

GREEN LAKE  
ASSOCIATION  
PRESENTS

THE STATE *of*  
THE LAKE  
BREAKFAST



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PRESENTS

# THE STATE *of* THE LAKE BREAKFAST

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Welcome to the Green Lake Association's inaugural State of the Lake Breakfast & Annual Meeting. We are so grateful that you've chosen to spend your morning with us learning about the lake, its challenges, and how the GLA is responding in bold and exciting new ways.

If you're joining us, it's likely you recognize that the stakes couldn't be higher, and the need couldn't be more urgent—so thank you for being here today and thank you for your support of the GLA.

We are a non-profit, member-funded organization, so your willingness to engage and advocate on the lake's behalf is the fuel for our mission and our organization.

Today, you'll hear the latest news about how we are broadening our impact so that we can better tackle Green Lake's declining water quality. To that end, this event program is intended to showcase our expansive strategies aimed at protecting Green Lake and ultimately improving its water quality.

There is no doubt that the lake has its significant challenges and that substantial work lies ahead of us—but I hope you'll join me in feeling a sense of *hope*. With your support, we've been able to understand the magnitude of the lake's issues and leverage our unique lake and the resources of our unique lake association to do something about it.

We can't do it alone. We can't do it without you. But we can do it together.



Stephanie Prellwitz  
Executive Director



## SCHEDULE OF EVENTS

JUNE 18, 2022

**8:30 AM**

BREAKFAST

**9:15 AM**

WELCOME & CALL TO ORDER

*Kent DeLucenay, Chair of the Board*

**9:30 AM**

STATE OF THE LAKE PRESENTATION

*Stephanie Prellwitz, Executive Director of the Green Lake Association*

**10:30 AM**

TRANSITION OF LEADERSHIP  
& CLOSING COMMENTS

*Kent DeLucenay, Past Chair of the Board*  
*Gary Mecklenburg, Chair of the Board*

**11:00 AM**

ADJOURN

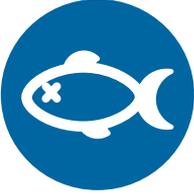
# MAKING AN IMPACT

There is no doubt: Green Lake is an incredible lake and is in the midst of significant water quality challenges. In response, the Green Lake Association is broadening its focus so that we can better tackle the lake's declining water quality.

As we expand the Green Lake Association's focus and project portfolio, we are changing the terms we use to communicate about them. Previously we have focused on three pillar projects: Clean Streams, Green Acres, and Invader Defense.

While these project categories have served us well in the past, they no longer fully-reflect the scope of the more expansive actions we are taking on behalf of Green Lake.

This year, we are introducing six areas of focus—IMPACT Pillars—that showcase the work of the GLA.



**I**NVASIVE SPECIES PREVENTION



**M**ONITORING AND RESEARCH



**P**HOSPHORUS REDUCTION



**A**CCESS & RECREATION



**C**OMMUNITY ADVOCACY



**T**EACHING AND OUTREACH



## INVASIVE SPECIES PREVENTION

### CLEAN BOATS CLEAN WATERS

Last year, Clean Boats Clean Waters (CBCW) Watercraft Inspectors examined 2,210 boats. Of these boats, 62 had visited 14 other bodies of water within five days of coming to Green Lake, putting the lake at potential risk for 12 new invasive species. These inspections took place at four of the lake's eight boat landings.

In 2022, the GLA was awarded a CBCW grant by the WDNR to staff Watercraft Inspectors with a presence at all eight of Green Lake's boat landings. Four Watercraft Inspectors have been hired for the summer, so you may see the following at the lake's boat landings: Ella Davis, Brandon Lyle, Tracy Nowacki, and Kaylee Stadler.

### BOAT WASH STATIONS

The GLA was awarded a grant by the WDNR to construct the lake's first Boat Wash Station at the Green Lake County Dodge Memorial Park boat landing. This project will allow owners of boats that recently visited other lakes to first wash off potential new invasive species not yet found in Green Lake.

