

Water in Michigan

Polluted in the past, polluted now, and challenged by the future.

6324

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Drinking Water

The Great Lakes News Collaborative is a joint effort by **Bridge**, **Detroit Public TV's Great Lakes Now**, **Circle of Blue**, and **Michigan Radio** to cover water issues in the Great Lakes.

In the few years we've worked together, we've brought attention to some major issues, including many already discussed and a series on water affordability juxtaposed against the decline in water infrastructure funding.

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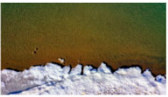
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Environment & Climate Change

Michigan is on thin ice. Get used to it, climate experts say

February 3, 2021

Hope is waning for those who hoped to stick an ice shanty on Little Traverse Bay this winter. The same goes for nearby Torch and Elk lakes, two large...




Environment & Climate Change

The future of Lake Superior with climate disruption

Lester Graham, February 15, 2021

The downtown office for the Sault Sainte Marie Tribe of the Chippewa Indians Fisheries Management Program is a simple, small two-story brick building. But...




Environment & Climate Change

Water could make Michigan a climate refuge. Are we prepared?

February 16, 2021

Intrigued by warming winters, researchers from the University of Michigan set out in 1989 to formally measure changes in the geographical distribution of...




Environment & Climate Change

Lake Superior winter: Researchers belatedly turn their eyes to the impact of warming winters

March 11, 2021

Deep below the cold, dark surface of Lake Superior, sensors strung like pearls along a vertical steel cable away with the currents. Recording the lake's...




Environment & Climate Change

In flooded Michigan neighborhoods, who should pay for sea walls?

March 30, 2021

The floodwaters have receded from Jefferson Chalmers for now, but evidence of the neighborhood's recent crisis is hard to miss:Dried algae on the...




Environment & Climate Change

How we know Michigan will lose lake ice if we don't change our ways

February 3, 2021

If humans continue to release greenhouse gases into the atmosphere at...

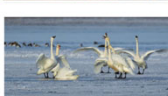


Environment & Climate Change

Michigan rivers changing due to climate disruption

Lester Graham, February 16, 2021

It's freezing outside and Larry Scheer is in neoprene chest waders kicking up...




Environment & Climate Change

Climate change is affecting the kind of fish you can catch in Michigan's inland lakes

Lester Graham, February 17, 2021

Parts of Watkins Lake State Park and County Preserve in Michigan are off...

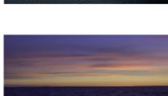


Environment & Climate Change

Some cities are turning to natural infrastructure to deal with extreme rain events

Lester Graham, March 17, 2021

Climate change in the Great Lakes region means more intense storms.



Environment & Climate Change

Report: Lake Michigan is 'running a fever.' More storms, less fish possible.

April 2, 2021

Diminished surface ice is just the beginning: Climate change is warming Lake Michigan and other big lakes all the way down to their chilly depths...

5


Great Lakes warming and the food web

The U.S. Environmental Protection Agency's research vessel, the Lake Guardian, takes crews of scientists from federal agencies and universities from the eight Great Lakes states to conduct studies.

Invasive species such as the zebra and quagga mussels have caused dramatic changes in the food web.

Basically, we're just trying to understand what is going on in the lakes and how that's going to affect the rest of the food web as well as water quality, that's really important as a drinking water source for people.

-Annie Scofield, USEPA/GLNPO



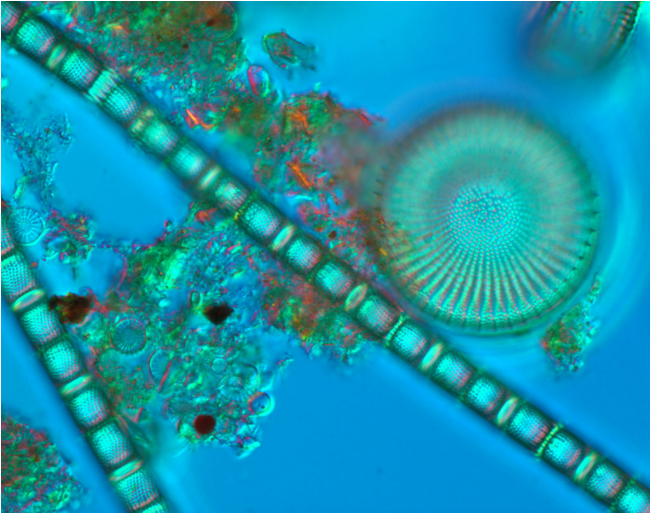
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Climate change is affecting diatoms

One thing Scofield and other scientists are finding is changes in diatom populations.

