



MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

# Groundwater Permitting

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Aaron Keatley, Chief Deputy Director

# Topics To Be Discussed

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Michigan's  
Groundwater



Permitting  
Process  
Initiatives



Groundwater  
Quality  
Permitting



Groundwater  
Quantity  
Permitting



Questions

# The 6<sup>th</sup> Great Lake?

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The Great Lakes Basin Holds More Than 1,000 Cubic Miles Of Groundwater. This Is Roughly The Same Size In Volume As Lake Michigan.



Michigan's Groundwater Is Critical To Our Economy. We Use More Than 200 Billion Gallons Of Groundwater Each Year.



Recharge Is Becoming More Complicated As We Alter Land Use & Move Water Off Our Surfaces More Quickly.



# Groundwater Used For Drinking Water

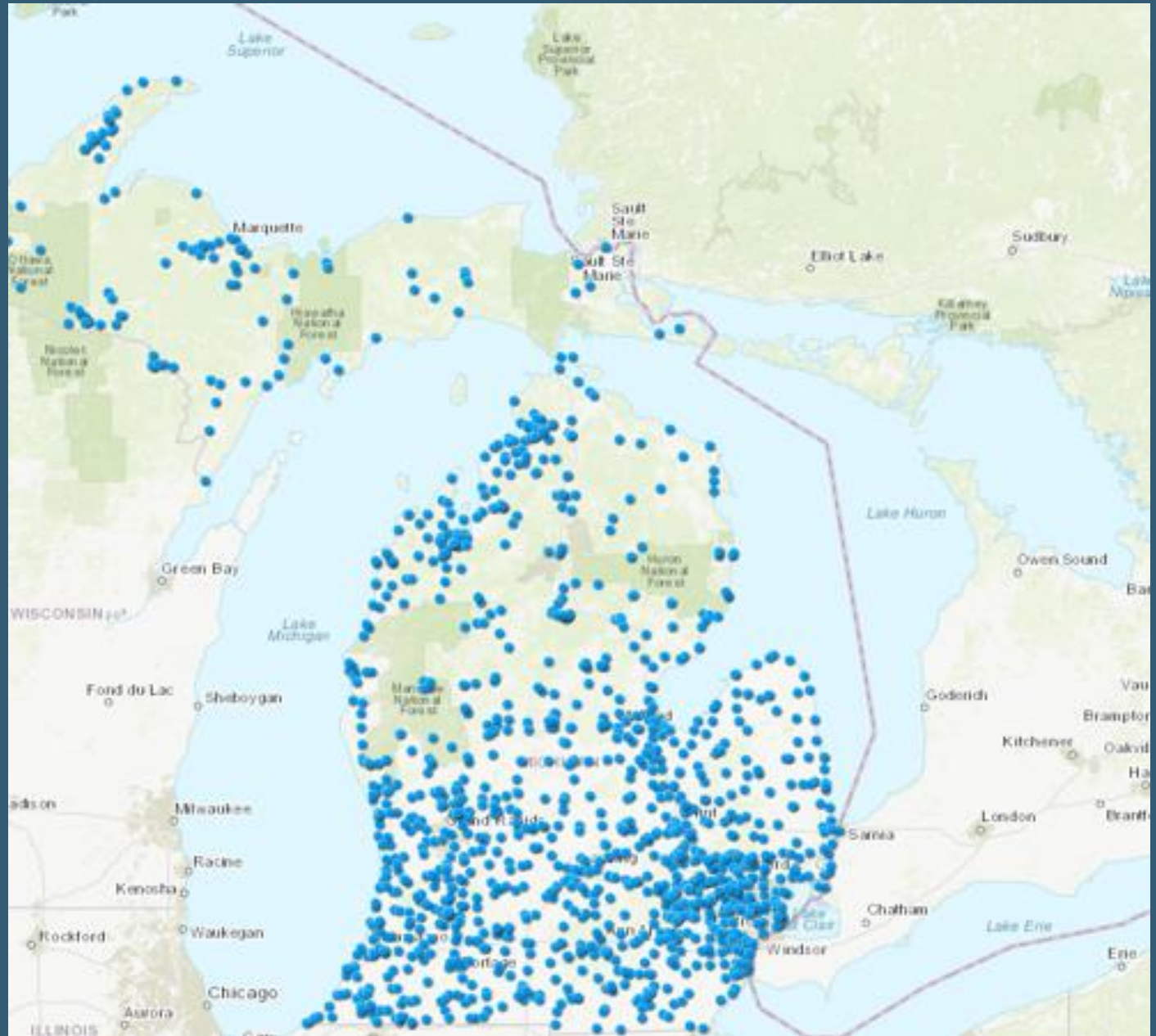
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More Than 4 Million People In Michigan  
Rely On Groundwater As Their Primary  
Source Of Drinking Water

