
Project Application

Dickinson County Water Quality Commission

Applicant Organization: Friends of Lakeside Lab, Inc
Street Address: 1838 Highway 86
City: Milford
Zip Code: 51351
Email: friendsoflakesidelab@gmail.com
Phone: (712) 337-3669
Organization Contact: Lyndy Holdt
Project Title: Clean Water Monitoring
Project Director: Street Mary Skopec
Address: 1838 Highway 86
City: Milford
State: IA
Zip Code: 51351
Email: mary-skopec@uiowa.edu
Phone: (712) 337-3669
Application Submission Date: 10/1/24

Brief Description (75 Words or less) of project, including expected results:

Lakeside Laboratory (ILL) will hire seven college students for our water monitoring and assessment team for 2025 focusing on the following water quality priorities: 1) assessment of 2024 flood effects on the Iowa Great Lakes. 2) continued monitoring of tributary inflows and outflows, 3) E. coli and Algal Toxin monitoring of Iowa Great Lakes beaches (this project was disrupted in 2024 due to flooding). 4) monitoring of Aquatic Invasive Species and Public Education to prevent the spread of AIS.

Amount Requested through this grant application*: \$ 28,000.00

Matching funds:

Hard Match (anything paid for with real money) \$ 79,000.00

Sources of Matching Dollar(s) Lakeside and Friends operating funds
(if it is your intent to seek matching grants using WQC funds, list those potential additional grants, the expected timing for funds to be available, and the dollars that will be requested)

Soft Match (anything NOT paid for with real money) \$ 1,500.00

Source(s): Lakeside operating funds

Other Support:

Amount of Federal, State, or other public cash match money already acquired or in process (list all and Status)

Amount of Private cash match funds: \$ 25,000.00

Sources of public and/or private cash match (list all):

Friends endowment

Is this project a portion of a larger, overall project to be implemented over a multi-year period?
(Check one)

Yes

No

If yes, describe in project narrative and include in budget form as instructed.

*The Water Quality Commission will only obligate funds for current fiscal year. Any multi-year projects will be allowed to re-apply in subsequent years.

Type of Project (select all that apply)

- Public education, public awareness and information dissemination
- Creation or maintenance of Best Management Practices
- Erection and maintenance of storm water run off facilities
- Bank Stabilization
- Water monitoring
- Watershed Protection
- Activities to abate and remove invasive species
- Any other activities which will improve, protect, or enhance the quality of water in the lakes of Dickinson County

Estimated Project Dates:

Start: 4/1/25

Completion: 11/1/25

Applicants Signature:

Joan M. Gronstal

Upon signing in the space provided below, the applicant agrees to conform to the requirements pertaining to:

- Civil Rights Assurance of Compliance: The applicant hereby agrees that it will comply with Title VI of the Rights Act of 1964, 1873 and the age Discrimination Act of 1975 to the end that no person in the United States shall on the grounds of race, color, national origin or otherwise subjected to discrimination under any program or activity for which the Applicant-Recipient receives grant funds and hereby gives assurance that it will immediately take any measures to effectuate this agreement.

This assurance is binding on the Applicant-Recipient, its successors, transferees, and assignees, and the person or person whose signature appears below are authorized to sign this assurance on behalf of the Applicant-Recipient.

Applicants Name and Title

Date

10/1/24

*Joan Gronstal
Friends of Lakeside
Lab
President*

REQUIRED BUDGET FORM

See Application Guidelines for this form

Proposed Budget for Current Grant Request Year (fill out with just the match for this year's WQC match if this is a multi-component, multi-year project, please fill out the second budget form with the entire budget and any anticipated grant dollars expected to be sought from WQC in future requests)

	Commission	Hard Match	Soft Match	Total
Staff	\$ 25,000.00	\$ 30,000.00		\$ 55,000.00
Supplies and Services	\$ 3,000.00		\$ 500.00	\$ 3,500.00
Equipment		\$ 3,000.00		\$ 3,000.00
Travel			\$ 1,000.00	\$ 1,000.00
Water Monitoring		\$ 25,000.00		\$ 25,000.00
Land Acquisition				\$ 0.00
Land Development				\$ 0.00
Other		\$ 21,000.00		\$ 21,000.00
Total	\$ 28,000.00	\$ 79,000.00	\$ 1,500.00	\$ 111,500.00 108,500

* Hard Match is "real money spent" toward project goal.

