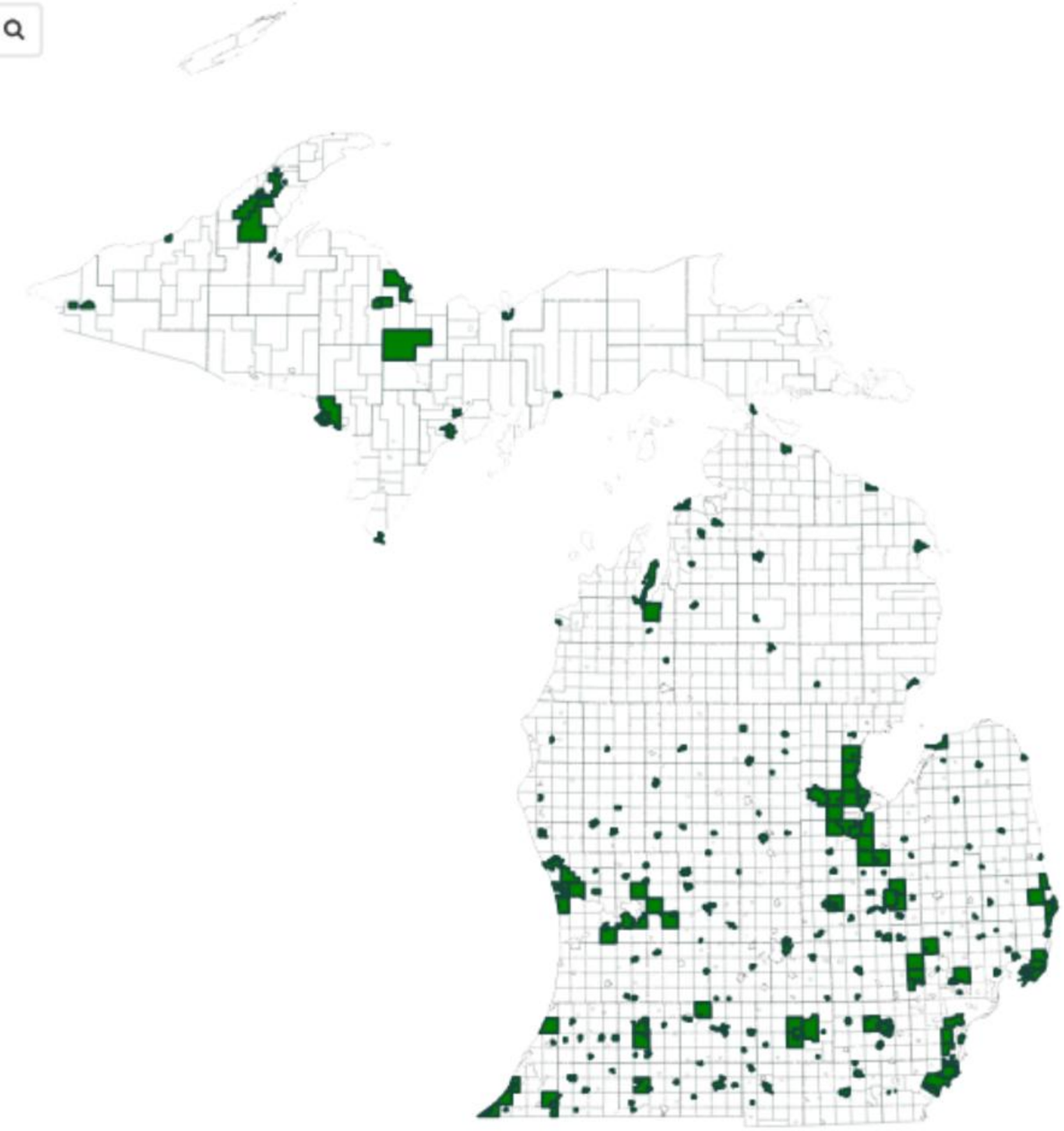
MICHIGAN'S CRITICAL INFRASTRUCTURE

Public Water Systems

Aging infrastructure, worsening fiscal health

Separate reporting on and monitoring of water fiscal health could help identify issues before they become crises

Options to strengthen fiscal health are limited and State support via the DWSRF is critical



THE RESEARCH

How fiscally healthy are our water systems?