Over 1 Million Private Drinking Water Wells  
Serve Single-Family Homes

1,086 Community Water Supplies Obtain Drinking  
Water From Groundwater

# Community Water Supplies Utilizing Wells



# Groundwater Is Fragile

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Our Surface Waters & Groundwaters Are Interconnected. It Is Often Difficult To Talk About Protecting Groundwater Without Also Thinking About Surface Water.

- Wetlands
- Streams
- Lakes

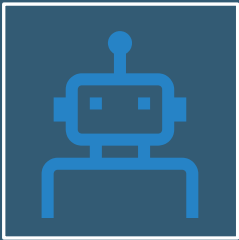
What We Do To Our Surface Can Affect Our Groundwater.

- Recharge Is Becoming More Complicated As We Alter Land Use & Move Water Off Our Surfaces More Quickly.
- What We Place On The Ground Is Highly Likely To Impact Our Groundwater Quality
- Groundwater Is Very Difficult To Remediate If Contaminated. Proactive Policies Are Essential.

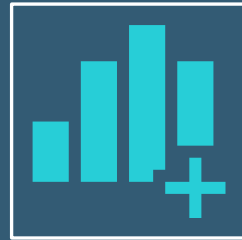
# Permitting Process Initiatives

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# Permit Overview



60+ Types Of Permits



Nearly 24,000  
Actions Annually



Nearly 95% Permits  
Approved



430+ Staff Work On  
Permits



## Typical

Air

Wastewater & Stormwater

Hazardous Waste Generation

## Potential

Wetlands, Water Resources, Etc.

Water Withdrawal

Brownfields

Asbestos

Drinking Water

# What Can You Expect From Us?

A Simple ~5 Step Process With Ongoing Communication At Each Step:

1. Pre-Application Meeting (*Voluntary*)
2. Application Submittal
3. Review For Administrative Completeness
4. Formal Review Of Application Begins
5. Public Notice/Comment (*If Required*)
6. Decision

Team EGLE Is Your Partner. We Will Work With You At Each Step Of The Process & Identify Creative Solutions To Emerging Issues & Concerns.

Team EGLE Strives To Get It Right The First Time, Giving You Confidence & Certainty In Your Permit.

# Permitting Timeline Variables

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Volume

Quality

Complexity

Staffing

# EGLE's Commitment To Customer Service

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- Increased Permitting Staffing By Nearly 15% Since 2019
  - Proposed New Resources In FY 2025 Budget
- Began The Process Of Streamlining Permitting Into A Single Database—MiEnviro Portal—& Modernizing Departmental IT
- Expanded Concierge Services (e.g., Pre-Permitting Meetings) For Applicants & Established Permit Coordinators
- Increased Permitting Education Offerings & Tools (e.g., Permit Checklist, Webinars) To Help Applicants
- Enhanced Coordination With State Departments & Agencies
- Implemented Lean Process Improvements
- Acted On Executive Directives (2023-4, 2022-6) To Improve Permitting & Increase Accountability

# Why Permit Groundwater Discharges?

## Land Application Can Be An Effective Tool In Managing Wastewater

- If Wastewater Is Not Adequately Distributed When Discharged, Metals Can Mobilize Into The Groundwater
  - Metal Mobilization Can Lead To Arsenic, Lead, & Other Heavy Metals Leaching Into The Groundwater & Being Drawn Into A Drinking Water Well
- If The Discharge Area Becomes Saturated For Long Enough, Pollutants Can Leach Into The Groundwater



# Groundwater Quality Permitting

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# Wastewater Management is Essential

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Problems Can Occur Due To Inadequate Or Inappropriate Wastewater Treatment:

