

Times & Tides

2021
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The Voice of Green Lake

A Publication of the Green Lake Association



The Time to Act is Now

ALSO INSIDE:

Welcome John, Andy & New Board Members | Turning Our Attention to CKM

The Brookies are Back! | The Impact of the Land on the Lake | Care for the Lake by Season

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MARK YOUR CALENDARS...

- JUN. 18 GLA ANNUAL MEETING**
9 to 11 am, Location TBD
- AUG. 6 GLA ANNUAL GALA**
4:30 to 10 pm, Location TBD
- AUG. 20 LAND AND LAKE FAMILY FIELD DAY**
10 am to 2 pm, Location TBD

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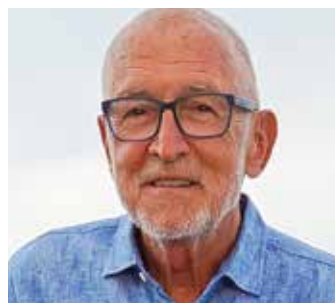
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FROM THE BOARD PRESIDENT KENT DELUCENAY

It's hard to believe that 2021 is already coming to an end. As I look back at my 22 years in Green Lake, I'm astonished at how quickly the time passes.

Since 1951, when the GLA started out as a group of local homeowners to the mission-driven, water quality focused organization it is today, the GLA has grown so much in its 70 years of existence. I'm proud of all the work that the GLA has accomplished, and yet, the sense of urgency I feel to do more has not diminished.

As we finish celebrating our 70th year as an organization, I can't help but wonder what the state of Green Lake will be like 70 years from now. While it is evident we need Green Lake, we must remember it also needs us. We must act now so that in the next seven decades, and beyond, our community can still enjoy and cherish our beautiful lake.

The time to ask more robust questions and research innovative ways to restore and protect Green Lake is now. The time to educate our families, friends, and neighbors about the needs of Green Lake is now. The time to engage in lake-protecting projects like stream restorations and invasive species prevention, is now. The time to work together to care for the lake at the heart of our community, is now.

Green Lake is a common thread woven throughout our lives, and memories. It's a place that brings us together, brings us joy, and makes our community a vibrant and thriving place.

I urge everyone to think about what they can do to act on behalf of the lake that gives us so much. Whether it's joining the GLA, volunteering, partaking in restoration projects, or just starting out on a journey to understand what the lake needs, every action counts.

Together, we can make a difference for Green Lake. By taking action now, we are making Green Lake a healthier place for those who are yet to enjoy its shores in the future. I hope you enjoy the project updates and information in this year's *Times & Tides*—and I hope it inspires you to act now for Green Lake.

Thank you for your continued support. The GLA couldn't do it without you.

Kent

WELCOME JOHN, ANDY & NEW BOARD MEMBERS

JOHN SINGER joined the Green Lake Association in June 2021 as the Director of Development. A native of Manchester, England, John began his 30-year career in development while studying at the University of Chicago, where he received his BA in philosophy and MBA in strategic management.

John has held several key positions in nonprofit management including leadership roles at the Illinois Institute of Technology, Wisconsin Historical Foundation, Dallas Symphony Orchestra, Lakehead University in Ontario, and the Menninger Clinic in Houston.

For the past 10 years, John has served as the General Manager of Purple Songs Can Fly, an arts-in-medicine nonprofit in Houston, which serves pediatric cancer patients through a variety of songwriting and recording programs.

As an avid hiker, John finds inspiration in the beauty of nature. He's enthusiastic about protecting natural resources and is glad to be working on behalf of Green Lake.



ANDY LYKE joined the Green Lake Association as the accountant in November 2021. He recently retired from Ripon Printers where he served as president and head of finance. Andy is a long-time resident of the area, having lived in Ripon for most of his life. After graduating from the University of Notre Dame with a degree in accounting, he worked for a couple of years in public accounting before returning to Ripon to join the family business. When possible, he enjoys spending time with family, traveling, and searching for the perfect chocolate chip cookie. Andy brings enthusiasm and experience to the GLA team.



MARK FRANZEN joins the GLA board after retiring from Milliman IntelliScript, a software and services company that he founded and led since 2001. Prior to that, he served as Vice President and Actuary with Trustmark Insurance Company. As of 2020, Mark is a partner in the Green Lake Hotel Group,



which owns the Heidel House on Green Lake.

