GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
EXECUTIVE OFFICE

PHILLIP D. ROOS
DIRECTOR

November 25, 2025

VIA EMAIL

David Naftzger, Executive Director
Great Lakes St. Lawrence River Basin Water Resources Council
Secretary, Great Lakes St. Lawrence River Water Resources Regional Body
Conference of Great Lakes St. Lawrence Governors and Premiers
309 East Rand Road, #167
Arlington Heights, Illinois 60004

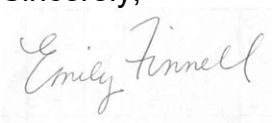
Dear Dave:

SUBJECT: 2025 Water Conservation and Efficiency Program Annual Assessment
Submitted on behalf of the State of Michigan

On behalf of the State of Michigan, enclosed is the 2025 Water Conservation and Efficiency Program Annual Assessment being sent pursuant to and in satisfaction of the obligations included in Section 4.2 of the Great Lakes St. Lawrence River Basin Water Resources Compact. Please note that these reports are subject to revision and update during the Compact Council and Regional Body program review process.

If you have any questions, please do not hesitate to contact me.

Sincerely,



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Enclosure
cc: Peter Johnson, Conference of the Great Lakes St. Lawrence Governors and Premiers
Phillip D. Roos, Director, EGLE
Ann Larson, Deputy Director, EGLE
Lena Pappas, EGLE

GREAT LAKES-ST. LAWRENCE RIVER BASIN WATER RESOURCES COMPACT WATER CONSERVATION AND EFFICIENCY PROGRAM ANNUAL ASSESSMENT

State of Michigan
November 25, 2025

This Water Conservation and Efficiency Program Annual Assessment fulfills Michigan's obligation under Section 4.2.2 of the Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact).

LEAD AGENCY AND OFFICE CONTACTS

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) Water Use Program is the lead agency responsible for Michigan's water conservation and efficiency program.

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Program Contact: Lena Pappas, Manager, Groundwater and Geological Services Section, Geologic Resources Management Division; 517-245-8119, PappasL4@Michigan.gov.

STATUS OF MICHIGAN'S WATER CONSERVATION AND EFFICIENCY 2025 GOALS AND OBJECTIVES

Michigan adopted water conservation and efficiency goals and objectives that are consistent with the Basin-wide goals and objectives. These goals and objectives were developed by the former Water Resources Conservation Advisory Council, a stakeholder forum of executive and legislative appointees that was established for collaborative study, evaluation, and advisement for Michigan's water management and water conservation and efficiency programs. Michigan's water conservation and efficiency goals and objectives continue to be met through the water conservation and efficiency program that was initiated with the adoption of the Compact.

The Water Use Advisory Council (WUAC), established under Part 328, Aquifer Protection, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), continues to play an integral part in Michigan's water management and water conservation and efficiency program. It provides a platform for raising water withdrawal related issues and establishes an integrated framework of roles and responsibilities for all stakeholders in managing Michigan's water resources. The WUAC collaboratively studies, evaluates, and provides advice regarding Michigan's water management, conservation, and efficiency programs. It also assists on technical issues, implementation, and monitoring overall progress of Michigan's water use program. The WUAC creates opportunities for the public, university researchers, industry professionals, advocacy groups, and other interested parties to be involved and to work directly with state agencies to set policy and shape the program's direction. This promotes better understanding and cooperation to the benefit of the program and

results in shared investment in the management and sustainability of Michigan's streams, lakes, wetlands, and groundwater.

The WUAC is charged to report biennially to the Michigan Legislature, EGLE, the Michigan Department of Natural Resources (DNR), and the Michigan Department of Agriculture and Rural Development (MDARD). The WUAC released its latest biennial report in December 2024. The first biennial report to the Legislature was released in December 2020 and the second was released in December 2022. The Council's recommendations have the potential to advance and improve data collection, modeling, research, and refine administration of the water withdrawal assessment process and Michigan's water conservation and efficiency program. They will also benefit many other state water management issues.

The WUAC's open and ongoing discussions keep agency program staff informed on the effectiveness and progress of these programs, providing valuable insight to guide Michigan's efforts to improve water conservation and efficient use of water.

In addition to the WUAC's collective work, Michigan is focused on the impacts of climate change, including building resilience to high water, reducing Michigan's carbon footprint, and addressing ageing water infrastructure. Michigan Governor Gretchen Whitmer has ordered EGLE's Office of Climate and Energy to coordinate the state's efforts to achieve carbon neutrality by 2050 through development and implementation of the MI Healthy Climate Plan, which is outlined in Executive Order 2020-182 and Directive 2020-10. The MI Healthy Climate Plan, released in April 2022, lays out a broad vision and roadmap to carbon neutrality. The plan is meant to protect public health and the environment while also helping to develop new clean energy jobs by making Michigan fully carbon-neutral by 2050.