Construction plans are being developed with our partners in the Green Lake County Land Conservation Department. Construction permits were issued by Green Lake County and project planning is in process with associated vendors. The project's launch is planned for 2023.

## CARP REMOVAL

The GLA, in partnership with the Green Lake Sanitary District, sponsors a sustained carp harvest from within the County Highway K Marsh (CKM) and Green Lake.

Carp removal is a commonsense measure to help the CKM rebound back into a healthy wetland that is able to filter phosphorus pollution from Green Lake. The activity of carp destroys the ecosystem, suspends sediment, and prevents light from reaching beneficial aquatic plants—which in turn reduces the capacity of the CKM to act as a biological phosphorus filter.

The quantity of carp harvested from Green Lake and CKM has decreased dramatically over time, which is a positive sign that the strategy is working. The highest recorded harvest is compared to the 2022 harvest below:

- Green Lake: From 126,000 lbs maximum to 0 lb in 2022
- CKM: From 80,000 lbs maximum to 5,400 lbs in 2022

## DIVER ASSISTED SUCTION HARVESTING (DASH)

The GLA sponsored an Aquatic Invasive Species (AIS) plant removal program at boat landings in 2022 utilizing Diver Assisted Suction Harvesting (DASH).

Divers enter the water with surface supplied air allowing them to remain underwater for long periods of time. Divers inspect the aquatic growth and remove AIS plants by feeding them into a 50-foot suction hose. The entire plant is pumped via suction hose into a mesh bag located on the deck of a boat with little potential for plant fragmentation and re-rooting.

The DASH process has the potential to eliminate AIS colonies when used over successive years. The goal of this program is to reduce the pressure of existing AIS plants at boat landings and to serve as a close inspection to promptly identify and remove any potential new invasive species.





## MONITORING & RESEARCH

### LAKE STUDY RESULTS

A research study completed by Michigan Technological University and the US Geological Survey confirmed that excess phosphorus loading is responsible for the low oxygen water layer that forms in the lake each year at approximately 40 ft.

The study defined the magnitude of the lake's phosphorus problem. In order to meet baseline water quality goals, a 46% phosphorus reduction is needed; to return Green Lake back to the clean, oligotrophic lake it once was, a 67% reduction is needed.

The study also found that nearly 80% of the phosphorus that enters Green Lake passes under two bridges: County Highway A (48%) and County Highway K (29%).

### PRECIPITATION & LAKE RETENTION RATES

Since 1979, Green Lake has experienced over a five-inch increase in annual precipitation that is delivered during more intense storms. These historic rain events result in more phosphorus pollution harming Green Lake's water quality.

Recent studies have also evaluated the effect of these larger rain events on Green Lake's retention time, which is generally the amount of time a drop of water stays in a lake. Over several decades, Green Lake's average retention time has shortened from 21 to 13 years as a result of increased precipitation.

## HYDROLOGY STUDY

The GLA contracted with a consulting firm, Kieser & Associates, to understand if the flow from Silver Creek is fully mixing with the lake, since this main source of phosphorus loading is so close to the lake's outlet and may quickly exit the lake (versus the County Highway K inlet, which is located far from the lake's outlet). The hypothesis was that, if water from the Silver Creek Estuary short-circuited the lake, then restoration efforts within this part of the watershed would be a lower priority.

Findings indicate that the water from the Silver Creek Estuary does indeed mix equally in the lake before exiting. Therefore, restoration efforts in Silver Creek Estuary are equally important to those within the County Highway K Marsh.

## WATER QUALITY STREAM MONITORING

The GLA is sponsoring expanded US Geological Survey water quality monitoring to Roy and Wuerches Creeks and the outlet to Green Lake at the Puchyan River. Water monitoring in Green Lake and its associated inlets is currently conducted by the US Geological Survey, in conjunction with the GLSD.

This monitoring scheme will better target future priority areas for conservation practices. In particular, it will provide a more holistic approach to examine the health of the lake and the County Highway K Marsh to make fact-based decisions on behalf of the lake.