No special monitoring of water system fiscal solvency outside of regular budget process/reporting

We scraped audit data from a sample of 250 of Michigan's 731 municipally-owned and operated water systems to better understand:

- Fiscal Condition
- Debt Burden
- Other factors that may contribute to system stress (e.g. income, age, property values, etc.)

KEY POINTS

How we pay for water

Enterprise Funds

- Self-sustaining system funded by ratepayers
- Can be isolated from pressures on general fund but more sensitive to population loss and ratepayer types
- Subject to separate accounting and reporting standards

Private Financing

- Municipal bond market offers options
- Easier for larger systems to access

State & Federal Assistance

- Traditionally, federal investment matches state dollars 1:5 in revolving funds
- Michigan has historically invested via Clean Water and Drinking Water State Revolving Funds (Clean Michigan Initiative bonds, ARPA, etc.)

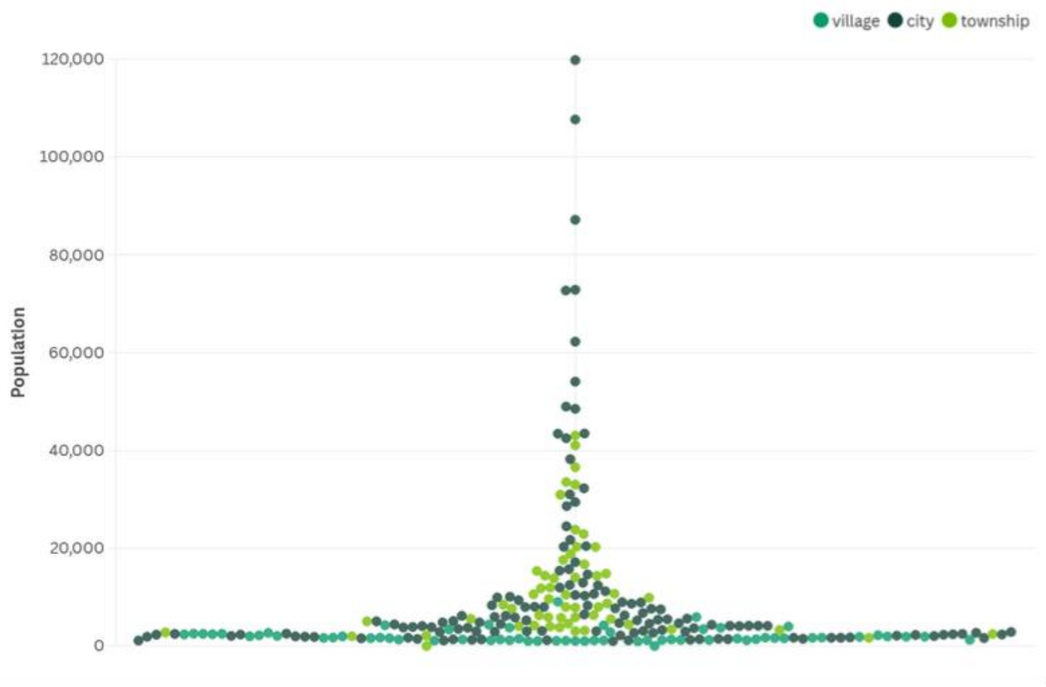
MICHIGAN PUBLIC WATER

The Data

Our Research Sample

132 cities, 56 villages, 62 townships

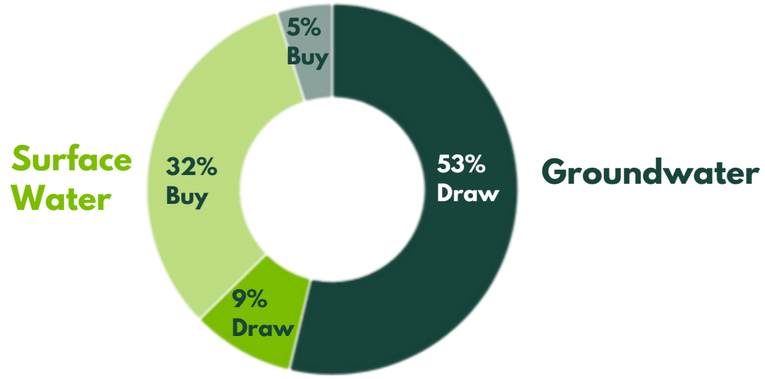
Serving at least 1,000 residents



731 systems provide water to 7.5 million Michiganders

Retail customers range from 25 to 713,777

[3.8 million (GLWA)]



MI DWSRF awarded $2B from 1998-2024

Over $800m annual gap in water/sewer infrastructure needs

MICHIGAN PUBLIC WATER

Our Sample

DEMOGRAPHICS

- 58% increased population 2008-2022
- 10% had a population decrease of more than 10%
- Median Household Income: $59,393
- Median Age 39.5; 17% 65+; 23% under 18
- 68% of SEV from residential property

FINANCIAL POSITION

- Total Assets per capita: $1,656
- Total Liabilities per capita: $562
- Charges for Services per capita: $197
- Net position per capita: $1,034
- 22% received DWSRF between 2008-2022

ANALYSIS

What factors support (or harm) fiscal health?

MODELING STRATEGY

We use a two-stage analytical framework:

- Cross-sectional regression with 2022 data
- Two-way fixed-effects panel with 2008, 2015, 2022 data

Each analysis considers all units together, then compares “Shrinking” units, defined two ways:

- any population loss
- a population decline of more than 10%

WHAT THIS HELPS US UNDERSTAND

- The association between revenue base measures, DWSRF participation, and demographic controls and financial outcomes (assets, liabilities, net position, and charges)
