May 16, 2025

Lake Michigan
Lakewide Action and Management Plan Program
2024 Annual Report

Indiana Department of Environmental Management

Cover Photo

Photo of Lake Michigan from Marquette Park Beach in Gary, Indiana. Image courtesy of Nicole Messacar.

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Executive Summary

During 2024, the Indiana Department of Environmental Management (IDEM) continued to work with federal, state, and local partners to develop and implement the Lake Michigan Lakewide Action and Management Plan (LAMP). In many cases, this consisted of planning and development for a variety of initiatives – including the next Lake Michigan LAMP, Lake Michigan CSMI field year, State of the Great Lakes (SOGL) Report, and the 2025 National Coastal Condition Assessment (NCCA). Additionally, IDEM staff continued to develop and strengthen LAMP-related outreach and engagement efforts. As this report provides an overview of core LAMP-related activities in which IDEM participated, it should be noted that additional monitoring, restoration, outreach, education, and community engagement efforts conducted by partners may not be reflected. The report closes with a look ahead at activities planned for 2025.

Overview of the Lake Michigan LAMP Program

The purpose of the United States – Canada Great Lakes Water Agreement (GLWQA) is to restore and maintain the chemical, physical, and biological integrity of the Waters of the Great Lakes. The GLWQA utilizes a broad ecosystem-based approach to frame this purpose. It includes 10 annexes, each designed to focus on a specific issue impacting Great Lakes water quality or ecosystem health. One of these annexes, the Lakewide Management Annex (Annex 2), exists to "contribute to the achievement of the General and Specific Objectives of this Agreement [GLWQA] by assessing the status of each Great Lake, and by addressing environmental stressors that adversely affect the Waters of the Great Lakes which are best addressed on a lakewide scale through an ecosystem approach."

Through the Annex 2 framework, which is co-chaired by the U.S. EPA and Environment and Climate Change Canada (ECCC), the two nations have agreed to a series of commitments to aide in the restoration and maintenance of the Great Lakes. One of these commitments is the development and implementation of LAMPs, five-year public strategic plans that summarize the state of each Great Lake with respect to nine general objectives listed in the GLWQA and set forth planned actions and priorities designed to protect, restore, and assess the lake. Like the GLWQA as a whole, each LAMP casts these priorities within a watershed-wide ecosystem framework.

The Lake Michigan basin in Indiana includes approximately 2,290 square miles in 10 counties, plus the 241 square miles of the lake itself (**Attachment A**). As members of the Lake Michigan Partnership[1], IDEM and Indiana Department of Natural Resources (IDNR) assist the U.S. EPA in developing and implementing the Lake Michigan LAMP; identifying priorities for each five-year Cooperative Science and Monitoring Initiative (CSMI) cycle; and conducting associated reporting, outreach, and engagement activities. IDEM and IDNR receive funding through the Great Lakes Restoration Initiative (GLRI) to support participation in these activities.

[1] There are currently 22 members of the Lake Michigan Partnership. These include representatives from federal, state, local, and tribal agencies or organizations with some degree of lake management responsibility. A representative of the International Joint Commission (IJC) also attends Partnership meetings as an observer.

2024 LAMP Accomplishments

IDEM worked closely with federal, state, and local partners to advance the LAMP program. This largely consisted of planning and development for a variety of initiatives which are anticipated to be conducted in 2025. IDEM contributed to the development of the next five-year Lake Michigan LAMP, the 2023 Lake Michigan LAMP Annual Report, and the priorities for the 2025 Lake Michigan CSMI field year. The agency also participated in multi-agency workgroups developing the 2025 SOGL Report and the 2025 NCCA and provided input to U.S. EPA during the development of the 2025-2029 GLRI Action Plan IV. Additionally, IDEM staff continued to develop and strengthen LAMP-related outreach and engagement efforts.

Lake Michigan LAMP Development

In late 2024, the Lake Michigan Partnership decided to adapt the draft 2020-2024 Lake Michigan LAMP document to serve as the foundation for a new 2025-2029 LAMP. Partnership members reviewed the 2020-2024 document and identified adjustments to reflect the 2025-2029 time period. The next iteration of the LAMP is expected to be available for public review and comment in 2025.