In March 2022, Governor Whitmer signed the bipartisan Building Michigan Together Plan (Public Act 53), the state's largest-ever infrastructure investment at $4.7 billion, including more than $1.9 billion to be administered by EGLE over two fiscal years from the federal American Rescue Plan Act ($1.3 billion), the federal Infrastructure Investment and Jobs Act ($470 million), and the state's general fund ($130 million). As part of this plan, through the Drinking Water State Revolving Fund and the Clean Water State Revolving Fund, EGLE issued financing agreements to 72 projects for a total of $1.05 billion in low-interest loans in fiscal year 2025.

Efforts continue to assess Michigan's new and existing climate, energy, and water infrastructure programs and initiatives to identify opportunities to further advance Michigan's water conservation goals and objectives.

Michigan also continues to implement the Michigan Water Strategy, an all-inclusive vision and blueprint to ensure Michigan's water resources continue to support healthy ecosystems, communities, and economies for current and future generations.

WATER CONSERVATION AND EFFICIENCY PROGRAM OVERVIEW

Michigan's water conservation and efficiency program is founded on the water withdrawal assessment requirement that applies to all new or increased large quantity withdrawals (LQWs). The assessment process evaluates proposed water withdrawals relative to the environmental impact standards set for conserving and protecting the water resources of the Great Lakes Basin.[1] The likely resource impacts of a proposed withdrawal must meet the environmental impact standard and be authorized by EGLE before the withdrawal can begin.[2] If the withdrawal is likely to exceed the environmental impact standards, the applicant must reduce their withdrawal or show by site-specific data and analysis that their withdrawal's impact won't exceed the standard. LQWs are cumulatively tracked and accounted for against the environmental standard at a sub-watershed scale, ensuring that the water resources of the basin are conserved even at a small scale.[3]

Michigan's water conservation and efficiency program goes beyond the assessment process to include a comprehensive program of water use management. This program establishes an integrated framework of roles and responsibilities for private and public water users and governmental agencies in managing Michigan's water resources. Further, this framework creates opportunities for involvement by the public (e.g., local committees and volunteer efforts such as stream monitoring); universities (e.g., research and technical assistance); and other interested parties resulting in a latticework of shared investment in the sustainability of Michigan's lakes, streams, and groundwater.

In conjunction with annual water use reporting that is required for LQWs, owners are required to review water conservation measures applicable to their water use sector. Implementation of conservation measures is voluntary.[4] In sub-watersheds that are approaching the environmental impact standard, to have a withdrawal approved, an applicant must implement the water conservation measures they deem to be reasonable.[5] For applications greater than two million gallons per day (MGD) capacity, it is required that all sector or withdrawal-based conservation measures are complied with as a condition of approval.

[1] Michigan Compiled Laws (MCL) 324.32705
[2] MCL 324.32706b, 324.32706c, 324.32723
[3] MCL 324.32706e
[4] MCL 324.32707, 324.32708
[5] MCL 324.32706c, 325.1004

WATER CONSERVATION AND EFFICIENCY PROGRAM CONSISTENCY WITH REGIONAL OBJECTIVES, AND THE PROMOTION OF ENVIRONMENTALLY SOUND AND ECONOMICALLY FEASIBLE WATER CONSERVATION MEASURES

Compact's Water Conservation and Efficiency Objectives	Summary of Current Efforts
I. Guide programs toward long-term sustainable water use.	• Regulatory framework that requires resource conservation. • Adaptive programs that integrate new data, methods, and policies in response to changing environmental conditions. • Develop centralized comprehensive groundwater database to inform decision-making.
II. Adopt and implement supply and demand management to promote efficient use and conservation of water resources.	• Sub-watershed scale cumulative impact limits for withdrawals. • Notification of nearby water users and local government when limits are approached. • Restrictions on withdrawals when local impact would exceed limits or is unreasonable. • Drinking water infrastructure grants and loans to communities involving water main work, service line replacements, plant enhancements, and other upgrades. • Administering Retired Engineers Technical Assistance Program (RETAP) to provide assistance to institutions, industries, government agencies, and businesses with 500 or fewer full-time employees with on-site energy and sustainability assessments that include water conservation and efficiency measures.
III. Improve monitoring and standardize data reporting within water conservation and efficiency programs.	• Outreach efforts continue with property owners, well drillers, and other interested parties to increase awareness of Part 327's requirements and increase compliance. • Continue asset management planning initiatives, including a grant program administered by EGLE to further mature local community's asset management programs.
IV. Develop science, technology, and research.	• Ongoing state/federal glacial geology mapping partnerships. • Optimizing groundwater and stream gage networks through state-wide analysis of monitoring sites and program goals in collaboration with the United States Geological Survey (USGS).