- Variation across municipalities (cross-sectional)
- Causal relationship between DWSRF participation and financial outcomes, accounting for community differences and statewide trends

ANALYSIS

What factors support fiscal health?

Larger communities have substantially higher fiscal capacity

78% higher assets
98% higher liabilities
82% higher net position
119% higher service charges

Water purchase agreements are associated with positive net position and service charges

Villages and townships reflect lower fiscal capacity compared to cities

Communities who received funds from DWSRF experienced positive, statistically significant changes in net position over time

32% increase in assets
34% increase in net position

Higher median income associated with lower assets, liabilities, & net position

Higher property values are associated with higher assets and net position

Communities that lost more than 10% of population and received DWSRF loans have higher:

assets, liabilities, net position, and charges for services

DWSRF has a greater effect for growing and stable communities, with a 47% increase in net position

Shrinking cities do not see the same benefit from the DWSRF

IMPLICATIONS

Where to go from here?

The DWSRF is a critical support for public water systems, but it alone isn't enough to guarantee fiscal health and sustainability

Indications of a federal pull-back from new funding for DWSRF suggest that access to this key resource will become more difficult - seek opportunities to continue and expand investment

Once communities fall behind, there are few options to exit fiscal trouble

IMPLICATIONS

Where to go from here?

Solidify the health of water systems by identifying signs of distress and targeting support more specifically to community needs:

- Support accountability and transparent, accessible information on water systems
  - establish fiscal reporting and public transparency requirements
  - long-term: technical assistance and robust data, billing, and asset management programs

- Evaluate incentives for partnerships/consolidation that support fiscal and management stability and public accountability

Thank you!

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For more information and to find more of our work, visit:

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