June 2025 meeting of the WLEB Advisory Group (Adrian, MI). *Photo: Fatimah Bolhassan.*

DIRECTORY FOR WESTERN LAKE ERIE BASIN NUTRIENT MANAGEMENT PROJECTS

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Excess phosphorus pollution in the Western Lake Erie Basin (WLEB) continues to drive harmful algal blooms (HABs), which pose significant risks to the ecosystem, regional economy, and drinking water supply.

Numerous nutrient reduction projects are already underway across the watershed. There is strong potential to amplify their impact and engage the public through better information sharing and collaboration. To support this, a team of University of Michigan graduate students has developed a comprehensive, easily searchable online directory of projects. This digital tool makes project information more accessible and strengthens connections among stakeholders, enabling more coordinated and effective nutrient management in the WLEB. The directory is open to the public and designed for ease of use. The following pages provide step-by-step guidance for navigating the directory and making the most of its features.

Learn more about the problem of nutrient pollution in Lake Erie. Read the previous report and visit the Water Center's WLEB website.

HOW TO USE THE WESTERN LAKE ERIE BASIN INTERACTIVE MAP

The WLEB Nutrient Reduction Project Directory is designed to provide value to a variety of users, including educators, government workers, nonprofits, and researchers.

COMMUNITY EDUCATION

Students, teachers, local businesses, and communities can use the dashboard to learn about projects that protect water quality in the WLEB. High school and college students can explore the dashboard for science fair projects or research papers on nutrient pollution. Teachers can use it to show real examples of how people work together to keep water clean. Businesses that depend on clean water—like boating, fishing, and tourism companies—can use the dashboard to understand existing efforts to protect water quality. Local organizations can check the map to find project coordinator contact information for projects accepting collaborators. News reporters can share project updates with the public.

Water quality monitoring equipment in an agricultural ditch in Lenawee County. *Photo: Fatimah Bolhassan*

LOCAL AND REGIONAL GOVERNMENT

People working in local government can use the dashboard to make smarter choices for their communities. City planners can look at project maps to guide new development while protecting water quality. County drain commissioners can use the dashboard to see where phosphorus-reduction projects already exist and where more are needed. Parks departments can find places to restore wetlands and add educational signs for visitors. These features help government agencies coordinate efforts and prevent duplication.

AGRICULTURE AND NONPROFITS

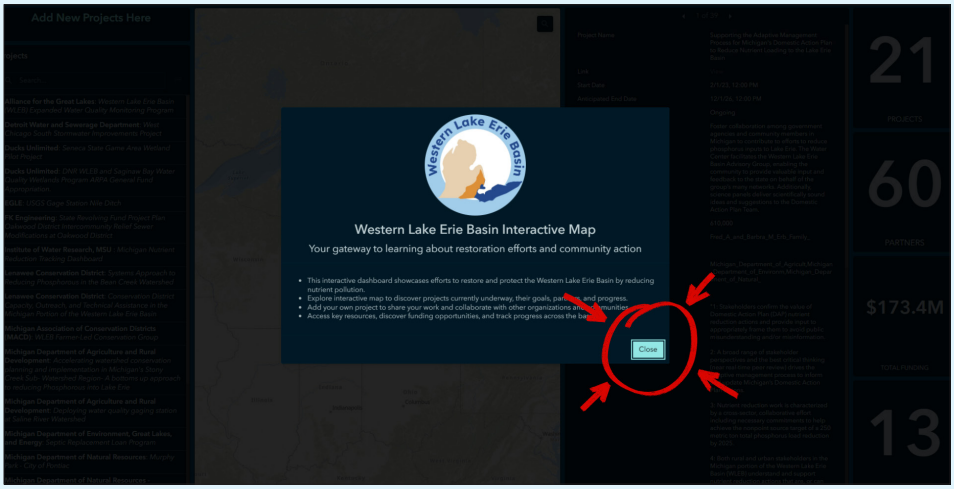
Local conservation districts can use the dashboard to find areas that need new soil and water programs. Nonprofit organizations can compare existing projects with their own goals and plan joint events or grant proposals. The dashboard promotes collaboration, helping professionals across agriculture and conservation work together more effectively.