** Soft Match is money indirectly spent toward project goal. (This is important but not included in the dollar amount for points).

You must attach a letter of support for each contributor of Hard Match dollars and soft match dollars that specifies the amount of money or service being provided. If you are seeking other grants using WQC funds as a match, list those grants in the budget narrative and the timing those grant funds are to be available.

BUDGET NARRATIVE: Attach a Budget Narrative. Follow directions in Application Guidelines.

Friends of Lakeside Lab, Inc. are requesting \$25,000 in staff costs to cover the intern salaries for 7 interns during the summer of 2025. An additional \$3,000 is also requested for support services to manage the intern program. Iowa Lakeside Laboratory will contribute \$54,000 in cash match and an additional \$1500 in soft match. Hard match includes room and board for the interns, \$3000 in water monitoring equipment (sampling devices), travel costs for interns (gasoline and the use of the Lakeside truck), and printing of materials/reports. Hard cash match also includes a portion of time for the following employees: Dr. Mary Skopec (Director) and Matt Fairchild (Facilities Manager). Lakeside staff will supervise the development of a quality assurance project plan for the monitoring, the collection of water quality data and the assessment work. Soft match includes: \$1500 for office space, computer usage, internet usage, database maintenance. The Friends of Lakeside Lab will match \$25,000 in water monitoring for the Cooperative Lake Monitoring Program.



TASKS AND DELIVERABLES: Attach a list of Tasks and Deliverables following the Application Guidelines included in this packet.

The Friends of Lakeside Lab using the WQC grant funds and working through the Iowa Lakeside Laboratory (ILL) will recruit, interview, select, hire, train, and supervise seven college students knowledgeable in environmental science and public health to be part of our water monitoring and assessment team for 2025. Iowa Lakeside Laboratory will provide their housing and meals along with college credit for their activities. Priorities for 2025 are: 1) An assessment of 2024 flood effects on the Iowa Great Lakes. 2) Continued monitoring of tributary inflows and outflows, 3) E. coli and Algal Toxin monitoring of Iowa Great Lakes beaches (this project was disrupted in 2024 due to flooding. 4) Monitoring of Aquatic Invasive Species and Public Education to prevent the spread of AIS.

Earn to Learn students will work with Lakeside personnel to assess the effects of the 2024 on the Iowa Great Lakes including how bank collapses and influxes of sediment and nutrients have contributed to changes in water clarity, algae blooms and other issues. Interns will monitor major tributary inflows and outflows of the Iowa Great Lakes for nutrients and sediment inflows (including flow measurements where possible) to assess movement of the sediment and nutrients out of the lakes system. Lakeside Lab will also monitor and assess water quality at recreation beaches in the area with the goal of understanding why certain beaches have elevated E. coli and microcystin toxin levels that have resulted in advisories in recent years. The information will be shared with local resource managers to improve water quality at those beaches (this project was disrupted in 2024 due to flooding). Additionally, Lakeside reinstate the boat ramp education program to inform visitors of the need to remove visible vegetation, clean and dry boats/trailers/props. Lakeside will also monitor Miller's Bay weekly to determine the presence or absence of Eurasian Watermilfoil. Information on prevention will also be developed and shared with businesses or entities with significant vulnerabilities for transporting AIS.

Task	Deliverable
Lake Monitoring	Assessment of 2024 Flood Impacts and Report
Tributary Monitoring	Data collected from tributary inflow/outflow sites
Analyses of Tributary/Groundwater Data	Report of results
Public Information and Dissemination of Water Quality Results	Pamphlets, social media, Presentations on Results
Focused monitoring on recreational beaches	Evaluation on sources of E. coli and recommendations for improvement
Invasive species education at boat ramps	Information disseminated on invasive species removal from boat trailers, boat props and other techniques.