## COUNTY HIGHWAY K MARSH STREAM EROSION SURVEY

The GLA has contracted with Resource Environmental Solutions (RES) to identify actively eroding stream banks on Roy and Wuerches Creeks—which serve as a source of phosphorus pollution, since sediment and phosphorus are closely linked. The survey will also inspect opportunities for best practices on adjacent agricultural land.

Data from this survey will prioritize future streambank restoration work to help make these ecosystems and the lake's water quality more resilient.





## PHOSPHORUS REDUCTION

### CAPTure™ PHOSPHORUS INTERCEPTION

A novel, small-scale filtration system to intercept phosphorus from an agricultural field detention basin (example pictured above) will be trialed over the next three years in the Green Lake watershed. This project will be conducted by the GLA, in conjunction with the Green Lake County Land Conservation Department and consulting firm, Kieser & Associates.

The project is funded through WDNR grants and GLA members' generous donations. If the CAPTure™ systems are successful in removing phosphorus from stored agricultural runoff, strategic placement of additional units in the watershed will be evaluated.

### COVER CROPS WITH NO-TILL DRILL

The GLA recently purchased a no-till drill with a prairie seed attachment to allow farmers to trial interseeding cover crops and planting prairie strips on their land. These practices form a green blanket over the soil's surface—primarily during springtime when conditions are most vulnerable to transporting phosphorus to the lake.

Our hope is that, as farmers see the benefits of these practices, more producers will incorporate these beneficial water quality practices into their operations. Thank you to the Green Lake County Land Conservation Department for partnering with the GLA on this program.

## SHORELINE RESTORATION

The GLA is currently working with our partners to target areas of actively-eroding shoreline that serve as a direct source of phosphorus pollution to Green Lake.

Natural shorelines reduce negative water impacts from pollutants, sediments, and algal blooms, while providing habitat for fish and wildlife.

## STREAMBANK RESTORATION

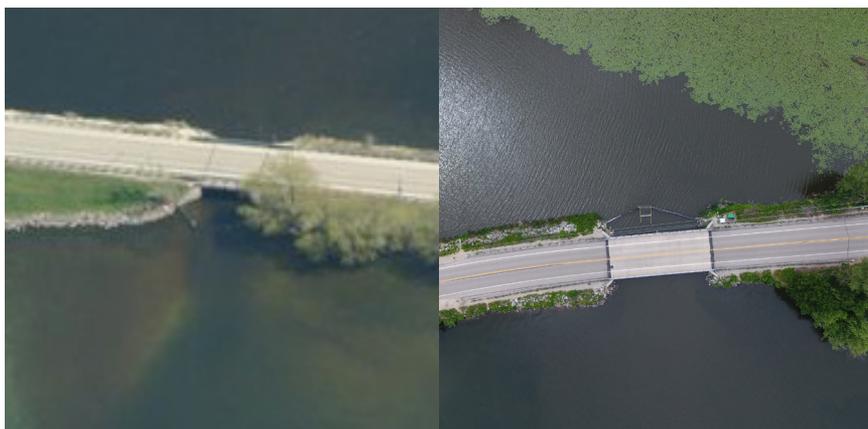
Over the past several years, the GLA has provided financial and volunteer support to restore sections of streambanks on Roy Creek, White Creek, and Dakin Creek.

On Dakin Creek, a perched culvert and lack of adequate habitat prevented the trout stream from being a suitable habitat for brook trout since the 1950s. The GLA worked with several partners to replace two culverts, repair sections of the stream, and provide fish habitat. Several thousand brook trout have now been stocked in Dakin Creek and are thriving. We brought back the brookies!

## KEYS TO THE FUTURE AT A & K

The magnitude of the phosphorus reduction needed to meet water quality goals is significant: a 50% to 70% reduction in phosphorus will be required over the coming decades to reach water quality goals. While traditional restoration practices are important, they may not be sufficient to meet the challenge Green Lake faces.