RESEARCH AND POLICY

Researchers and decision-makers can use the dashboard to better understand progress toward protecting Lake Erie. Grant funding agencies can track project success and decide where to invest next. Policy advisors and state agency staff can monitor how well Michigan is meeting its phosphorus-reduction goals and identify areas that still need support. These insights make it easier to plan future projects and make choices that improve water quality for everyone.

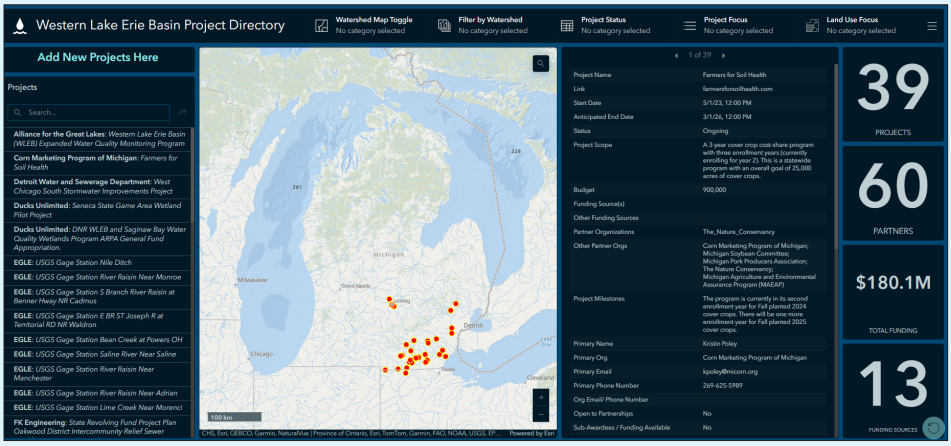
WLEB Expanded Water Quality Monitoring Program field station at the Seneca State Game Area. *Photo: Fatimah Bolhassan*

HOW TO USE THE WESTERN LAKE ERIE BASIN INTERACTIVE MAP



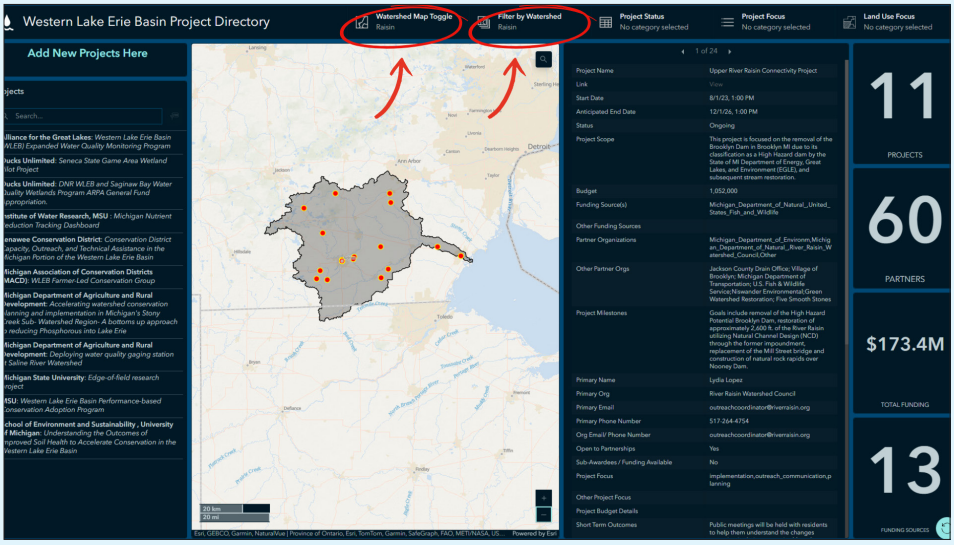
Step 1: Open the map.

Go to https://umich.maps.arcgis.com/apps/dashboards/bf33a43955f84e4da98fca0911f25725. Read the introductory pop-up, then click **Close**.



Step 2: Get oriented.