When asked about why he wanted to join the GLA's Board of Directors, Mark shared: "Janice and I care deeply about the lake. Our hope is that our children, grandchildren, and their children can enjoy the beauty of the lake for generations to come. I think the GLA is moving in the right direction to bring the lake back to health and I'd like to help."

BRAD PRICE joins the GLA board after a 40-year career dedicated to sustainable aquaculture in Central and South America. Brad and his family lived in Ecuador for nine years and then relocated to Wisconsin in 1991. In 2019, Brad and his partner sold the company, Seajoy Seafood, after growing to include more than 11,000 acres of shrimp farms, intensive nurseries, processing plants, and hatcheries in three countries. Presently, Brad is owner and part-time manager of Caribbean Appetizers SA.

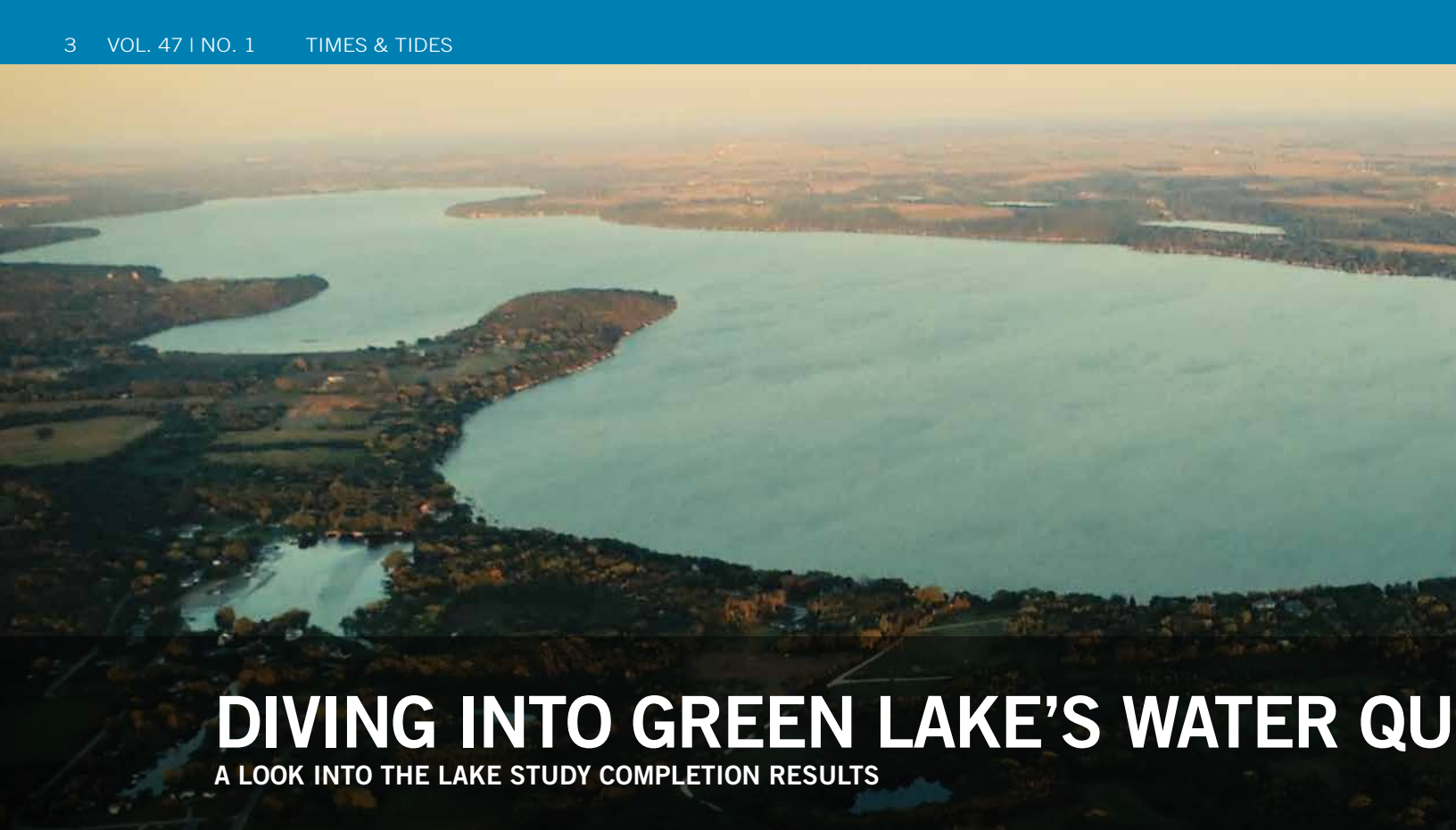
Brad shared that his enthusiasm for joining the board stems from the fact that "natural resources have always played a key role in our family life. We cherish Mother Nature and the great outdoors and have always strived to make it a better place for us and future generations."