LAMP Annual Report Development

During 2024, IDEM provided two articles for the 2023 LAMP Annual Report discussing recent LAMP-related outreach and restoration efforts undertaken in conjunction with the Indiana Dunes State Park, and enhanced Spanish language outreach which was conducted as part of the RAP program. The report is expected to be released in 2025 and will include short articles from various Lake Michigan Partnership members on recent efforts to reduce chemical contamination; protect public health at beaches; prevent and control invasive species; protect and restore habitats and species; and conduct outreach and engagement activities. In addition, partnership members prepared an outline and began compiling articles for the 2024 LAMP Annual Report.

State of the Great Lakes Report Development

The triennial SOGL reports are developed by a task team formed by the federal governments of Canada and the U.S. through the GLWQA's Annex 10 framework, with individual indicator assessments compiled by governmental and academic subject matter experts. The reports utilize a suite of indicators to assess water quality and ecosystem health relative to the General Objectives of the Agreement.

In 2024, the task team compiled the draft indicator assessments that will constitute the 2025 SOGL report. During October and November 2024, the task team hosted a series of webinars to garner feedback on the draft assessments from task team members.

Interested parties can review the 2022 SOGL reports on the State of the Great Lakes website.

Cooperative Science and Monitoring Initiative Lake Michigan Field Year Planning

The CSMI is an intensive binational research effort to provide lake and fishery managers with science and monitoring information to assist with management decisions on each Great Lake. Each Great Lake is on its own rotating five-year CSMI cycle, which consists of priority setting, planning, field year, data analysis, and report out phases.

In August, the Lake Michigan Partnership finalized the set of priorities for the 2025 Lake Michigan field year. The list included 24 priorities distributed across five categories: fish recruitment bottlenecks and lower trophic level health, chemicals, watershed and tributary connections to water quality, characterization of very nearshore habitat, and social science. The U.S. EPA created a task team – comprised of staff from federal and state agencies and tribal organizations as well as several Canadian observers – to plan the 2025 field year projects. Projects will be implemented beginning in early 2025 through the GLRI and other funding sources.

National Coastal Condition Assessment Planning

The U.S. EPA's Office of Research and Development and other agencies worked to plan the 2025 NCCA, a statistical survey of the condition of the nation's marine and Great Lakes coasts that is conducted every five years. Although the NCCA aligns with the CSMI Lake Michigan field year cycle, this is a separate program. Two sites in the nearshore waters[2] of Indiana's portion of Lake Michigan will be sampled for approximately 30 indicators of biological integrity, trophic state, recreational suitability, and key stressors impacting water quality.

Efforts to Protect Public Health at Beaches

General Objective II of the GLWQA states that "The Waters of the Great Lakes should allow for swimming and other recreational use, unrestricted by environmental quality concerns…". In partnership with local governments, IDEM continued efforts through its Beach Monitoring and Notification Program to monitor bacteria levels, specifically *Escherichia coli* (*E. coli*), at 24 public bathing beaches along the Lake Michigan shoreline. Local beach managers conduct sampling during the beach season, which runs from approximately Memorial Day through Labor Day. **Table 1** (next page) depicts the number of samples collected, the number of samples exceeding 235 colony forming units (cfu) per 100 milliliters (mL) of water.

In addition to conducting monitoring, local beach managers notify the public when detected *E. coli* concentrations exceed Indiana's single sample water quality standard for full body contact recreation, such as swimming[3]. This standard sets the Beach Action Value (BAV) at which a health-based swim advisory or beach closure must be issued by participating beach managers.

[2] Nearshore waters are defined in the NCCA as those extending from the shoreline to a water depth of 30 meters (98.4 feet) or a horizontal distance of 5 kilometers (3.1 miles), whichever comes first. It also includes embayments.

