



# SUSTAINING

## MICHIGAN'S WATER HERITAGE



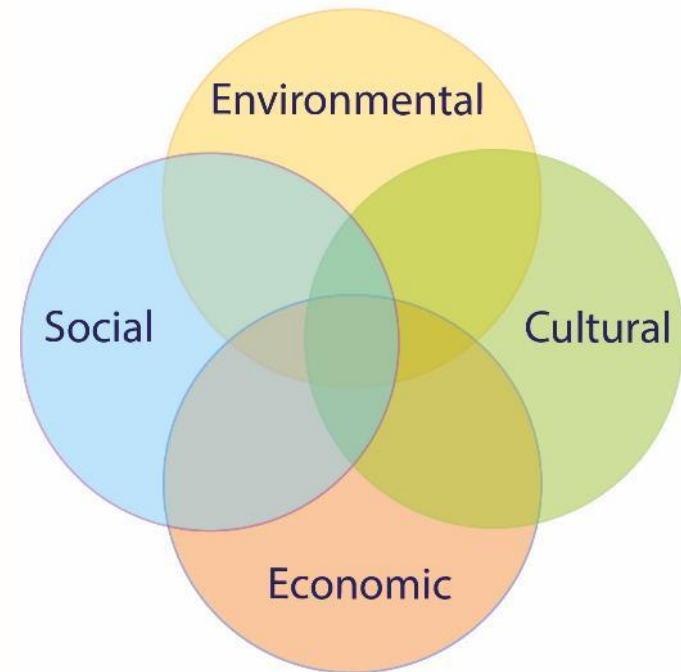
Jon W Allan  
Director

Michigan Office of the Great Lakes

A STRATEGY FOR THE NEXT GENERATION

# Michigan's Water Strategy

- ❖ Roadmap for future use, enjoyment and conservation of Michigan's water resources.
- Ecosystem Approach:
  - Encompasses all Michigan's water resources
  - Broad and integrated systems perspective
  - Emphasis on restoring hydrologic connectivity
  - Integrates ecological, social, economic and cultural values



# Water Strategy Framework

- 9 Goals, 9 Outcomes
  - Strategic actions, process oriented, drive behavior change and performance.
- 75 Recommendations
  - No single recommendation can solve complex system problems, whether ecological or economic.
- Metrics for Measuring Progress and Success
  - Outcomes vs. deliverables





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# INSPIRE

stewardship for clean water

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# Inspire Stewardship for Clean Water

- ❖ Grow water ethic through improved water literacy, volunteerism and civic engagement.

## Key Recommendations:

- Integrate water literacy into state of Michigan curriculum standards.
- Build volunteer opportunities and partnerships.



# Inspire Stewardship for Clean Water

## ❖ Progress:

- MSU Water School for local and elected officials
- Water literacy principles integrated into science curriculum standards
- Great Lakes Community Foundations Water System Collaborative





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# PROTECT

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and restore aquatic ecosystems

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# Protect and Restore Aquatic Ecosystems

- ❖ Holistic approaches to managing water across the landscape
- ❖ Support planning and decision-making at the watershed scale

## Key Recommendations:

- Prevent and manage invasive species.
- Achieve a 40% reduction in phosphorus in Western Lake Erie Basin
- Promote green infrastructure, low impact development, green spaces to address stormwater.