Diatoms are microscopic algae. Tiny organisms called zooplankton and some just-hatched fish like to eat diatoms. Those little fish either grow up or they're eaten by bigger fish, the kinds people like to eat.

Algae such as diatoms are sensitive to water quality changes. And they also respond to physical changes such as climate.



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Streams and inland lakes are also warming

Anecdotally, people who ice fish, such as Mike Davis, are finding they cannot go fishing as often because the ice isn't as thick and doesn't last as long as it did in years past.

Year to year there's a lot of variability.

In the last decade, we've seen the longest ice cover and the shortest.

But over the decades, the trend is decreasing ice cover.

Gull Lake in Barry and Kalamazoo counties has lost about 22 days of ice in a typical year since the 1920s.



8

Intense storms cause more flooding

The Wixom Lake dam and the Sanford Lake dam both failed, flooding Midland and other downstream communities.

21 billion gallons of water rushed into the Tittabawassee. At the Shiawassee National Wildlife Refuge, employees opened up water control structures, allowing in 10 feet of water across a recently developed one thousand acre marsh. That diverted more than three billion gallons.




9

Wetland restoration good for wildlife and people

Ducks Unlimited biologist Kali Rush says wetlands around Saginaw Bay once stretched across ten counties. Most of that has been drained for farming.

Rush says if you never hunt ducks or take hikes to see birds or fish, you still might benefit from wetland restoration.

Wetlands can mean the difference in whether sewer systems back up into your basement or that small creek nearby rises to your doorstep.

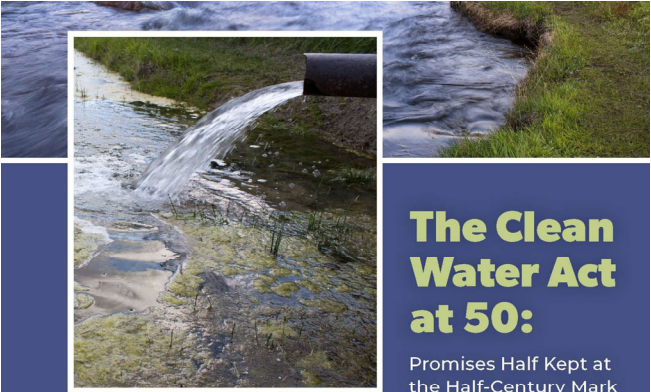


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Swimmable? Fishable?

While a fair number of environmental groups celebrated the 50th anniversary of the Clean Water Act, some such as the Environmental Integrity Project noted the shortcomings of the landmark 1972 law aimed at making it safe for people to fish and swim in the nation's waters.

Discovery of legacy pollutants such as PFAS and loopholes in the law not regulating “non-point” pollution such as agriculture has meant almost all fish in Michigan contain some level of pollutant, and many bodies of water are not safe to swim.






The Clean Water Act at 50:

Promises Half Kept at the Half-Century Mark

EIP ENVIRONMENTAL INTEGRITY PROJECT

EMBARGOED FOR RELEASE: March 17, 2022

11




Beaches are frequently closed due to high levels of E. coli bacteria

12

Often blamed on goose droppings, E. coli comes from humans and livestock

Faster testing has helped better determine when E. coli is present, but detection doesn't solve the problem.

Sunlight is a disinfectant, but many streams and creeks have been diverted to pipes. The intense storms that are caused by climate change washes all kinds of contaminated water from septic tanks, farms, and wildlife directly into lakes



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Chemical soup in water is a complex issue

The discovery of PFAS contamination in many of Michigan's lakes, rivers, and water sources has been a reminder that there are many other pollutants.