	• Funded research study to identify innovations and technological advancements in water conservation and efficiency best management practices for business and industry sectors.
V. Develop education programs and information sharing for all water users.	• Provide public access to tools and data used by the Water Withdrawal Assessment Tool to increase collaborative regulatory decision making. • Water use data published in media outlets. • Integrated assessments provide on-site, direct assistance services to help businesses and communities to meet their sustainability goals. • Finished implementation of program to build capacity to deliver existing education programs and trainings on water efficiency for the agricultural sector including animal industries. • Annual agriculture irrigation practices workshops. • Began implementation of a mobile lab pilot program to replace center pivot systems with water efficient equipment and track changes to agricultural output. • Michigan Water School is available as online modules to educate and train local appointed and elected officials on water management. • Hosted annual Great Lakes Freshwater week to celebrate water resources, raise awareness of the wellness benefits of water and encourage Michigan residents to experience water, become educated about water resources, take action to become water stewards, and promote water workforce development. • Partnered with the U.S. Environmental Protection Agency's (EPA) WaterSense Program and hosted a Fix a Leak week. • Obtained additional Great Lakes Restoration Initiative (GLRI) funding for Phase 3 of the From Students to Stewards Initiative. This phase will provide a funding opportunity for student-led, community-based water stewardship projects that address local issues, develop and share a comprehensive freshwater education program database, and provide funding to cover field trip expenses for hands-on water-based learning experiences.

I. Guide programs toward long-term sustainable water use

Michigan continues to guide programs toward long-term water sustainability through the implementation of its water withdrawal assessment program. Michigan's LQW assessment process, environmental impact standard, and cumulative impact tracking system have effected significant changes in the planning and development of LQWs. This process has driven the integration of long-term sustainable water use concepts into water management decisions and has raised the awareness of water use and resource impact implications. The LQW assessment process is designed to be adaptive and able to respond to changing environmental conditions. Additional hydrologic data is continually being collected and combined with refined models to inform LQW assessment methods and policies to support better decision making and ensure long-term sustainable water use.

Additionally, the WUAC works collaboratively to continuously assess and improve the program based on new science, data, advancements in modeling, and new technology. The WUAC created the Water Conservation and Efficiency Committee (WCEC) as a standing committee under the WUAC. The WCEC advises and makes recommendations to the WUAC on opportunities to improve and enhance Michigan's water conservation and efficiency program and support sustainable water use. The WCEC is working with state, academic, industry, and utility partners on projects and programs that advance water conservation and efficiency within Michigan's water sectors through best practices, improve public education on Great Lakes water conservation; account for and measure water and energy savings from water infrastructure improvements; and build public-private partnerships with energy utilities to promote technical assistance and residential programs.

As part of the recommendations included in the WUAC 2020 biennial report, EGLE's Office of the Great Lakes (OGL) funded a project to identify innovations and technological advancements in water conservation best practices that can benefit Michigan's water sectors. The project, led by the Alliance for Water Efficiency, was completed in October 2025. The final report includes an overview of existing Michigan water sectors' processes to review and/or change water conservation best management practices (BMPs) and how broadly water conservation BMPs are implemented. The report also includes research on technological advancements in water sector conservation BMPs and their impacts within the business and industry sectors in other Great Lakes states and provinces and other innovative jurisdictions. This grant was co-funded by the Michigan Great Lakes Protection Fund and funding appropriated by the Michigan Legislature to EGLE through the American Rescue Plan Act to support implementation of the 2020 WUAC recommendations.

In addition, EGLE is building more capacity to deliver existing education programs and training on water efficiency for the agricultural sector including animal industries. Staffing has been increased, and a needs assessment survey has taken place. Funding appropriated by Michigan's Legislature to support implementation of the 2020 WUAC recommendations has provided support for two educators that were hired in 2024 through a contract between EGLE, MDARD, and Michigan State University (MSU) Extension. The Legislature appropriated funds to implement the

2022 WUAC recommendations in the fiscal year 2024 budget. With this funding, EGLE and MSU Extension started work in 2025 on a pilot program to evaluate and retrofit existing irrigation systems to improve water and energy efficiency. The program will include on-farm demonstrations, evaluating and retrofitting existing irrigation systems, measuring the improved water, energy use, and crop yield efficiency, and estimating the potential reduction of greenhouse gas emission and cost savings.

II. Adopt and implement supply and demand management to promote efficient use and conservation of water resources

EGLE works with many water users and industry contractors on an individual basis throughout the assessment process to ensure withdrawals are implemented in an efficient manner. This assessment process incorporates both supply-side management of the water resources using a specialized database that tracks cumulative impacts of withdrawals at the sub-watershed level, and demand-side management by notifying all affected water users when withdrawal limits begin to be approached in an area. Michigan's common law reasonable use doctrine is the legal foundation underlying the assessment process and promotes the conservation and efficient use of water in its own way when conveying to water users that water is a shared, finite resource under this doctrine. Users are encouraged to conserve as a matter of routine, as opposed to conserving only when required, such as in the event of a conflict situation when supplies are limited or overtaxed. The LQW assessment process is designed to be adaptive and able to respond to changing environmental conditions.

III. Improve monitoring and standardize data reporting within water conservation and efficiency programs

EGLE and MDARD collect annual water use reporting which includes reporting on water conservation and efficiency best practices. Some water use sectors (e.g., industry, public water supply) have better capabilities for accurate water use reporting since they meter their withdrawals and discharges. Measurement and evaluation of water conservation, water use efficiency, and changes over time, remain difficult to track from an agency perspective based on water use reporting data alone. EGLE compliance staff continue to work on a case-by-case basis with property owners, well drillers, consultants, and other interested parties to bring other violations of Part 327 into compliance.