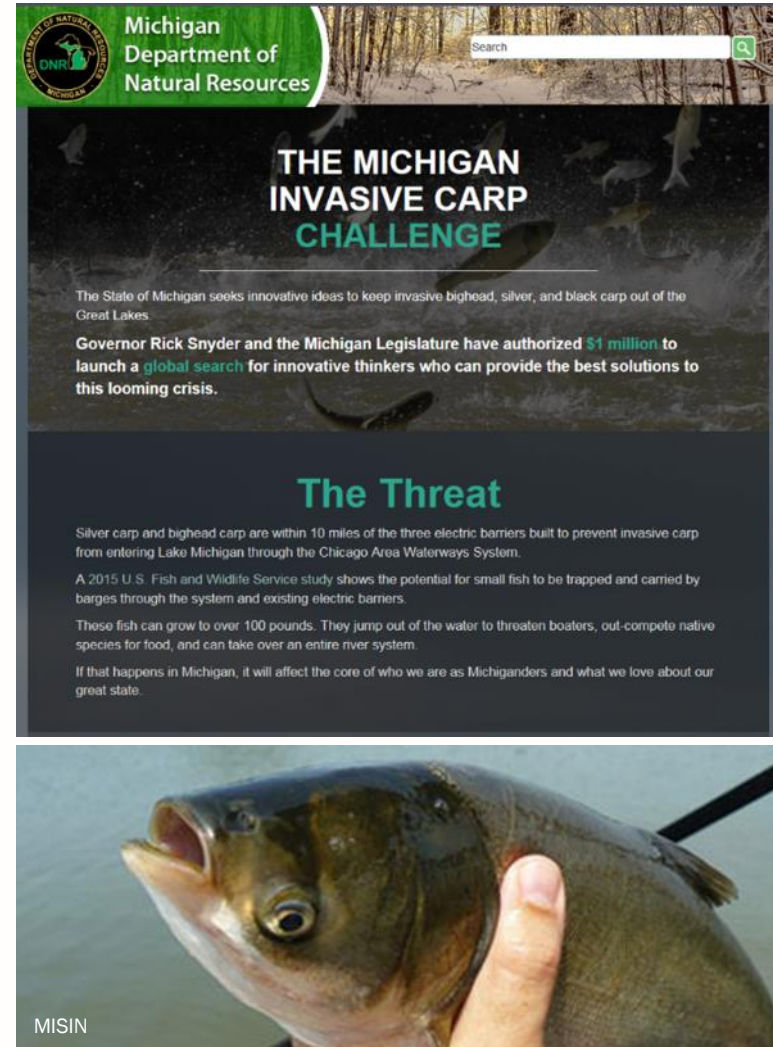


MDOT photo team



# Preventing Invasive Carp and other AIS

- Prevent invasive carp introductions through bait, aquaculture and canals
- Awarded \$11 Million over 3 Years through Michigan Invasive Species Program
- Activate early detection and response systems
- \$1 Million Carp Challenge
- Initiate pilot projects with Ontario



The screenshot shows the Michigan Department of Natural Resources website. At the top left is the Michigan DNR logo. The main heading is "THE MICHIGAN INVASIVE CARP CHALLENGE". Below this, text states: "The State of Michigan seeks innovative ideas to keep invasive bighead, silver, and black carp out of the Great Lakes. Governor Rick Snyder and the Michigan Legislature have authorized \$1 million to launch a global search for innovative thinkers who can provide the best solutions to this looming crisis." A section titled "The Threat" explains that silver and bighead carp are within 10 miles of electric barriers in the Chicago Area Waterways System, and that a 2015 study shows small fish can be trapped and carried by barges. It notes these fish can grow to over 100 pounds and threaten native species. A photo of a fish is shown at the bottom right of the page.

MISIN

# Achieve 40% Phosphorous Reduction in the Western Lake Erie Basin

- 2015 Western Lake Erie Collaborative Agreement
- Under Annex 4 of the Great Lakes Water Quality Agreement, U.S. and Canada will develop domestic action plans by 2017
- MDEQ, MDARD and EPA developing U.S. Action Plan
- Michigan declared Western Lake Erie impaired
- Achieve phosphorus reductions in key locations like Michigan's portion of Maumee River
- Educating farmers through Lake Erie field days program





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# ENSURE

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clean and safe water

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# Ensure Clean and Safe Waters

Michigan DNR

- ❖ Protect and restore water quality to ensure ecosystem function and support human uses of water resources.

## Key Recommendations:

- Protect drinking water from contamination.
- Pass a statewide sanitary code.
- Accelerate clean-up of contaminated sites.
- Establish priorities and address emerging pollutants of concern.