Fish advisories in different watersheds warn of Dioxins, mercury, PCBs, PBDEs, PFOS, and even DDT. Often more than one chemical can be found in the same fish.

In many areas, drinking water came from PFAS contaminated sources for decades before it was discovered.

We don't know what other chemicals might yet be discovered in water.




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MDEQ investigating Grand Rapids-area site for PFAS contamination

Oct 26, 2018

A site that was once home to a Lacks Enterprises plating shop is being investigated for PFAS contamination. The Michigan Department of Environmental...




PFAS: What are the possible health risks?

Oct 4, 2018

This week, we're looking at PFAS chemicals: they're industrial chemicals that have contaminated water sources around the state. PFAS chemicals are used to...


▶ LISTEN • 4:12



Municipal water treatment plants figuring out PFAS contamination

Feb 27, 2019


The state has finished testing all the public water systems in Michigan for PFAS chemicals. Of more than a thousand municipal systems, 119 are...



PFAS firefighting foams are still in use across Michigan

Sep 14, 2018


Firefighting foams containing PFAS chemicals are a major source of water contamination. But fire departments around Michigan are still using them. Kevin...



Nessel: \$10B PFAS settlement with 3M doesn't resolve Michigan's claims

Kelly House, June 28, 2023

Michigan communities with PFAS in their water supply could be eligible for payments from chemical manufacturer 3M, after the company reached a \$10.3 billion settlement to address federal lawsuits from hundreds of water supplies across the country.




PFAS: What is this stuff?

Oct 1, 2018

In recent months, the State of Michigan has found several places where drinking water and fish are contaminated by a class of chemicals called PFAS. This...

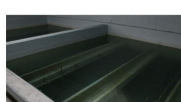
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PFAS is in fish and wildlife. Researchers prowl Michigan for clues.

February 16, 2021


J.D. Hock's heart sank in 2018, when the state of Michigan warned it was unsafe to eat deer harvested within a five-mile radius of Clark's Marsh in Oscoda...



Plainfield Township could spend up to \$62 million due to PFAS

Mar 20, 2019


Plainfield Township could end up paying millions of dollars more than it thought due to PFAS. Residents of Plainfield Township in Kent County, north of...



Report: 10% of Michigan water systems have detectable levels of PFAS

Aug 16, 2019

A new report finds PFAS contamination in about one in ten public water systems in Michigan. PFAS compounds (per- and polyfluoroalkyl substances) have been...



Court rules against Michigan's restrictions on PFAS in water

Kelly House, August 23, 2023

An appeals court ruled the Department of Environment, Great Lakes, and Energy did not go through all the steps required by law when it made its PFAS rule.

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Emerging contaminants are the big challenge for drinking water treatment plants at the moment.



While old chemicals are being discovered by better testing of water sources, many new chemicals have not yet been tested for safety by federal agencies. The decision to let industry use chemicals until they're proven to be unsafe has become one of the major failings of U.S. environmental laws and it's costing society in both money and public health risks.

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Plastic and microplastic pollution


This photo is from Duck Lake State Park, connected by a short channel to Lake Michigan. This was typical across the marshy area near the channel.

Plastic pollution is a serious issue that won't be solved by volunteers working to cleanup the plastic a couple of times a year. Likely that only way it will be stopped is a greater public awareness and less reliance on plastic packaging.

The recent effort to end the use of plastic straws was admirable, but not completely successful.



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Environment & Climate Change

Chemical Impact: Microplastic pollution more complex than we think, says new research

May 4, 2021


Microplastic pollution has been building up in the Great Lakes for at least four decades, but our understanding of its impact on fish and other aquatic...



Some clothes cause microplastic pollution. Researchers say you can do something about that, but it's costly.

Dec 31, 2021

Researchers at the University of Toronto found a filter can remove 87 percent of microfibers from the drain water.




Environment & Climate Change

What's being done about plastic trash getting into the Great Lakes?

Lester Graham, August 28, 2023


As researchers learn more about the hazards of plastics and microplastics in the Great Lakes, it's becoming clear Canada and the U.S. need to cooperate in stopping the pollution.