This year, the GLA will initiate a feasibility study, looking worldwide for technological applications which will be crucial in quickly reducing lake phosphorus levels. We intend to take advantage of phosphorus pinch points, since 80% of the phosphorus entering the lake flows under two narrow bridges: County Highway A (pictured left) and County Highway K (pictured right).





## ACCESS AND RECREATION

### STATIONARY DUCKWEED HARVESTER

The GLA has developed an innovative application of existing, proven technologies integrated into a system designed to capture duckweed as it leaves the Silver Creek Estuary, before it can enter Green Lake. The first step will be to conduct a pilot feasibility study to determine if the system will perform as designed and/or to determine if modification would improve performance. Green Lake County granted the GLA permission to trial the system, and the proposal is currently under review by the WDNR.

### YACHT LAGOON DUCKWEED PILOT

This summer the GLA will test whether aerators in the Yacht Club Lagoon and other problem spots in the lake are effective at mitigating the accumulation of duckweed into mats that make navigation nearly impossible. If successful, the program could be expanded to other locations.

### BLUE-GREEN ALGAE SAMPLING

The GLA developed and launched a new monitoring program aimed at alerting the public to harmful algal blooms. Our improvements will shorten the identification time from weeks to minutes. The project involves the GLA's participation in a beta-test of a BloomOptix field microscope that uses artificial intelligence to identify blue-green algae.



## COMMUNITY ADVOCACY

### VOLUNTEER ENGAGEMENT

We are always looking for volunteers to help us advance our mission. Whether you want to work in a stream, update a database, or measure water quality, your efforts are needed.

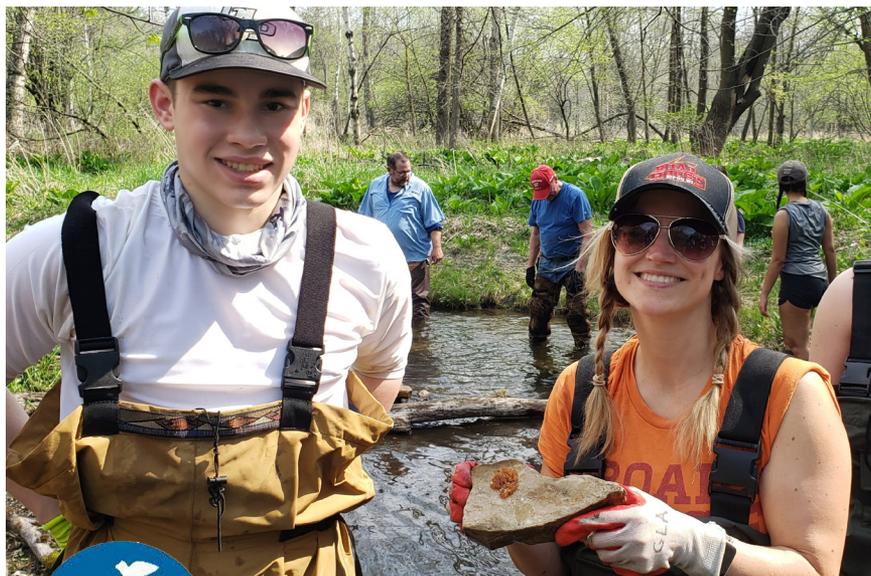
If you are interested in becoming a GLA volunteer, please email us at [info@greenlakeassociation.org](mailto:info@greenlakeassociation.org).

### ADVOCACY

We will need local, state, and federal support to achieve our objectives—and we need you, our members, to help in these efforts. The larger our membership, the louder our voice. As we identify communication opportunities, we will reach out to you for your help in achieving our goals.

### GLA MEMBERSHIP

GLA membership reached the highest level ever in 2021 at 883 members. Already this year, more than 550 members have signed up. We would like to thank you for your continued confidence in and support of the GLA.