Focused Invasive Species monitoring in Millers Bay	Weekly monitoring of vegetation in Miller's Bay to determine presence/absence of EWM or other AIS
Dissemination of Intern Work to Community	Public Presentations to the Community (for example Blue Water Festival)
Compilation of Results and Information	Annual Report

PROJECT NARRATIVE Attach project narrative following the instructions in application guidelines, including:

STATEMENT OF PROJECT NEED:

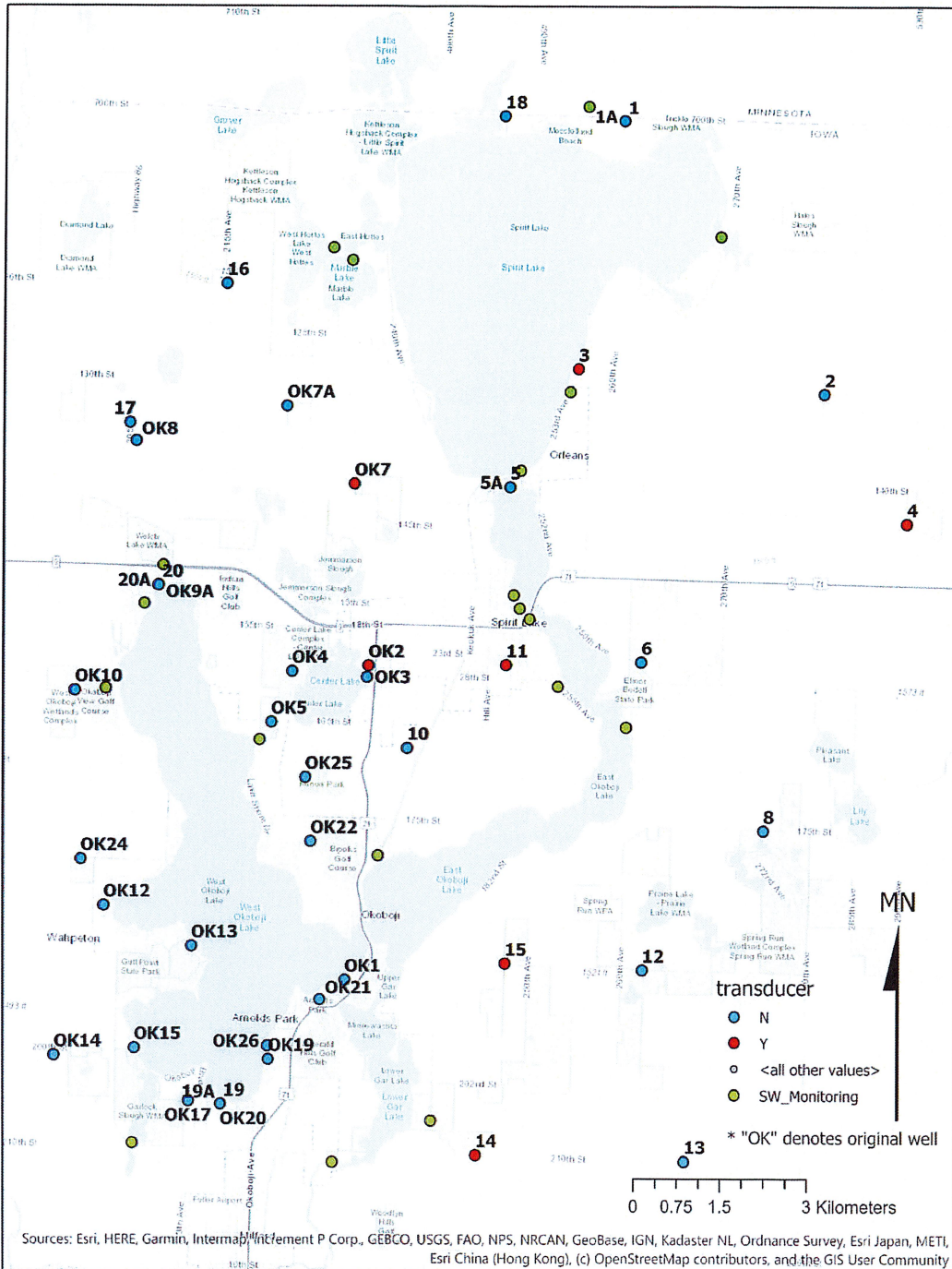
The Flood of 2024 wreaked havoc on the Iowa Great Lakes system. Testing during and immediately after the flood showed very high levels of nitrogen and phosphorus entering the lakes system. Bank collapses are continued to deliver sediment and nutrients as homeowners work to rebuild and fix the collapses. Questions about the long term ecological effects to the lakes remain. Lakeside will assess the long-term impacts of the flood event on the Iowa Great Lakes with intensive sampling of the lakes as well as inflow and outflow measurements in the tributaries. This proposal is focused on understanding these long-term ecological effects such as decreased water clarity, algae blooms or other changes. Lake samples will be taken weekly at selected sites and targeted sampling at bank collapse locations will determine sediment and pollutant loading. Grab samples (i.e., samples collected at a point in time) will be collected at approximately 12 tributary locations around the Iowa Great Lakes. Sites were selected in consultation with DNR staff and other scientists (proposed sites are shown in the figure below). Samples are collected on a stratified seasonal basis that includes monthly samples in Jan, Feb, Oct, Nov and Dec, bi-weekly samples in Mar, Apr, Jul, Aug and Sep, and weekly samples in May and Jun for a total of 23 grab samples per year at each site. Samples will be collected by the Iowa Lakeside Laboratory research staff and interns. Water samples will be hand delivered to the State Hygienic Laboratory located at Iowa Lakeside Laboratory for analysis of nitrate-nitrogen, total and dissolved phosphorus, turbidity, and total suspended solids. Grab samples will also be tested in the field for temperature, pH, specific conductance, and dissolved oxygen using a multi-meter. A quality assurance project plan was completed by the Lakeside staff to ensure data quality and credibility.