[3] *E. coli* is a common family of bacteria that are frequently used as an indicator or proxy for fecal contamination and the associated human health risk from swimming and other full-body contact recreation. Indiana uses a health-based recreational water quality standard of 235 colony forming units or most probable number of *E. coli* per 100 milliliter water sample for swim advisory or beach closure decisions.

Name of Beach		Number of Beach Days	Number of Days under Action due to E. coli	Number of Advisories	Number of Closures	Days Open (*i.e.* Not under an Action)	Total Number of Samples Collected	Total Number of Samples that Exceeded	% Exceedance Rate	Number of Sampling Points	Weekly Monitoring Frequency
Hammond East		99	7	5	0	93%	99	7	7%	1	7
Hammond West		99	3	3	0	97%	99	3	3%	1	7
Whihala East		102	8	6	2	92%	102	10	10%	1	7
Whihala West		102	9	3	6	91%	102	9	9%	1	7
Jeorse Park I		98	48	20	0	51%	97	49	51%	1	7
Jeorse Park II		98	38	16	0	61%	97	30	31%	1	7
Buffington Harbor		98	24	13	0	76%	97	24	25%	1	7
Lake Street		105	4	4	0	96%	150	9	6%	2	5
Marquette Park		105	2	2	0	98%	300	3	1%	4	5
Wells Street		105	0	0	0	100%	75	0	0%	1	5
Ogden Dunes East		102	4	2	0	96%	72	3	4%	1	3
Ogden Dunes West		102	3	2	1	97%	143	4	3%	2	3
IDSP East		100	23	23	0	77%	100	23	23%	1	7
IDSP West		100	6	6	0	94%	100	6	6%	1	7
Broadway		99	1	1	0	99%	56	1	2%	1	4
Washington Park		113	19	11	2	83%	273	25	9%	3	7
Sheridan Stop 2		113	10	7	0	91%	276	3	1%	3	7
Sheridan Stop 7		113	3	4	0	97%	92	1	1%	1	7
Long Beach Stop 14		103	1	1	0	99%	39	1	3%	1	3
Long Beach Stop 20		103	2	2	0	98%	39	2	5%	1	3
Long Beach Stop 24		103	3	3	0	97%	39	3	8%	1	3
Shoreland Hills Stop 31		103	0	0	0	100%	39	0	0%	1	3
Duneland Stop 34		103	0	0	0	100%	39	0	0%	1	3
Michiana Shores Stop 37		103	0	0	0	100%	39	0	0%	1	3
Total Days Open		2471	218	134	11	91%	2564	216	8%		
Drexwood			Drexwood and Shore Avenue Beaches were not monitored in 2024.							1	7
Shore Avenue										1	7

Table 1. Summary of the 2024 beach season for public bathing beaches monitored as part of IDEM's Lake Michigan Beach Monitoring and Notification Program.

In June 2024, IDEM implemented improved public email and text message notifications of beach advisories or closures. By registering for, and receiving, alerts from IDEM's Beach*Alert* application, visitors to the beaches can make informed, risk-based decisions about swimming at the beach. These notifications serve as a valuable tool to protect public health at bathing beaches. IDEM plans to utilize a new statewide notification platform to provide notifications in 2025.

Education, Outreach, and Public Engagement Efforts

IDEM's Lake Michigan Programs staff participated in various outreach and engagement activities to strengthen and raise awareness of LAMP-related topics. Outreach and engagement highlights included:

- Developed and piloted a new sediments-focused Earth Day presentation at local schools in Gary, East Chicago, and Michigan City.
- Participated in various Earth Day and other community outreach events.
- Provided LAMP presentations to the Trail Creek Watershed Partnership and the Northwest Indiana Stormwater Advisory Group.
- Partnered with IDEM's Office of Water Quality and the Indiana One Water Partnership to add Great Lakes information to various statewide water quality education efforts.
- Met with the Indiana Conservation Partnership and several state agencies to build a framework to improve LAMP implementation in Indiana.
- Participated in the One Water Partnership, led by the Indiana Geological and Water Survey. The goal of the One Water effort is to develop a unified framework for water quality education in Indiana. Specifically, the group is working to complete a feasibility study for developing water quality education kits.