EGLE and the Michigan Department of Technology, Management and Budget (DTMB) have begun work with EarthSoft to adapt its Environmental Quality Information System (EQuIS) database for EGLE's new Groundwater Data Management System (GDMS). EGLE and the DTMB staff are meeting on an ongoing basis with EarthSoft's EQuIS development team. This will be a multi-phase project that will take several years to complete. The initial phase is working to ingest chemical and geologic information to build a foundational dataset. The data management system will accept data submitted by both EGLE staff and external users (e.g., consultants, regulated parties, researchers). The EQuIS system will be

linked to a Geographic Information System (GIS) environment to display data, as well as to external databases (e.g., EPA, USGS) so that EGLE can pull data directly from EQuIS for its use in reporting to federal agencies (e.g., EPA, USGS). EQuIS will allow for standard interpretation of available data to allow regulators to better visualize the environmental and hydrogeological context of a site based off all data available within state databases.

The WUAC's recommendation to create an Integrated Water Management Database (MIWMD) is being implemented. The purpose of the MIWMD would be to increase the effectiveness and efficiency of all water related programs in Michigan by making all this data easily accessible and in a common geospatial format. The MIWMD will eventually be incorporated into the EQuIS data management system. The MIWMD project was combined with the Michigan Hydrologic Framework project into a single grant project that is being administered by MSU.

Other efforts underway to improve data collection include the work of the Michigan Infrastructure Council and the Michigan Water Asset Management Council. Both councils were created in statute to develop and direct implementation of a statewide strategy to standardize and streamline data collection, storage, and analysis related to infrastructure.

The WUAC recommendations are consistent with Michigan's Water Strategy, which also includes a recommendation to create a coordinated strategy for groundwater data collection, including a data management system. Such data is a critical measurement and indicator of the effects of water use and the effects of water conservation and efficiency practices.

IV. Develop science, technology, and research

Michigan is actively developing science, technology, and research on an ongoing basis through the efforts of various projects by state, federal, and academic institutions. Michigan is funding several research projects in high water use areas to better understand the groundwater-surface water interaction and to better understand Michigan's water resources and water needs both now and in the future. This data will be used to improve the assessment and forecasting of new water uses' impact on the resource through increased use of site-specific data and more localized regional models. Increasing and improving the quality of data is imperative to effectively promote proactive conservation and efficient use to water users before shortage issues occur. Michigan's Quality of Life Agencies (EGLE, MDARD, and the DNR) have been implementing several key research priorities from the WUAC's December 12, 2014, final report including:

- **Michigan Water Resource Availability Studies**: EGLE is partnering with Michigan Geological Survey (MGS) to complete a water resource study focused on identifying water availability, infrastructure capacity, and projected future water use for Michigan's most populated areas where water use conflicts can arise. Current study scope includes a seven county area located in western

Michigan and will be expanded to incorporate an additional eight counties in eastern Michigan.

- **Evaluating water withdrawal effects and research to improve Michigan's Water Withdrawal Assessment Tool (WWAT)**: Several projects are underway to develop and improve the WWAT. In September 2025, EGLE released a new WWAT interface using a new depletion estimate analytic solution back end published through a cooperative effort between the USGS and the Wisconsin DNR. The re-released WWAT makes tools used internally accessible to the regulated community. The WWAT also helps provide a visual context for water availability by creating live maps showing current water availability within each regulated water management area alongside publicly available withdrawal information. Data layers within the WWAT have also been published to provide access to state data. A second release which will incorporate and make publicly available additional stream depletion analytic solutions specified within water use regulation into the WWAT is planned for early 2026.

  The Michigan legislature appropriated funding to implement two recommended projects from the 2024 WUAC report. In the first project, referred to as "Conduct downstream accounting research", DNR Fisheries Division, MSU and MSU-USGS Cooperative Research Unit are working together to assess changes in habitat in low-flow conditions in rivers monitored by streamflow gages throughout Michigan and to evaluate the effects of water withdrawals at local and catchment scales while controlling for long-term changes in precipitation, climate and land use.

  The second, entitled "Evaluate downstream streamflow depletion effects through a stream network", is a USGS-led modelling analysis to better understand how water withdrawal effects either propagate or are attenuated downstream in a stream's drainage network. The evaluation of transitional probability as an estimation tool for hydrogeologic interpretation of quaternary deposits is nearing completion, alongside an update of the statewide estimates of glacial and bedrock aquifer transmissivity and storativity using an expanded and cleaned dataset. All projects are intended to improve the WWAT so it better simulates observed hydrologic processes in Michigan watersheds, more accurately predicts effects of water withdrawals on stream habitats and fish communities, limits adverse effects of permitted water withdrawals on stream fish communities in Michigan, improves geostatistical estimates of aquifer capacity in three dimensions, and provides up-to-date aquifer property estimates used daily within the WWAT.