# Ensure Clean and Safe Waters

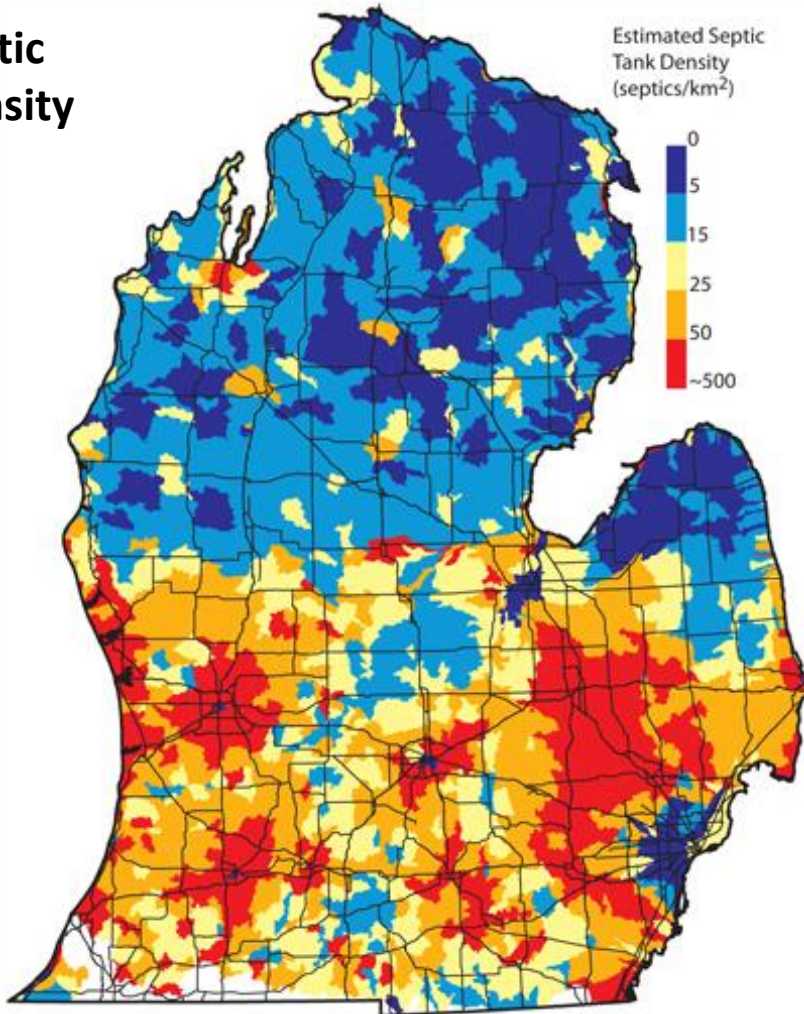
## ❖ Progress:

- Implement 21<sup>st</sup> Century infrastructure recommendations
- Increase funding for redevelopment of contaminated sites
- 2 pipeline studies underway to assess risks and ensure spill prevention strategies in straits
- Revitalization of Huron-Erie Corridor real-time monitoring system
- Update drinking water standards