A new tiny enemy is threatening Lake Superior: microplastics

Aug 13, 2019

A new contaminant is threatening Lake Superior. Microplastics – tiny plastic fragments under five millimeters – have been discovered in the western basin...



Study: Your Great Lakes microbrews might come with hint of microplastic

Jun 15, 2018

We Michiganders love our craft beer. In recent years, small breweries have been popping up everywhere, from big cities to small towns. But it turns out...

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MI-ACE 2023

9

Microplastics in tap water and in Great Lakes beer

A study out of Minnesota found many of the public water systems that got water from the Great Lakes had microplastics in the finished water.

The study also looked at beer and also found microplastics. But, there wasn't a correlation between the amount of microplastics found in the source water. Sometimes there was more and sometimes less.

Filtering might cause less. But what would cause more?



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Septic tanks

The cost of replacing a drain field or an entire septic system can cost \$10,000-\$40,000.


In some remote rural communities, a home might only be worth \$25,000. Communities find that innovative homeowners have hooked up to the stormwater system.

In other places, a home in the country might have a failing system, but no one really knows, because the system is never tested.

Even the newest septic systems release bacteria and viruses into the environment.

There is no disinfection.

Michigan has no statewide inspection requirement.



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Toxic algal blooms becoming more common


When Toledo, Ohio shut down its water system because of concern about cyanobacterial blooms, it got national attention. Since then cyanobacteria has been found in many inland lakes.

The blooms are fed by excess phosphorus from agricultural fields. Fertilizers containing phosphorus are used on lawn and row crops. Animal waste from feedlots is also spread on fields as fertilizer.

Ohio and Michigan are relying strictly on volunteer efforts by farmers to reduce the use of phosphorus. They've failed so far.



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Environment & Climate Change

Scientists are learning just how complicated it will be to reduce toxic blooms in Lake Erie

Lester Graham, August 21, 2023

Two decades of study reveals a complex combination of factors causing large cyanobacterial blooms and their toxicity. Government incentives to reduce nutrient pollution from farms have not been enough to solve the problem so far.




Environment & Climate Change

Too few farmers are curbing pollution in Lake Erie. Should they be forced?

March 9, 2021

As climate change complicates Lake Erie's algae problem, scientists say farmer must do far more to reduce phosphorus runoff. But will enough farmers...

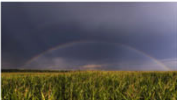


Environment & Climate Change

One Michigan county tells the story of a nation plagued by water pollution

September 24, 2020

Farms housing thousands of animals are one of several sources contaminating the Pine River and dividing a mid-Michigan community Murray




Environment & Climate Change

Farms in six Southeast Michigan counties are major sources of Lake Erie toxic blooms

September 13, 2022

Michigan and Ohio are among the worst places in America that spread liquid manure — and that's having an impact on Lake Erie.




Environment & Climate Change

Will Michigan farmers voluntarily help reduce phosphorus loading into Lake Erie?

Lester Graham, July 25, 2022

Public pressure is growing over toxic cyanobacteria blooms growing in the western basin of Lake Erie and other places in Michigan.




Environment & Climate Change

Toxins from cyanobacterial blooms can be airborne, but the threat to public health is unclear

Lester Graham, August 22, 2023

Researchers are studying how much of cyanobacterial toxins become airborne. They say breathing in the toxins is much worse than ingesting them.




Environment & Climate Change

Report: MI and OH must spend hundreds of millions more annually to curb toxic blooms in Lake Erie

Lester Graham, February 14, 2023

A new report suggests Michigan and Ohio will fail to reduce nutrient runoff by 40% as agreed upon.




Environment & Climate Change

Lake Erie's failed algae strategy hurts poor communities the most

Laura Gersony | Circle of Blue, September 20, 2022

Algal blooms are hiking the cost of water for people already struggling to pay their bills.



Environment & Climate Change

Harmful algal blooms appearing on Lake Erie earlier than usual


Lester Graham, July 6, 2023

NOAA satellite images and a research vessel sampling Lake Erie water both found evidence of harmful algal blooms on July 5, a much earlier date than typical.