- **USGS Monitoring Partnerships:** EGLE and USGS continue a joint funding agreement for operating stream gages and monitoring wells, as well as collecting miscellaneous stream flow measurements, including monitoring within the nested wells located in Hillsdale County, Michigan, within the predicted zone of influence for AquaBounty's aquaculture well field in Pioneer, Ohio. Recent collaboration

between USGS and EGLE include the Hydrologic Enhancement for Michigan (HEMI) Study, which is focused on optimizing the state-wide groundwater monitoring well and stream gage networks, collect aerial electromagnetic data for southwest Michigan, and complete a regional-scale groundwater flow model which will cover the area extending from Jackson to Berrien to Mecosta counties.

EGLE has become a new data provider to the USGS' National Ground Water Monitoring Network (NGWMN). This is a two-year grant where EGLE will identify unimpacted monitoring wells that will be added to the NGWMN, create links between EGLE's groundwater database(s) and the NGWMN, and collect groundwater elevation data. When the EQuIS groundwater information database is developed, it will be linked to the NGWMN.

- **Geologic and Groundwater Research**: The annual $3 million appropriation, initiated in 2022, has enabled the MGS to establish a greatly needed statewide geologic mapping program. This funding supports 25 staff members, both employees and contractors, and leverages a 50 percent federal match from the USGS. With these resources, MGS has already made significant strides to advance research and mapping that directly improve understanding of how Michigan's geologic framework controls the location, quantity, and quality of groundwater.

  However, in fiscal year 2026, MGS experienced a significant 10% reduction to its $3 million annual operating budget. Of the $3 million previously appropriated as ongoing base funding, only $400,000 remains as continuing support, with $2.3 million provided as one-time funding. This change represents a substantial setback to the Survey's operational stability and its capacity to sustain essential long-term research and mapping programs that underpin Michigan's groundwater management and conservation efforts.

  The base operating funds are critical to maintaining core functions of the Survey—including facilities, information technology, and vehicle maintenance—and to providing the necessary dollar-for-dollar matching funds required to secure USGS federal grants for geologic mapping. These federally matched projects directly support Michigan's ability to identify, quantify, and safeguard groundwater resources across the state modernizing maps. The loss of stable, ongoing funding will severely impact MGS's productivity on groundwater-related projects that advance the goals and objectives of the WUAC, particularly those aimed at understanding groundwater quantity and quality, source water protection, and sustainable water use.

  Additionally, the reduction in operational funding limits the Survey's ability to retain technical staff, maintain research continuity, and support grant development to leverage additional external resources. MGS has built a highly skilled and dedicated team of geoscientists whose work directly informs local governments, industries, and state regulators. Sustained investment is vital to ensure that Michigan continues to generate the geologic and hydrologic data

needed to inform sound water management decisions and protect the state's invaluable groundwater resources.

Additionally, the appropriation supports workforce development through an applied MGS internship program. In 2025, five students participated in hands-on research evaluating deep rock formations as potential confining layers to prevent the migration of stored gases such as carbon dioxide and hydrogen. This experience-driven program provided students with practical skills in applied geology while contributing to research that directly informs groundwater protection by identifying the suitability of deep formations for secure underground storage. The reduction in funding ceases MGS's ability to continue this program.

In 2025, geologic mapping conducted by MGS provides the foundation for understanding Michigan's groundwater resources. Subsurface geology dictates where aquifers exist, how groundwater flows, how much is available for use, and what vulnerabilities may affect its quality. By expanding high-resolution, three-dimensional mapping, MGS is replacing century-old maps with modern tools and data. These maps incorporate drilling results and subsurface testing to reveal groundwater-bearing formations that were previously unknown, including newly identified aquifers that expand the state's water supply options.

In coordination with EGLE and the DNR, MGS has prioritized counties where groundwater concerns are pressing. In 2025, mapping focused on completing and publishing a new surficial geologic map of Muskegon County. Additional drilling and data collection occurred in Allegan and Kent counties. In Allegan County, new monitoring wells were installed to improve groundwater monitoring. In Kent County, drilling aimed to better characterize the geology and aquifers at depth. MGS continues to work closely with Allegan County on groundwater management activities. Monitoring wells equipped with dedicated water-level instruments will be added to the NGWMN, providing continuous data to understand water availability and long-term trends. MGS also serves on the Ottawa County Groundwater Board, offering scientific expertise as the County works to manage and protect its groundwater supply.

In partnership with the DNR, MGS is conducting a $5 million, five-year project to map sand and gravel deposits throughout Michigan. These materials form highly permeable zones that are essential for groundwater storage and recharge but also more vulnerable to contamination. By identifying and mapping these deposits, MGS is providing the information necessary to manage aggregate resources while protecting aquifers. In 2025, high-resolution maps were completed for Muskegon, Calhoun, and Van Buren counties, accompanied by technical reports that describe groundwater gradients, aquifer depths, water well locations, and the sources of groundwater—whether from glacial deposits or bedrock.

Statewide engagement continues to identify areas where groundwater challenges are tied directly to geology. In Kent and Montcalm counties, MGS is gathering data to support future mapping and drilling. In Monroe County, where hydrogen sulfide has affected the water supply, MGS is focusing on the area's complex karst geology. Research on the underlying rock formations is underway to determine the processes that generate hydrogen sulfide and to explore management or mitigation strategies. Each of these efforts highlights how geologic conditions directly affect the quality and reliability of Michigan's groundwater.