## TEACHING & OUTREACH

### LAKE CLASS

In the summer of 2022, the GLA is launching Lake Class, a hands-on educational experience to teach students about the unique ecology of Green Lake and its streams. We're collaborating with a team of local and statewide educators to engage and inspire our students, who are the next generation of lake advocates.

### NO-TILL DRILL TRAINING

The GLA recently hosted a training day for conservation professionals to learn about the setup and considerations for our no-till drill. This train-the-trainers event was hosted in collaboration with the Sand County Foundation and the Green Lake County Land Conservation Department.

### CONSERVATION FIELD DAY

Each year, the GLA hosts a Conservation Field Day, which welcomes farmers, shoreline owners, and watershed residents to come together and talk about what we can all do to improve Big Green's water quality. During this event, we highlight the importance of how conservation practices on the land positively impact our beloved lake—and how our agricultural neighbors are caring for the land in a way that cares for the lake.

## 2022 SLATE OF OFFICERS

GARY MECKLENBURG §  
Chair of the Board  
*Former President and CEO, Northwestern  
Memorial Healthcare*

BILL MULLIGAN  
Treasurer  
*Retired Investment Banker,  
Ziegler*

KENT DELUCENAY  
Past Chair of the Board  
*Retired Human Resources Executive*

DICK MARTENS  
Secretary  
*Retired Attorney*

JIM TRUBSHAW \*  
Vice-Chair of the Board  
*Former VP of Global Sales and Marketing  
Operations, Rockwell Automation*

§ Renomination of Board Member  
\* Pending vote of the GLA membership

## DIRECTORS OF THE BOARD

KATIE ALVORD\*  
*Pediatrician*

JIM HEBBE §  
*Owner and Operator, Hebbe Farms,  
and Former Land Conservation  
Director, Green Lake County*

DEB BIERMAN  
*Realtor, Adashun Jones Real Estate*

BRAD PRICE \*  
*Former Vice President of Operations and  
Sales, Seajoy Seafood*

FRED CARUSO \*  
*Senior Managing Director, Development  
Specialists, Inc.*

MIKE REGAN  
*Cofounder,  
TranzAct Technologies*

RICH DIEMER  
*Retired Economic Development Specialist*

JEFF SHADICK §  
*Broker and Owner, Better Homes and Gar-  
dens Real Estate Special Properties*

SHARON DOLAN  
*Retired Quality Manager,  
Abbott Laboratories*

MARK FRANZEN \*  
*Founder and Former Managing Director-  
Intelliscript, Milliman*

BOB WALLACE §  
*Retired Professor of Biology,  
Ripon College*

## STAFF

STEPHANIE PRELLWITZ  
Executive Director

TINA SOLBERG  
Donor Relations Manager

ANDY LYKE  
Accountant

LEAH ALBERS  
Intern

JOHN SINGER  
Director of Development

ELLA DAVIS  
Intern



# GREEN LAKE ASSOCIATION

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WE CARE FOR OUR LAKE

Founded in 1951, the Green Lake Association (GLA) is a 501(c)(3) not-for-profit, member-funded organization. Our membership includes more than 880 households and businesses within Green Lake's watershed who share our mission and vision.

## OUR VISION

We envision a clean, restored, resilient Green Lake.

## OUR MISSION

For the sake of Green Lake and those who cherish it, we strive to improve Green Lake's water quality through science-based action, diverse partnerships, and community commitment.

## HOW YOU CAN HELP

### MEMBERSHIP

Renew your membership or become a Green Lake Association member! With a household membership of just \$80 a year, you directly support on-the-ground projects, lake research, and outreach on behalf of a cleaner Green Lake. We also offer individual membership (\$50) and business membership (\$100). If you would like to give above and beyond membership, please consider making an additional donation to support our lake-loving work.

### VOLUNTEER

Do you want to share your science expertise, mingle with other members, help plan events, or stuff envelopes? Whatever your motivation or time availability, we are interested in the skills that you can share with us! If interested, please send an email to [info@greenlakeassociation.org](mailto:info@greenlakeassociation.org).