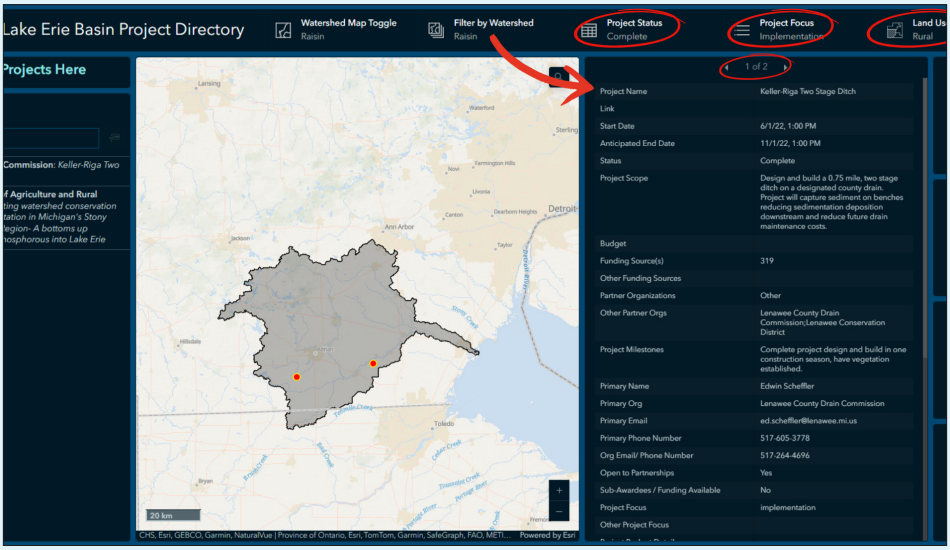
Take a moment to view the full dashboard. This main screen shows the entire map and all available tools. Becoming familiar with the layout will make it easier to filter and explore projects.



Step 3: Explore by watershed.

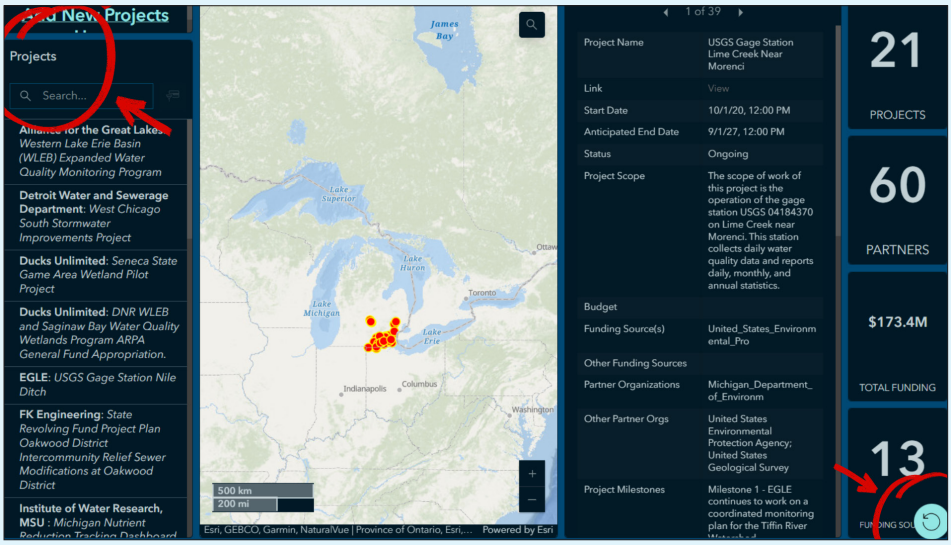
To focus on a specific watershed, use the **Watershed Map Toggle** on the left side of the top menu to turn on watershed outlines by checking the box next to your watershed. Then use **Filter by Watershed** to display only the projects within that watershed. The map will now show a clear view of your watershed and its associated projects. This example shows the River Raisin watershed.