Public outreach and education are also key to connecting citizens to the role of geology in groundwater. Through presentations, local partnerships, and a YouTube channel that has reached nearly 50,000 users, MGS has expanded its ability to explain the relationship between geology and water to both technical and general audiences.

MGS also provides critical support to the state's response to per- and polyfluoroalkyl (PFAS) contamination. Contracted by the Michigan PFAS Action Response Team, the Survey has delivered geologic and aquifer mapping packages for more than 32 PFAS sites and compiled well data for over 40 additional sites. By June 2025, MGS had corrected or entered more than 1.3 million well records into the Wellogic system, covering all 83 counties. After completing quality assurance and quality control efforts for correcting well locations, this effort will be completed by the end of 2025, ensuring a more accurate statewide groundwater database to guide environmental and public health decisions.

V. Develop education programs and information sharing for all water users

Michigan has several new and ongoing outreach and education programs that provide information about water conservation and efficiency and promote water stewardship principles and practices. Efforts are also ongoing to promote water stewardship through effective statewide communication strategies to improve the public's understanding of their impact on water resources and actions and behaviors that support responsible water use.

Presentations, Conferences, Webinars, and Trainings

EGLE and the MDARD staff make educational presentations at meetings and various conferences as well as share information upon request, to a variety of interested parties. The WUAC and its subcommittee meetings are open to the public and provide educational opportunities and information sharing for water users and water managers about Michigan's ongoing program implementation. Meeting notes and informational materials from the WUAC proceedings are posted on a EGLE webpage.

EGLE continues to increase public awareness of water use information and access to data by publishing additional water use data online, holding public information meetings, and utilizing various media outlets. In addition, EGLE provides webinars,

conferences, training, and information for businesses and industry to support enhanced water conservation and efficiency.

Outreach for Agricultural Irrigators
In 2024, two MSU Extension Educators joined the Irrigation Team to improve irrigation efficiency and crop water management in Michigan. They created a survey that was launched in November 2024 to gather information on current water use practices, priorities, knowledge gaps, and preferred methods of receiving information. They also administered a livestock water use needs assessment. Results from both assessments will be published in early 2026.

Outreach expanded through major events like West Central Irrigation Day and the Summer Irrigation Workshop. Event participants had an impact on 13,000 acres and saving an estimated $60,000 from the knowledge gained at these events. From September 2024 to September 2025, 42 presentations on a variety of topics regarding irrigation scheduling, system application uniformity, chemigation, and research updates reached over 2,000 participants.

Digital engagement grew through 15 published articles (6,000+ views), two irrigation factsheets (reaching 28,000+), and recent bulletins. A new monthly e-newsletter, launched in July 2025, now reaches 1,500+ subscribers with updates on research, tools, and events. All of these new resources have been added to the recently updated website: https://www.canr.msu.edu/irrigation/index.

Irrigation system uniformity testing was conducted on six center pivots and three drip systems, revealing that all pivot systems needed repairs or upgrades. A second round of testing in the fall of 2025 will evaluate performance improvements. Uniformity workshops also covered regulations, chemigation practices, and MAEAP criteria.

The team supported the rollout of the MSU Irrigation Scheduler app, now used by nearly 300 growers managing over 49,000 acres. Weekly crop water use estimates were shared May–September via newsletters and the MSU Irrigation website. Research projects focused on precision irrigation, soil moisture monitoring, and rain gauge comparisons, helping farmers make data-driven decisions. Trust-building remained a key priority, with participation in dealer-hosted meetings and numerous on-farm visits strengthening relationships with irrigators.

Fix a Leak Week
EGLE's Office of the Clean Water Public Advocate promotes the EPA's Fix a Leak Week each March. Fixing leaks can save money, energy, and reduce health risks for individuals and communities. During this week, EGLE encourages Michiganders to find and fix household leaks, shares educational and how-to materials, and promotes water conservation resources available to Michigan residents.

Source Water Protection
EGLE has strategic investments in the Source Water Assessment Program to update the original assessments completed between 2000 and 2004. As part of this effort, EGLE hired four new staff members dedicated to conducting updated assessments for all community water systems that rely on groundwater. Participation in the program includes management strategies to reduce contamination risk, contingency and new source planning, and public education and outreach.

Michigan Water School
MSU Institute of Water Research, MSU Extension, and Michigan Sea Grant continue to offer the Michigan Water School now available in an online module series. This program focuses on educating local appointed and elected officials and staff about critical, relevant information needed to understand Michigan's water resources to support sound water management decisions. The program includes modules on water quantity, water quality, water finance and planning, and water policy issues. Topics covered include the Blue Economy, fiscal benefits of water management, incorporating water into local planning and placemaking, resources to help address water problems, and water policy at the federal, tribal, state, and local levels.