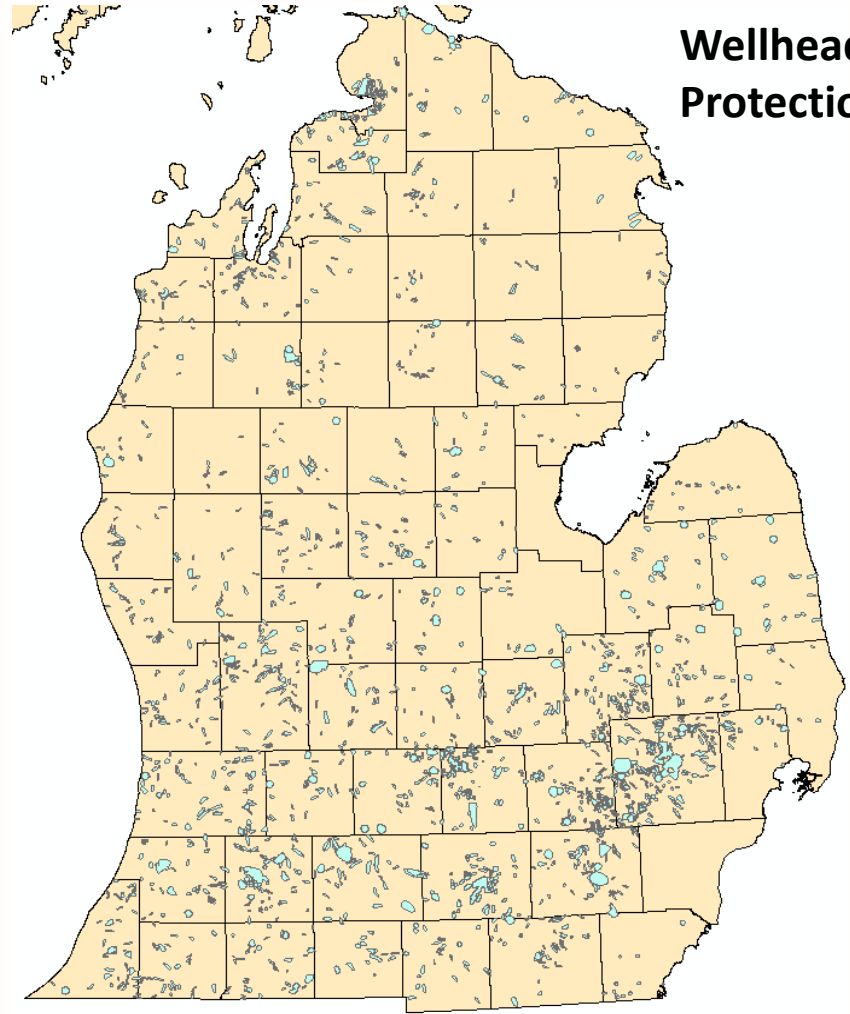


# Ensure Clean and Safe Waters

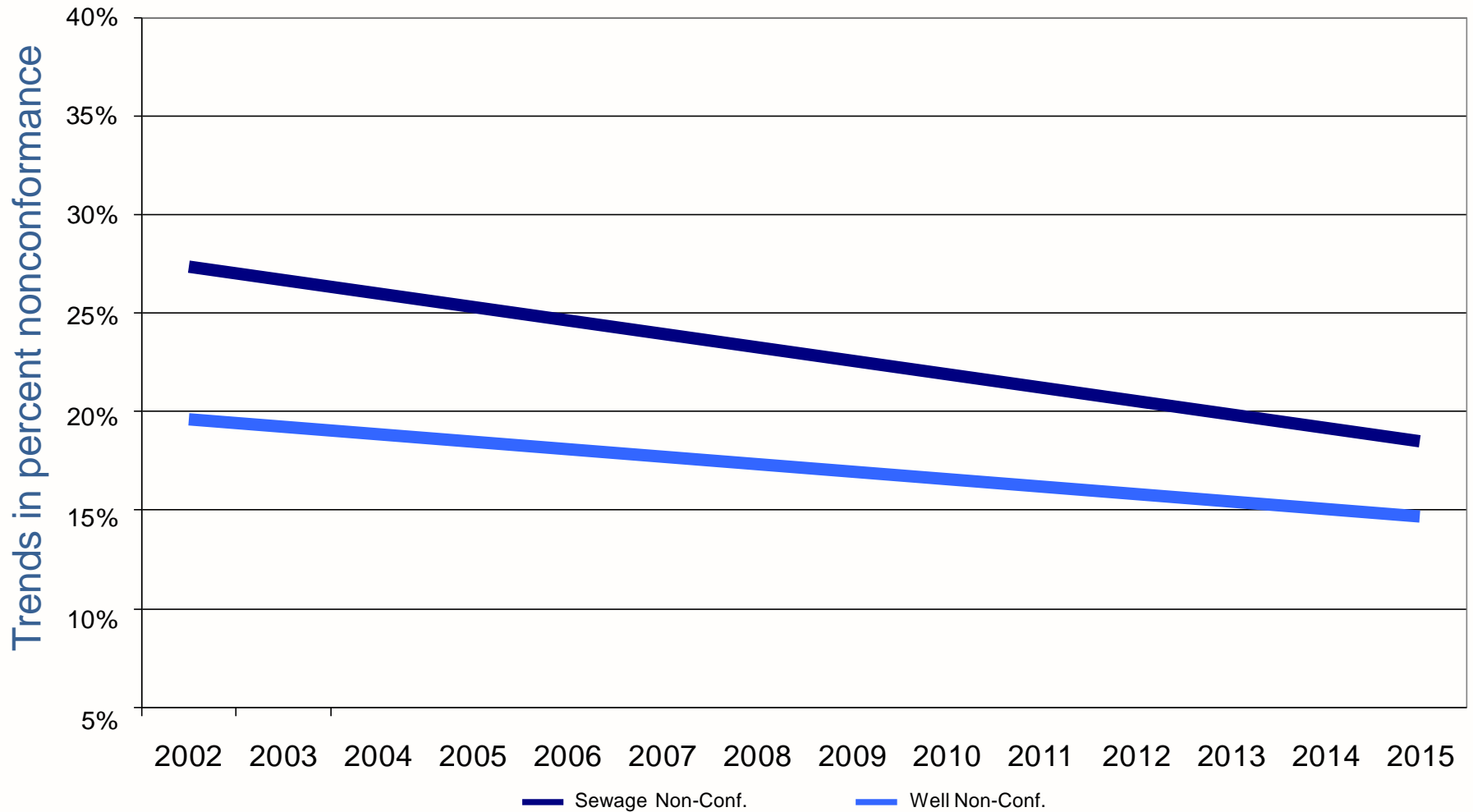
**Septic  
Density**



**Wellhead  
Protection**



# Shiawassee County: Point of Sale Program Effects



Source: Shiawassee County Health Department



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# INVEST

in water infrastructure

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# Invest in Water Infrastructure

- ❖ Build support for investments in water infrastructure improvements to address aging and deteriorating systems causing water quality issues and public health concerns.