Figure 1. IDEM staff speak with Mayor Eddie Melton and Brown Faces Green Spaces Director Kimmie Gordon at the Planet Palooza event, held April 13, 2024, at Marquette Park in Gary, Ind.

Figure 2. IDEM staff use a dip net to collect samples for the macroinvertebrate station as part of Trail Creek Week at Hansen Park in Michigan City, Ind. in September 2024.

Figure 3. A portion of IDEM's Lake Michigan Programs display at the Northwest Indiana Earth Day Festival held at the Porter County Expo Center on April 20, 2024.

2025 LAMP Program Goals

In 2025, IDEM will continue to work collaboratively with federal, state, and local partners to advance LAMP program objectives. National and binational LAMP-related activities and events anticipated for 2025 or early 2026 include:

- Great Lakes Public Forum - The GLWQA requires the U.S. and Canada to convene a triennial Great Lakes Public Forum to discuss the state of the lakes, progress made under GLWQA during the previous three years, and proposed science and action priorities.

- Release of the Progress Report of the Parties - The GLWQA requires the U.S. and Canada to report on recent achievements in restoring and protecting Great Lakes water quality and ecosystem health every three years.

- Release of the State of the Great Lakes Indicators Report – The U.S. and Canada develop a triennial SOGL report describing basin-wide environmental trends and lake-specific conditions relative to the GLWQA's nine general objectives.

- Development of the Draft Triennial Binational Priorities for Science and Action - The GLWQA requires the U.S. and Canada to establish binational priorities for science and action to address current and future threats to Great Lakes water quality. The priorities are typically released for public comment in conjunction with each Great Lakes Public Forum.

- Release of the 2025-2029 Lake Michigan LAMP - The Lake Michigan Partnership continues to develop the Lake Michigan LAMP, which will identify action priorities from 2025-2029. The Partnership anticipates that the LAMP will be completed and released for public comment in 2025.

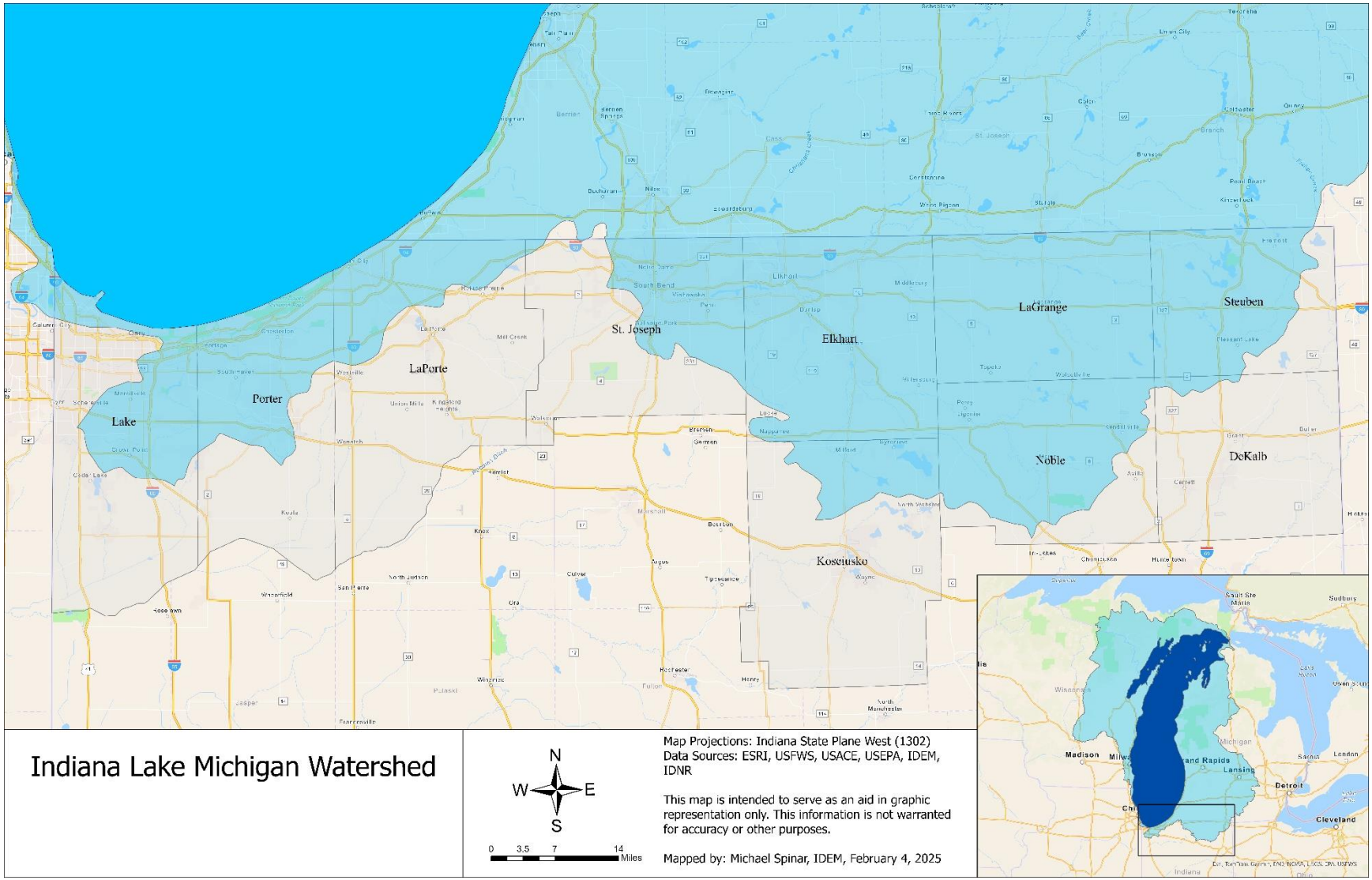
- 2025 CSMI Lake Michigan Field Year - The U.S. EPA and other partners will conduct intensive field research on Lake Michigan in 2025. The results of these projects will provide lake and fishery managers with science and monitoring information to assist with management decisions.