From Students to Stewards Initiative
In 2020, EGLE launched an initiative to integrate water literacy principles in K-12 school curriculum, in partnership with the Michigan Departments of Labor and Economic Opportunity, Education, and Natural Resources, along with numerous community partners. This effort, called the From Students to Stewards Initiative, is intended to develop a life-long culture of stewardship by integrating Great Lakes and freshwater literacy principles into standards-based school curricula through place-based, authentic-experience approaches to improve stewardship behavior and provide an engaging context to motivate school performance. This initiative teaches science, technology, engineering, and mathematics concepts using place-based, problem-based, and project-based approaches with a focus on Great Lakes literacy principles to foster the next generation of water stewards, leaders, skilled workers, and decision makers needed to solve complex water issues in a changing world.

EGLE received additional funding from the EPA GLRI to implement Phase 3 of the From Students to Stewards Initiative in 2024 and 2025. This project will build on the success of previous work funded by the GLRI and state programs. The project will extend learning beyond the classroom by providing a funding opportunity for student-led, community-based water stewardship projects that address local issues; by developing and sharing a comprehensive freshwater education program database that connects teachers, classrooms, and partners to educational programming, community resources, and water-focused career pathways; and by providing funding to cover field trip travel expenses for hands-on Great Lakes learning experiences on and around bodies of water in Michigan.

Great Lakes and Fresh Water Week
EGLE and its partners hosted the annual Great Lakes and Fresh Water Week (GLFWW) May 31 through June 8, 2025, to celebrate Michigan's water resources,

encourage Michigan residents to experience water resources, become educated about water resources, and take action to become water stewards. In 2024, GLFWW focused on connections between water and wellness for people and nature throughout the state. In 2025, GLFWW built on this idea of connections to explore the ways humans are deeply interconnected to Great Lakes and other fresh waters. EGLE hosted a webinar highlighting and celebrating the strong connection between the Great Lakes and those who live in their watershed, as well as sharing available resources and opportunities to become a Great Lakes steward and learn more about the Great Lakes. In addition, many Michigan organizations, regional and local units of government, and other community partners hosted events to encourage water stewardship.

World Lake Day
In a late summer complement to GLFWW, Michigan also celebrated the inaugural international World Lake Day to raise awareness of the Great Lakes and their importance and highlight opportunities for Michiganders to help protect and steward these waters on August 27, 2025. On World Lake Day, EGLE participated in the "Lakes for Life: Global Voices, Local Action" webinar, sharing powerful lake stories, youth-led action, and science-based solutions across continents and highlighting the importance of lakes in sustaining life, biodiversity, and livelihoods.

EGLE Classroom
Educators, youth, and families can learn about EGLE's work to protect Michigan's air, land, water, and public health and how they can participate through EGLE Classroom. Operated by EGLE's Environmental Education program, EGLE Classroom provides Michigan-based environmental curriculum, free hands-on resources to classrooms, professional development opportunities for educators, and video lessons on Michigan's environment and environmental careers. EGLE Classroom also administers the Michigan Green Schools certification program, holds an annual Earth Day poster contest, recognizes outstanding youth-led stewardship projects through the Environmental Service Award, and hosts an annual Michigan Student Sustainability Summit. To view EGLE's environmental education opportunities or to borrow a hands-on, Great Lakes-focused activity from the Environmental Education Lending Station visit Michigan.gov/EGLEclassroom and follow #EGLEClassroom on social media.

Direct Assistance for Sustainability
EGLE's Sustainability Section provides a variety of direct assistance services to help businesses and communities meet their sustainability goals. Benefits include efficiency increases and associative cost savings, elimination/minimization of waste streams, conservation of energy and water resources, and mitigation of risks.

EGLE also holds a Sustainability Webinar series promoting sustainability practices targeted toward businesses and industries in the water sector. EGLE has reinstated its Retired Engineers Technical Assistance Program (RETAP which provides assistance to institutions, industries, government agencies and businesses with 500

or fewer full-time employees with on-site energy and sustainability assessments, that include water conservation and efficiency measures.

Forest to Mi Faucet
The DNR leads an initiative called “Forest to Mi Faucet” to showcase connections between forests and drinking water. The DNR Forest Stewardship Program is encouraging twenty conservation groups to help municipal water utilities implement their source water protection plans and educate woodland owners about relationships between forests and drinking water. Forest to Mi Faucet will plant 80,000 trees to maintain or enhance water quality benefits in urban and rural areas.

The project builds on the national Forests to Faucets spatial analysis of priority watersheds for protecting surface drinking water. The analysis, detailed in an interactive story map, identifies watersheds with potential for forest protection and management to protect surface drinking water.

Forest to Mi Faucet has six components:

1. Help 15+ municipal water utilities implement their source water protection plans.
2. Protect high conservation value forests through conservation easements, nature preserves, etc.
3. Manage all forests better with forest certification and Master Loggers using best management practices.
4. Expand strategic forests by planting trees in urban and rural riparian zones to reduce pollution runoff. Partners have planted 92,500 trees in the first three years.
5. Ecological restoration of forests for water quality with prescribed fire and reducing invasive species.
6. Educate landowners and the public about connections between forests and their drinking water. Partners have educated 60,000 people about Forest to Mi Faucet.

A long-term goal of Forest to Mi Faucet is to build the foundation for a payment for ecosystem services market where forest owners are compensated for practices that provide clean water. Michigan Forest Association is leading a new $8 million “Forest & Water Fund” to continue the investments of Forest to Mi Faucet in 15 priority watersheds around Michigan.