## Key Recommendations:

- Establish a long-term Water Fund to achieve Water Strategy goals including water infrastructure management.



Michael Beaulac, OGL

# Invest in Water Infrastructure

## ❖ Progress:

- Michigan Tech Regional Infrastructure Pilot for statewide asset management
- \$20 million proposed in FY18 for 21st Century infrastructure Commission recommendations
- Innovation in drinking, storm, and waste water management systems through technology
- Water resource utility for the future



Michael Beaulac, OGL



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# CREATE

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vibrant waterfronts

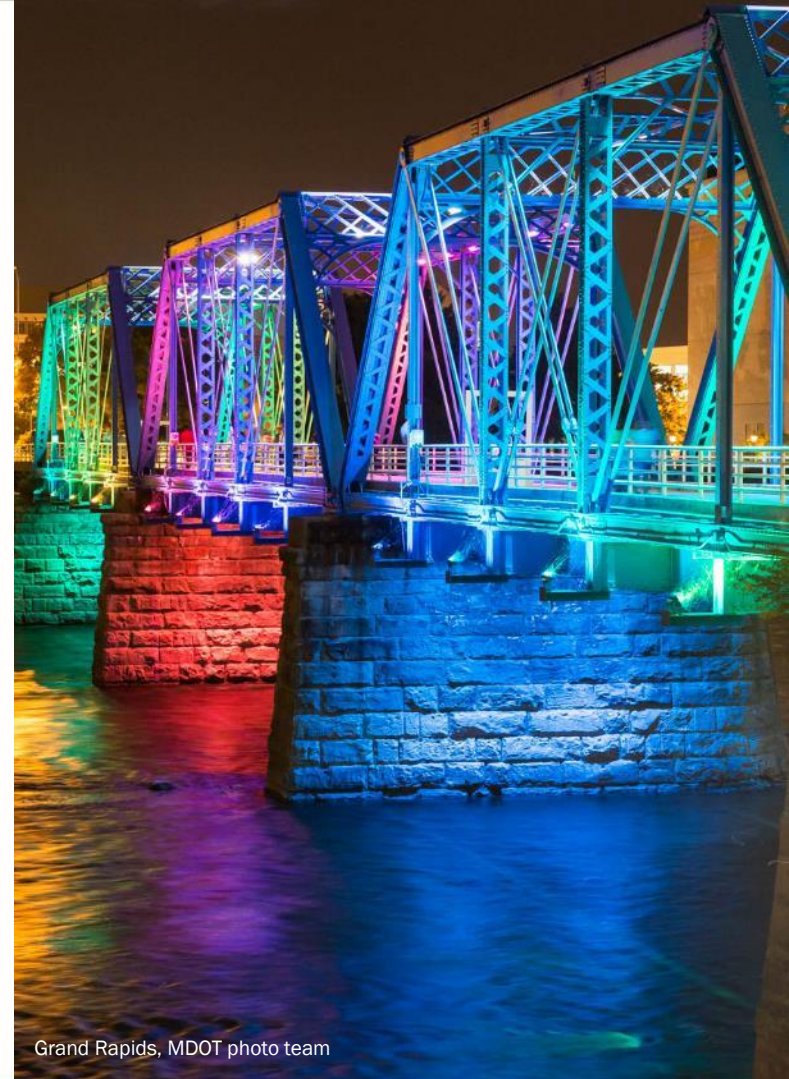
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# Create Vibrant Waterfronts

- ❖ Integrate watershed, community and economic development planning as a strategic asset.
- ❖ Create opportunities and places for people to enjoy water resources

## Key Recommendations:

- Leverage water assets to create sustainable economic opportunities.
- Support investments in commercial harbors and ports.
- Address long-term maritime infrastructure needs.