Grab sampling water quality concentration data and particulate P concentrations derived from turbidity will be combined with the continuous stream gaging data to quantify pollutant loads into the IGL system on an annual, seasonal, and daily basis. Aggregated data will be used to identify hot spots of pollutant loading, calculate pollutant mass balances within the lakes, and characterize lake processes that may be attenuating or perhaps exacerbating the effects of incoming pollutants. This project aligns with the water monitoring needs as outlined in the Iowa Great Lakes Management Plan (<https://cleanwateralliance.net/wp-content/uploads/2021/10/revision-to-final-man-plan-June-14-2018-Reduced.pdf>).

Additionally, we will conduct monitoring on recreation beaches in the Iowa Great Lakes. Emerson Bay, Crandall's Beach, and Marble Beach all fell under no-swimming advisories in 2022, 2023, 2024 due to E. coli bacteria and/or blue-green algae toxins. The focused monitoring will assess the sources of E. coli and microcystin toxin and develop strategies to mitigate the problem. Lakeside will work with Dickinson County public health to improve communication regarding swimming at public owned beaches.

Similarly, the discovery of Eurasian Watermilfoil (EWM) has re-established the need to have a robust invasive aquatic species (IAS) program in the Iowa Great Lakes. We will conduct the boat ramp education program and engage with visitors regarding the need to remove visible vegetation as well as clean and dry boats or trailers. Given the appearance of EWM in the canals of West Okoboji, we propose to do extensive monitoring of disturbed areas of the Miller's Bay lakebed to identify any encroachment of EWM in the Bay. Aggressively monitoring the Bay will be key to early detection and management. The interns will also develop a public education campaign to highlight the need to proactively prevent transport of Watermilfoil or other invasive species.

Lastly, the interns will work on public information geared at helping residents and visitors understand water quality in the Iowa Great Lakes and how to improve stewardship of our resources.



Location of Surface Water Sampling Sites (SW_Monitoring), Groundwater Wells (OK#)

QUALIFICATIONS OF GROUP OR AGENCY

The Friends of Lakeside Lab was founded in 1994 to support Iowa Lakeside Laboratory and Regents Resource Center through scholarships and as a community resource for water quality monitoring, environmental education, and research. The Friends is a tax-exempt, 501c3 non-profit organization. The Friends were instrumental in creating the

Cooperative Lake Area Monitoring Project (CLAMP), the longest running lake monitoring program in the State of Iowa.