Forest to Mi Faucet and the new Forest & Water Fund are both funded by the United States Department of Agriculture, Forest Service. More information is at Michigan.gov/ForestToMiFaucet.

WATER CONSERVATION AND EFFICIENCY PROGRAM IMPLEMENTATION TIMELINE AND STATUS

All components of Michigan's water conservation and efficiency program have been implemented. The foundation of the program, the water withdrawal assessment process, has been in effect since 2009. Sector-based water conservation measures are required to be reviewed annually by all large water users. Additional state funding resources have recently been allocated to bolster program areas of need. From the beginning, it has been recognized that the program would continually adapt based on new science, data, research, advancements in modeling, and technological innovation to improve and enhance sustainable water use. Michigan has shown a strong commitment to this forward-looking approach, continuing to improve its program, and remains dedicated to the betterment of the program and to upholding the ideals of the Compact.

Michigan is advancing new policies and programs to address climate, energy, and water that will further impact both state and Compact goals. This focus on climate, energy, and water presents new opportunities to identify specific innovative opportunities to improve Michigan's water conservation and efficiency program by building connections between current and new policies and programs and technological innovations. EGLE and the WUAC WCEC are working collaboratively to identify strategies to integrate water stewardship into climate, energy, and water infrastructure policies and programs, including innovative technologies. These efforts will support the WUAC charge to identify priority recommendations for improvements to Michigan's Water Use Program and Water Conservation and Efficiency Program. In addition, state policies and offices focused on environmental justice and clean water advocacy are improving state program administration and outreach and engagement efforts to address goals of equity, diversity, and inclusion.

Appendix 1 provides a full list of the water conservation and efficiency goals and objectives of Michigan's water conservation and efficiency program.

APPENDIX 1: MICHIGAN WATER CONSERVATION AND EFFICIENCY PROGRAM

Water Conservation and Efficiency Goals and Objectives

Goals

1. Ensuring improvement of the waters and water dependent natural resources;
2. Protecting and restoring the hydrologic and ecosystem integrity of the Basin;
3. Retaining the quantity of surface water and groundwater in the Basin;
4. Ensuring sustainable use of waters of the Basin; and
5. Promoting the efficiency of use and reducing losses and waste of water.

Objectives

1. Utilize Michigan's Water Use Program and Water Withdrawal Assessment Process to guide long-term sustainable water use.
    a. The programs will be adaptive, goal-based, accountable, and measurable.
    b. Continue to develop and implement programs openly and collaboratively, with local stakeholders, Tribes and First Nations, governments, and the public.
    c. Prepare and maintain long-term water demand forecasts.
    d. Develop long-term strategies that incorporate water conservation and efficient water use practices.
    e. Review and build upon existing planning efforts by considering practices and experiences from other jurisdictions.
2. Adopt and implement supply and demand management to promote efficient use and conservation of water resources.
    a. Maximize water use efficiency and minimize waste of water.
    b. Promote appropriate innovative technology for water reuse.
    c. Conserve and manage existing water supplies to prevent or delay the demand for and development of additional supplies.
    d. Provide incentives to encourage efficient water use and conservation.
    e. Consider water conservation and efficiency in the review of proposed new or increased uses.
    f. Promote investment in and maintenance of efficient water infrastructure.
3. Improve monitoring and standardize data reporting among State and Provincial water conservation and efficiency programs.

a. Improve the measurement and evaluation of water conservation and water use efficiency.

b. Encourage measures to monitor, account for, and minimize water loss.

c. Track and report program progress and effectiveness.

4. Develop science, technology, and research.

a. Encourage the identification and sharing of innovative management practices and state of the art technologies.

b. Encourage research, development, and implementation of water use and efficiency and water conservation technologies.

c. Seek a greater understanding of traditional knowledge and practices of Basin First Nations and Tribes.

d. Strengthen scientific understanding of the linkages between water conservation practices and ecological responses.

5. Develop education programs and information sharing for all water users.

a. Ensure equitable public access to water conservation and efficiency tools and information.

b. Inform, educate, and increase awareness regarding water use, conservation, efficiency and the importance of water.

c. Promote the cost-saving aspect of water conservation and efficiency for both short and long-term economic sustainability.

d. Share conservation and efficiency experiences, including successes and lessons learned across the Basin.

e. Enhance and contribute to regional information sharing.

f. Encourage and increase training opportunities in collaboration with professional or other organizations to increase water conservation and efficiency practices and technological applications.

g. Ensure that conservation programs are transparent and that information is readily available.

h. Aid in the development and dissemination of sector-based best management practices and results achieved.

i. Seek opportunities for the sharing of traditional knowledge and practices of Basin First Nations and Tribes.

APPENDIX 2: LINKS TO MICHIGAN WATER CONSERVATION AND EFFICIENCY DOCUMENTS

Michigan Water Strategy

2020 Water Use Advisory Council Biennial Report to the Michigan Legislature

2022 Water Use Advisory Council Biennial Report to the Michigan Legislature

2024 Water Use Advisory Council Biennial Report to the Michigan Legislature