Contamination Of Residential Drinking Water Wells

Limiting The Installation Of New Drinking Water Wells

Installation Of Costly Groundwater Monitoring Well Network

Designation As A Facility Under Part 201


Installation Of New Treatment Systems

Impacts To Surface Water Through Venting Groundwater

# Lessons Learned & Next Steps

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EGLE Is Finding Many Examples Of Land Application Done Using Previously Accepted Practices That Did Not Adequately Protect Groundwater



EGLE Is Revisiting Its Discharge Permits To Make Sure We Are Still Benefiting From Land Application But Ensuring Our Groundwater Remains Safe

CAFOs

Food Processors

Slaughterhouses

Digestors

Biosolids



While Difficult To Adjust, We Need To Redefine How We Manage The Quality Of Our Groundwater

# Groundwater Quantity Permitting

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# Great Lakes Compact

- Compact Among The 8 Great Lakes Basin States & Parallel Agreement With Ontario & Quebec
- Prohibits Diversions Outside The Great Lakes Basin
- Prevents Adverse Resource Impacts
- Each Member State & Province Must Regulate Its Internal Water Resources
- Surface Water & Groundwater Are Interconnected Parts Of A Single Hydrologic Cycle
- Part 327 Is Michigan's Statute To Administer The Compact







# Part 327: Great Lakes Preservation

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- Baseline Capacity Reported < 4/1/2009
- New Or Increased Withdrawals > 100,000 Gallons Per Day
- 70 Gallons Per Minute Rated Pump Capacity
- New Or Increased Withdrawals Register Using Water Withdrawal Assessment Tool (WWAT)
- Site-specific Reviews (SSR)
- New Or Increased Withdrawals > 2 MGD Require Permit
- Prohibits Diversions
- Prohibits Adverse Resource Impacts





# Water Use Program Purpose

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- Register Large Quantity Withdrawals
- Collect Annual Water Use Data
- Determinations On Potential Impacts To Water Resources As A Result Of Proposed Withdrawals
- Processing Water Withdrawal Permits

# Water Withdrawal Assessment Tool

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On-line Screening Tool For Proposed Large Quantity Surface Water Or Groundwater Withdrawals



Property Owner Or Agent Provides Information About Proposed Withdrawal



Estimates Stream Flow Depletions From Large Quantity Withdrawals



Property Owner Issued Registration Receipt If Withdrawal Passes



Tool Cannot Pass Withdrawals In Watersheds Approaching Or At The Point Where Adverse Resource Impact Is Likely



Property Owner Can Request Site-specific Review By EGLE

# What Have We Learned?

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Water Withdrawal  
Assessment Tool



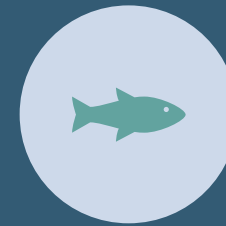
Increased  
Education &  
Outreach Needed