22

Enbridge Line 5

- A 70 year old pipeline sits on the lakebed of the Straits of Mackinac
- Line 5 has twice been damaged by boats. Once by and anchor strike; once by cables
- Enbridge was responsible for a nearly 1 million gallon oil spill in the Kalamazoo River
- Enbridge proposes building a tunnel under the Straits of Mackinac to house Line 5
- Governor Rick Snyder agrees
- Governor Gretchen Whitmer revokes easement and orders Line 5 to shut down
- Protests and court battles



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Enbridge campaigns for support

Enbridge Energy has garnered the support of some labor unions and business interests, including the Michigan Chamber of Commerce.

Some businesses dependent on water and tourism fear a Line 5 oil spill could permanently damage Michigan’s coastline on both the Lake Michigan and Lake Huron sides of the state.

Enbridge sets up new 24/7 patrol system and cargo ship inspection to prevent further damage to the twin pipelines. Almost no one is relieved by this measure.



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Line 5 tunnel project

Many environmental groups are astounded that Enbridge would spend so much for the tunnel. After all, we're transitioning to a renewable fuel economy.


Independent analysts predict Enbridge will recoup its investment in a very short time and will make a lot of money for at least another few decades.

Regulators at the state and federal level are considering the case for the tunnel.


Illustration on bottom right is timeline for the U.S. Army Corps of Engineers' Environmental Impact Statement process.




Environment & Climate Change
Is the Line 5 tunnel a bridge to Michigan's energy future or a bad deal?
April 5, 2021
As Canadian officials lobbied a Michigan Senate committee in March to keep the Line 5 pipeline open, Sen. Wilmer Brinkley (D-Grand Rapids) grew frustrated.



Environment & Climate Change
"Water is life" is the theme of Day 1 of protests to shut down Enbridge Line 5
Lester Graham, May 13, 2021
On Thursday, environmental groups and Native Americans plan to present Enbridge Energy with symbolic eviction notices. They want Enbridge to abide by:



Environment & Climate Change
Enbridge Line 5 tunnel project in Michigan delayed another 1.5 years
Kelly House, March 24, 2023
Permitting delays have tacked on another year-and-a-half to the planned Line 5 tunnel project under the Straits of Mackinac. Assuming the project gets needed permits, construction won't begin until 2026 at earliest. The tunnel was supposed to be completed in 2024.




Ignore the buzz, here's why Enbridge Line 5 won't likely close anytime soon
Kelly House, November 16, 2021
Michigan Governor Gretchen Whitmer ordered Line 5 closed a year ago, citing safety concerns. The Biden administration is now involved. But chances of an imminent shutdown appear slim. We lay out some of the hurdles.

Flint was the start of a different conversation

The government caused debacle that was the Flint water crisis changed the conversation about water affordability.

The Detroit water shutoffs also contributed to an increased awareness that the price of water in some places was much higher than others. Usually the cities populated with people of color (generally because of white flight) were the poorest and paying the most for water.

The Great Lakes News Collaborative worked for months to determine the various issues and causes of failing infrastructure.



Disinvestment

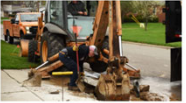
After spending a lot of money to help communities build water systems in the 1970s and 80s, the federal government stepped away. After a couple decades, aging systems started to deteriorate.

In Michigan, the state government changed the revenue sharing formula which ended up causing local governments to either raise the price of water or neglect upkeep.

Those decisions are now resulting in many large and small cities facing a crisis. The recent influx of federal money will delay, but not prevent further breakdowns in America's drinking water systems.



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Environment & Climate Change

Short-changing Michigan local governments has resulted in deteriorating water systems and other services

Lester Graham, May 9, 2022

Cuts in state and federal funding has contributed to Michigan's drinking water




Environment & Climate Change

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

Kelly House, May 3, 2022

Michigan cities rich and poor, big and small have been delaying maintenance on their water systems for decades. Now, even wealthy towns are suffering




Environment & Climate Change

After decades of neglect, bill coming due for Michigan's water infrastructure

Brett Walton, May 2, 2022

Though the costs are enormous and success is by no means assured if upgraded assets are not maintained, for the first time in decades Michigan is




Environment & Climate Change

Michigan's rural water systems confront generations of inadequate investment

April 19, 2021

Building, maintaining, and operating a water and sewer system is generally the most expensive item on a small town's budget. The U.S. Department of...