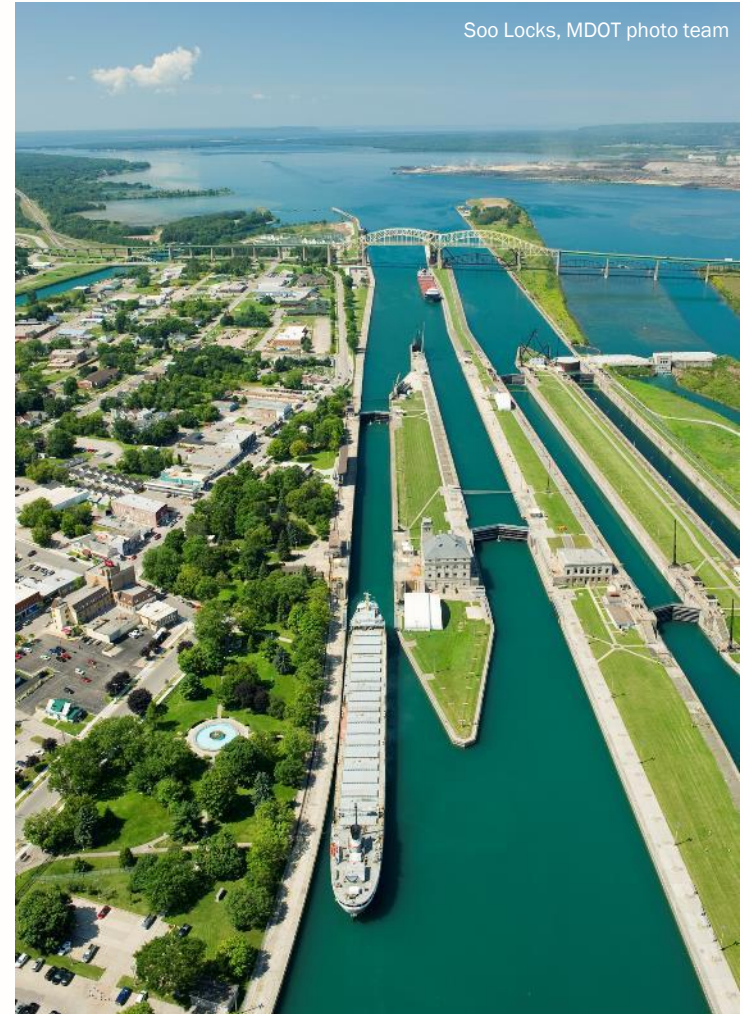


Grand Rapids, MDOT photo team

# Great Lakes Maritime Strategy

## ❖ Progress:

- Strategy Goals: Double maritime trade, shrink environmental impacts, and support Great Lakes industries.
- Enhance cruise ship opportunities through improved customs
- Support new construction at Soo Locks
- Harbor and cargo port investments