Problems With  
Excessive Water  
Withdrawal



More Data  
Collection



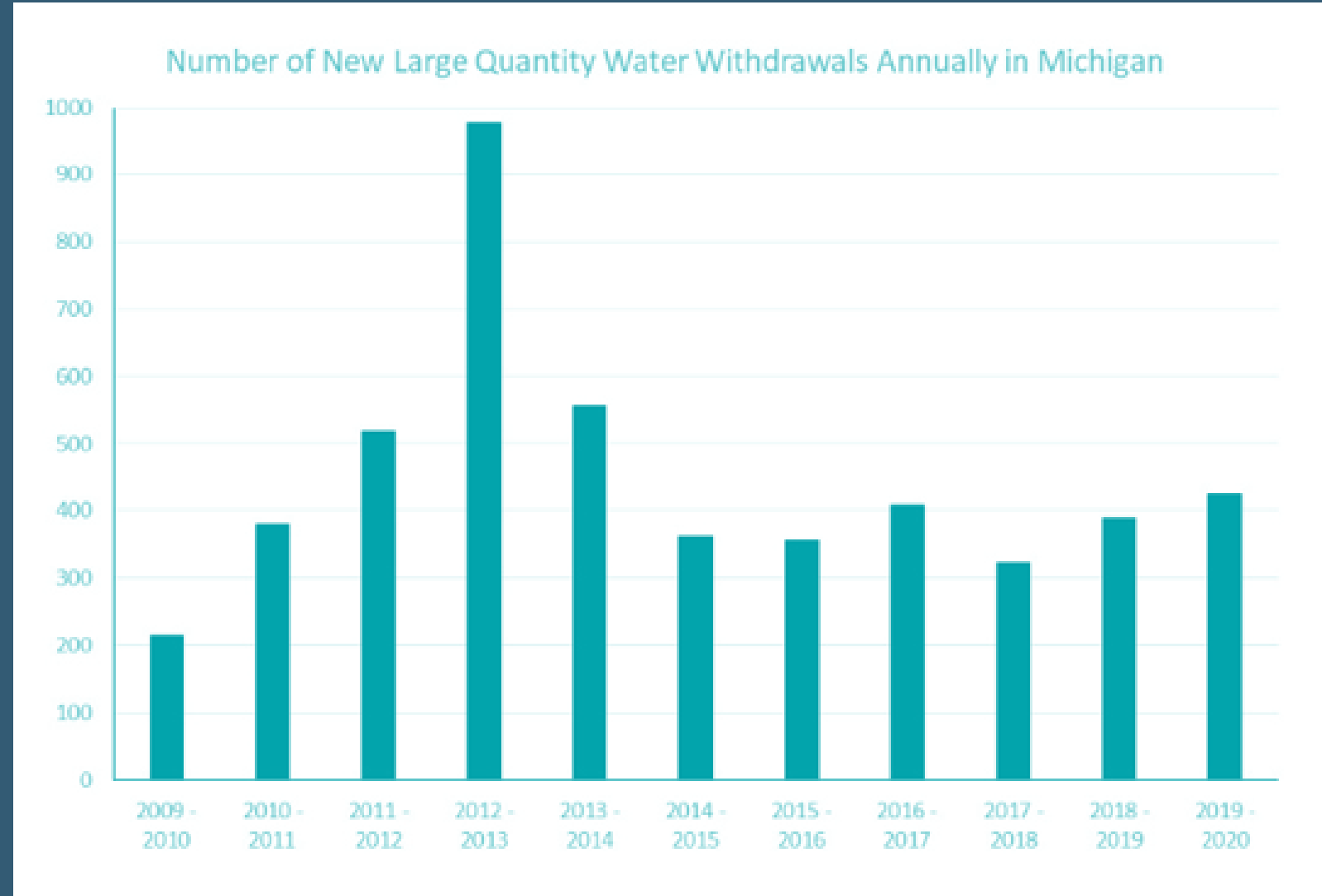
Adverse Resource  
Impacts In Inland  
Lakes



Office Of Auditor  
General Findings

# Water Use Advisory Council (WUAC) Background

- Advisory Was Called For In Original Statute, Several Iterations Through Time, Reconvened In 2018 By PA 509
- Charged With Making Recommendations To Advance & Improve Conservation, Data Collection, Modeling, Research, Refinement, & Administration Of The Water Withdrawal Assessment Process
- Appointments Made By Governor, Senate Majority Leader & Speaker Of The House
- Representatives From Water User Sectors, Conservation & Environmental Organizations, First Nations, Inland Lake Associations, & Relevant Agency Representatives & Technical Advisors
- Charged With Reaching Consensus



MICHIGAN WATER USE  
ADVISORY COUNCIL  
2020 REPORT

DECEMBER 2020



# WUAC 2020 Report

- The First Of At Least Biannual Reports
- All Recommendations Were Reached By Unanimous Consensus
- The Recommendations Represent The Most Critical Investments Needed For The Program To Be Developed & Improve
- We Can't Well Manage What We Do Not Well Understand
- Most Are Based On Data, Data Management & Use Needs
- Have Benefits To All State Water Management Issues
- Legislature Appropriated \$10M To Implement WUAC Recommendations & Ongoing Efforts

# Summary

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Water Is Michigan's Strongest Asset  
Going Into The Future...

BUT THAT ASSET IS FRAGILE



Our Knowledge Of Our Groundwaters Is  
Incredibly Sparse; We Need To Have A Better  
Understanding To Manage & Get All The  
Benefits From Them





MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

Questions?

800-662-9278 | [Michigan.gov/EGLE](https://Michigan.gov/EGLE)