HOW TO USE THE WESTERN LAKE ERIE BASIN INTERACTIVE MAP



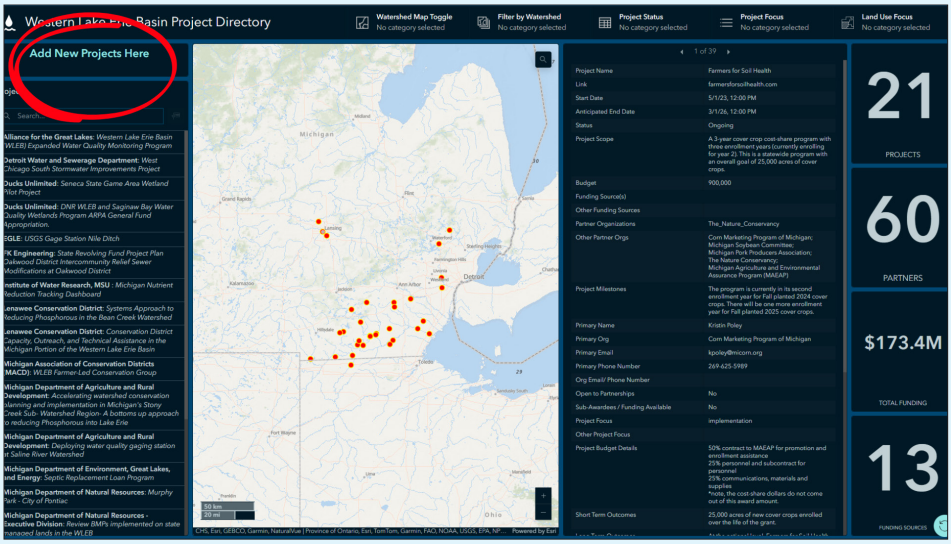
Step 4: Filter by project attributes.

Refine the map using the drop-down menus for **Project Status, Project Focus,** and **Land Use Focus**. For example, selecting *Project Status =Complete, Project Focus = Implementation,* and *Land Use Focus = Rural* returns two projects in the River Raisin watershed. Use the panel on the right to view detailed information for each project, including goals, outcomes, partners, contacts, budgets, and funders.



Step 5. Search by keyword.

To find specific projects across the region, first click **Reset** to clear any filters. Then type a keyword into the **Projects Search** box. This can be part of an organization's name, a word from a project title, or any term of interest. For example, entering "conservation" returns eight projects spanning dozens of locations across the region.



Step 6. Add a new project.

To submit a new project, click **Add New Projects Here** in the top-left corner. This opens a Survey123 form where you can enter your project information. After you submit the form, your project will automatically appear on the map.

WLEB ADVISORY GROUP AND NUTRIENT REDUCTION PROJECT DIRECTORY

WHY CREATE A DIRECTORY?

The WLEB Advisory Group brings together diverse perspectives from agriculture, local government, and nonprofits to support phosphorus reduction in Lake Erie. This group originally identified the need for a project directory, citing inadequate communication among the parties involved in this work and highlighting the opportunity for clearer communication about current projects, funding, and avenues for collaboration. The Advisory Group suggested that the Water Center create a publicly available compilation of information about nutrient reduction projects in the WLEB. Based on interviews with Advisory Group members, the Dow Fellows determined that an online dashboard—with a map overview and detailed tables—would best present this information.

VALUE AND VISION

The WLEB Nutrient Reduction Project Directory provides users with an improved and up to date understanding of nutrient reduction activities taking place in Michigan's portion of the WLEB. Users can access project contacts and gain insights into funding strategies by exploring the sources behind active projects.

This work is continually evolving in partnership with the WLEB Community Advisory Group, the University of Michigan Water Center, and state government. The dashboard tool is designed for long term use, and will be managed in collaboration with the Water Center. As more projects are added, the dashboard's value will grow, fostering a larger collaborative network and strengthening nutrient reduction efforts.

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ACKNOWLEDGEMENTS

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MORE INFORMATION

- WLEB Nutrient Reduction Directory: https://graham.umich.edu/wleb/nutrient-reduction-database
- Western Lake Erie Basin Advisory Group: https://graham.umich.edu/wleb

The Dow Sustainability Fellows program trains future sustainability leaders through hands-on, interdisciplinary projects with external partners, engaging master's and professional students from across U-M. Funded by the Dow Company Foundation, this program has promoted sustainable, collaborative problem-solving since 2013. See: https://graham.umich.edu/dow

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