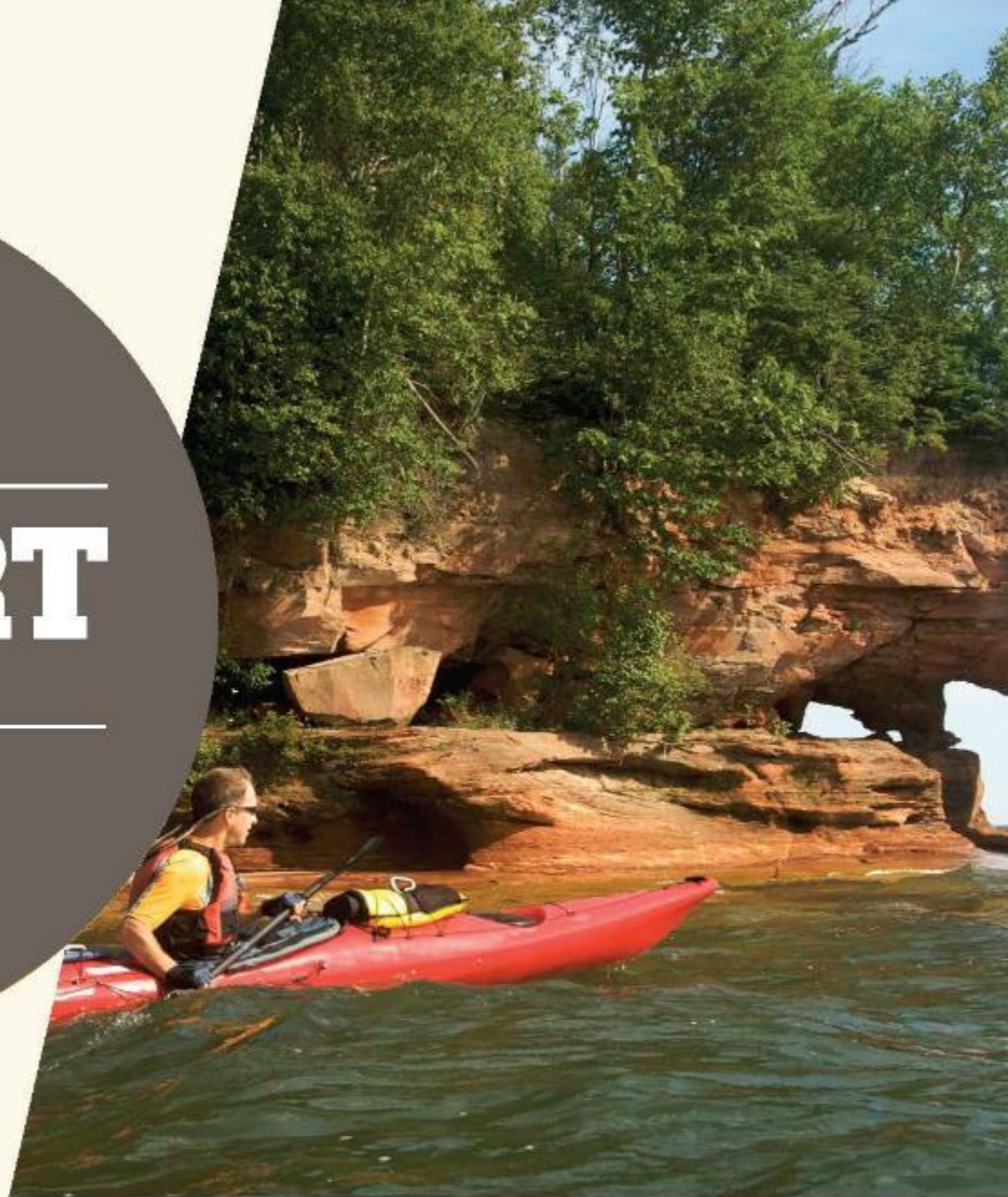
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# SUPPORT

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water-based recreation

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# Support Water-Based Recreation

Michigan DNR

- ❖ Create more opportunities for access to water resources through water trails and public access.

## Key Recommendations:

- Expand real-time beach monitoring.
- Make infrastructure investments in recreational harbors.
- Develop and implement a water trails system.
- Provide/expand public access.



# Support Water-Based Recreation

## ❖ Progress:

- Public access projects
- Small harbor sustainability
- DNR State Water Trail designation
- Expand water trails system







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# PROMOTE

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water-based economies

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# Promote Water-Based Economies

- ❖ Direct technologies to solve water problems and export solutions.
- ❖ Grow sustainable water-based industries.

## Key Recommendations:

- Accelerate water technologies using a business-led initiative.
- Establish voluntary water efficiency targets
- Develop conservation and reuse strategy.



# Promote Water-Based Economies

## ❖ Progress:

- University
  - MSU Year of Water
  - Fountain Challenge
- Industry
  - Water Design Challenge
  - DOW innovation hub
  - Erie Hackathon
- Business
  - Accelerate private commercialization
- Public/Private
  - Autonomous vessels
  - Drain management/harmful algae





# Monitor Water Systems

- ❖ Monitor water systems including surface and groundwater to provide information for decisions, actions, and investments.

## Key Recommendations:

- Implement a water resource decision framework.
- Support groundwater and surface water monitoring.



Paige Filice, MiCorps

# Monitor Water Systems

## ❖ Progress:

- WMU - Michigan Geological Survey groundwater monitoring
- Blue Accounting decision support tool
- Tracking with Erie Stat