- Develop and Release of LAMP Annual Reports - U.S. EPA is expected to release the 2022 and 2023 Lake Michigan LAMP Annual Reports and the Lake Michigan Partnership will draft the 2024 report.

- 2025 National Coastal Condition Assessment - Although not a formal part of the GLWQA framework, the U.S. EPA conducts this statistical survey of the condition of the nation's marine and Great Lakes coasts every five years. Alignment with the 2025 Lake Michigan CSMI efforts may provide additional collaboration opportunities.

LAMP-related goals specific to IDEM are listed in **Attachment B**.

Attachment A: Map of the Indiana Lake Michigan Basin



Attachment B: 2025 IDEM Lake Michigan LAMP Detailed Program Goals

Goal	Implementation Lead	Partners
Continue to work with state agency partners to develop an improved Indiana LAMP implementation framework	IDEM	State agencies and potentially other partners
Expand the number of Clean Marinas and pledged Clean Boaters in the Lake Michigan basin	IDEM	IDNR Indiana Bureau of Motor Vehicles (BMV) Local marina owners & operators
Host networking and education events for marinas, such as the Clean Marina Roundtable, with the goal of improving and expanding best management practice implementation	IDEM	Local marina owners & operators
Develop an Indiana State of Lake Michigan Report	IDEM	State agencies and potentially other partners
Deploy two (2) Seabin in-water trash collection devices within the Lake Michigan basin	IDEM	Local educational organizations
Conduct LAMP-related outreach at a minimum of four (4) community events	IDEM	Various community partners
Seek to initiate watershed planning efforts for Northwest Indiana	Various partners	Local governmental, community, and environmental organizations
Explore the expansion of acoustic telemetry tracking for fisheries research in the Southern Lake Michigan basin	United States Fish and Wildlife Service	State and tribal fisheries agencies
Develop a feasibility study with the goal of developing a unified water quality education framework in Indiana	Indiana Geological and Water Survey	Indiana One Water Partnership