Iowa Lakeside Laboratory Lakeside Lab is owned by the state of Iowa and operated through the Board of Regents. Lakeside provides science classes and research opportunities for university students along with outreach programs to support the Iowa Great Lakes Community. Dr. Mary Skopec has served as the Executive Director of Iowa Lakeside Laboratory since December of 2016. Prior to joining Lakeside, Mary was the water quality monitoring coordinator for the Iowa Department of Natural Resources.

Dr. Skopec earned her B.S. and M.A. degrees in geography from The University of Iowa, and in 1999, she completed her interdisciplinary Ph.D. in environmental science also at The University of Iowa.

STATEMENT OF PROJECT BENEFITS TO WATER QUALITY

Water quality monitoring of the Iowa Great Lakes, especially following a catastrophic event such as the Flood of 2024, is an essential piece of the watershed management program for the IGL. The data collected will provide information on the long-term effects from this event and will continue to help provide information on the timing and magnitude of nutrients and sediment entering the lake system from different sources and under different hydrologic and weather regimes. The assessment of the land use change and how these changes have affected water quality (in relation to the CLAMP data) will help the community understand the value of conservation practices and the amount of conservation implementation that is needed to achieve reductions in phosphorus in the lake system. The flood assessment data will also be useful in suggesting new practices to prevent such issues in the future. While models are crucial to the development of plans, they are best when coupled with on-the-ground data that help to verify assumptions and calculations. Especially in low-gradient environments such as our glacial lake systems, assumptions about erosion and delivery of nutrients may be inaccurate. The analysis of these data will further our goals of watershed protection for the IGL system. Additionally, the information campaign on stormwater management will reduce the storm water flows off urban lots into the lake systems. With increased development pressure around the lakes, these best management practices can help to stabilize soils, sequester nutrients, and infiltrate rainwater.

PUBLIC AWARENESS PLAN

Lakeside Lab will promote the project and results of the projects in several ways including (but not limited to) public presentations at our Tuesday Night Seminars, on KUOO for the Lakeside Science Minute, social media posts (Facebook, Instagram, Twitter), newspaper articles and flyers. Results from the projects will be highlighted at the Prairie Lakes Conference, Blue Water Festival and at a public presentation/showcase of results at Iowa Lakeside Lab.

The Iowa Lakeside Lab will publish water quality results on their website and make reports of results available via the web and in hard-copy format.

Maintenance Plan and Data Rights

Water quality data will be stored by the Iowa Lakeside Laboratory and made available to the public both through the Lakeside website and through the IIHR Geological Survey in the Iowa Water Quality Information System (IWQIS). Reports will be provided on the Lakeside website at www.iowalakesidelab.org. GIS data will be served through the Lakeside web portal. Backup copies of the water quality data are also stored at the State Hygienic Laboratory in the SHL Environmental Laboratory Information System (ELIS).



IOWA LAKESIDE LABORATORY

October 1, 2024

To: Dickinson County Clean Water Commission

Subject: Letter of Support 2025 Friends of Lakeside Lab, Inc. Water Quality Grant

Dear Commissioners:

Iowa Lakeside Laboratory is pleased to provide support for the Friends of Lakeside Lab's Iowa Great Lakes Monitoring & Assessment Proposal. Lakeside will commit \$54,000 in hard cash match for the project and an additional \$1500 in soft match support.

We believe that this study to understand the long-term ecological impacts of the 2024 flood are essential in understanding how we can protect the lakes in the future and assisting with recovery efforts. The data collected as part of this study are critical in assessing the long-term protection of the lake and will assist with the identification of areas that need further conservation actions.

For these reasons, Iowa Lakeside Lab is pleased to be able to support this project and encourages the Dickinson County Water Quality Commission to consider providing funding to this worthwhile project.

Sincerely,

Mary Skopec, Ph.D.
Executive Director
Iowa Lakeside Laboratory: Regents Resource Center
1838 Hwy 86
Milford, IA 51351-7267
Mary-Skopec@uiowa.edu

Iowa Lakeside Laboratory
Regents Resource Center
1838 Highway 86
Milford, IA 51351
phone: 712-337-3669
fax 712-337-0227
iowalakesidelab.org