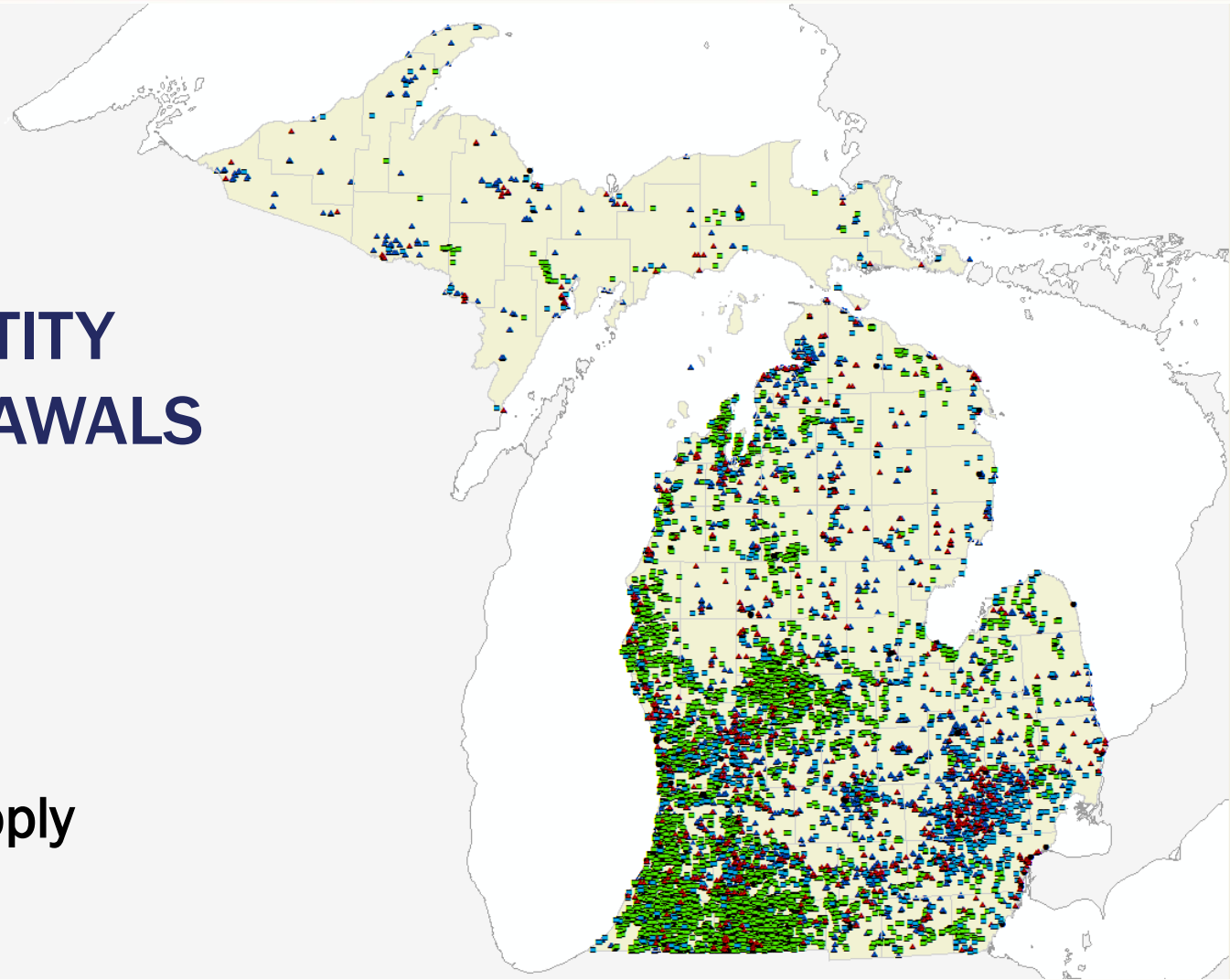


Michael Beaulac, OGL

# Monitoring Groundwater Systems

## LARGE QUANTITY WATER WITHDRAWALS

- Ag Irrigation
- Non-Ag Irrigation
- ▲ Industrial
- ▲ Public Water Supply
- Electric power





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# BUILD

governance tools

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# Build Governance Tools

- ❖ Build new models of governance at the local and regional level.
- ❖ An array of groups must continue to build collaborative approaches.

## Key Recommendations:

- Create an integrated system for managing water at local level.
- Support community capacity to implement a shared vision for water.
- Retain full authority to continue to manage Michigan's water resources.



# Build Governance Tools

## ❖ Progress:

- Water Team
- Wild rice team convened between State and Tribes to protect and manage wild rice species
- GVSU Integrated Watershed Commission Framework
- Saginaw Chippewa Tribe integrating Water Strategy into planning



# Q&A

Michigan Office of the Great Lakes

[www.michigan.gov/deqog1](http://www.michigan.gov/deqog1)

[www.michigan.gov/waterstrategy](http://www.michigan.gov/waterstrategy)