Environment & Climate Change

High cost of water hits home

Brett Walton, May 10, 2022

Rising rates hurt the state's poorest residents.




Environment & Climate Change

Michigan's "very big opportunity" in infrastructure windfall

Brett Walton, May 10, 2022

More communities gain access to the largest federal infusion in a half century.




Environment & Climate Change

Many rural towns have neglected drinking water systems for decades

Lester Graham, May 3, 2022

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




Environment & Climate Change

Rising cost of water in Michigan leads to affordability problems

Brett Walton, December 2, 2021

A growing number of Michigan households are burdened by high water bills, a University of Michigan report finds.




Environment & Climate Change

Right to water: Could 2023 be the year Michigan ends shutoffs?

Kelly House, February 8, 2023

Some Michigan lawmakers want to declare water a human right. The push comes as Michigan utilities resume water shutoffs following a COVID-19



Environment & Climate Change

Will Michigan's largest water provider target tiny city for next shutoffs?

Brett Walton/Circle of Blue, June 29, 2023

Highland Park residents worry that the water debt could be placed on property taxes, potentially leading to mass foreclosures.

28

Merge or fail ?

A handful of systems have merged after hard negotiations. The feedback from customers is mixed, but generally costs go down.

Some cities have the option of combining systems to save money. But, some leaders resist because of pride in self-reliance.

As one insider noted, “You don’t want to give up the illustration of the high school mascot or your city slogan on the water tower.”

Some water systems will give up control to private companies who promise efficiency. Many of those companies are foreign investors.

Rural systems are often too far apart to make a merger cost efficient.

Many hold out hope for a government bail out.

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Environment & Climate Change

Water's True Cost

As the nation prepares to pour hundreds of billions of federal dollars into rescuing water systems, the Great Lakes News Collaborative investigates the true cost of water in Michigan.

What Michigan can do to help save drinking water systems in the state

Michigan Radio | By [Natasha Blakely](#), [Lester Graham](#), [Kelly House](#), [Brett Walton](#)
Published May 16, 2022 at 8:00 AM EDT

-Jesse Sanders / Guide Of Blue

Keeping drinking water pure and flowing will require some tough decisions about money. State and local officials have put off those decisions for too long and people are paying the price.

Consider consolidation

Excess infrastructure is expensive to maintain. Consolidating could mean small steps like sharing staff, or big changes like closing decrepit, oversized water plants and buy water from a neighbor.

Restructure rates

The American Water Works Association offers this advice about rates: They need to be high enough to cover day-to-day operations, plus big-ticket items like replacing water mains every 50 years.

More state and federal assistance

The country's water and sewer infrastructure was built with massive federal subsidies. By 1976 the federal government was spending more than \$20 billion a year (in 2022 dollars) on water and wastewater utility infrastructure. That's declined to about \$3 billion a year.

Restore municipalities' revenue sharing

Michigan has indirectly reduced money that municipalities can spend on water and wastewater infrastructure.

Get creative

1) Charge polluters for upstream contamination. 2) Raise funds for upkeep and operations by selling data or showing it to bond rating agencies to show the durability of your water or sewer system.

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No easy answers

We might live in a water-rich region, but some communities are still struggling with access to water, water affordability, and water pollution.


For too long, we've looked at the world and said, "At least the rivers aren't burning."

But when you cannot safely eat the fish, and you cannot safely swim in the water, and your citizens cannot afford water, then Michigan is failing.

A lake system containing twenty percent of the world's accessible fresh water surrounds this state. We should be way ahead of the rest of the world in understanding how to protect water.




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Great Lakes News Collaborative wins US Water Prize






Great Lakes Now and its partners in the Great Lake News Collaborative received a national journalism award for coverage of water issues in the Great Lakes.



Great Lakes News Collaborative to receive Sierra Club Award

Station News
Suzanne Belanger, January 12, 2022

The Sierra Club Michigan Chapter has announced that the Great Lakes News Collaborative, which includes Michigan Radio, has been selected to receive the organization's Environmental Journalism award for 2021.



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