JIM TRUBSHAW joins the GLA board after retiring from a 40-year career at Rockwell Automation. Most recently he served as Vice President of Global Sales and Marketing operations. Jim began his career in technical sales and sales management before transitioning to business leadership of global product and solution businesses.

He adds that his motivation to join the board was because "I am genuinely concerned about Green Lake's water quality and feel a responsibility to do whatever I can to preserve this gem. I'm excited about the GLA team and the potential it has to solve Green Lake's water challenges".





DIVING INTO GREEN LAKE'S WATER QU

A LOOK INTO THE LAKE STUDY COMPLETION RESULTS

Green Lake is Wisconsin's deepest, natural, inland lake. For generations, its vast, blue water has welcomed families to enjoy its beautiful shores. At one point in time, Big Green Lake was an oligotrophic lake, (also known as a clear, clean lake) but due to human impact and climate change in recent decades, Green Lake's water quality continues to decline. The GLA is committed to investing in science-backed strategies to help us restore it to the lake it once was, bringing us closer to our vision of a cleaner, more resilient Big Green Lake.

To better understand Green Lake's water quality, the GLA secured a Wisconsin Department of Natural Resources (WDNR) Surface Water Grant in 2016 to fund a study, with additional financial support from the GLA and the Green Lake Sanitary District. The GLA worked with Michigan Technological University and the US Geological Survey to conduct a multi-year research study, which was completed in June of this year and provided three key findings:

- 1) **Nutrients and Climate Change are the Cause of Green Lake's Low Dissolved Oxygen.** The lake study determined that nutrient loading (phosphorus) and the

increase in precipitation and temperature, which is exacerbated by climate change, are the causes of Green Lake's low dissolved oxygen layer at the thermocline (about 30 feet below the surface of the lake where warm, surface water and cool, deep water meet.) Low oxygen conditions can be detrimental to fisheries, with fish kills occurring in extreme cases. Green Lake was classified as an impaired waterbody in 2014 by the WDNR for this phenomenon, and part of the reason for this study was to better understand the cause of this to be able to work toward a solution.

- 2) **Two Inlets Contribute 80% of Green Lake's Phosphorus.** The inlets at County Highway A and County Highway K are the sources of 80% of phosphorus loading via the streams that feed into those inlets. While this is a significant challenge, the fact that the bulk of phosphorus entering Big Green Lake comes from two identified locations means that with the proper investment and solutions, we now know where to focus our time and money to truly make an impact.
- 3) **A Minimum Reduction of 50% in Phosphorus is Needed.** A phosphorus reduction of 50% would not change Green Lake's impairment status with the WDNR but would help prevent further degradation. In order to see a drastic change in the lake's water quality, up to a 76% reduction in phosphorus may be needed.

So what do we do? The road ahead will not be easy, but now that we know more about what we face, we can scale up our efforts to meet the needs of our lake. We can't do it alone, but luckily we have the help of our Lake Management Planning Team

FROM YOUR BEHAVIORS AT HOME, TO INNOVATIVE TECHNOLOGICAL SOLUTIONS IMPLEMENTED BY THE LAKE MANAGEMENT PLANNING TEAM THROUGHOUT THE WATERSHED, EVERY ACTION TAKEN AROUND THE LAKE CAN IMPACT OUR WATERWAYS, SO IT'S UP TO ALL OF US TO ACT NOW.

ALITY CHALLENGES

partners—Green Lake Sanitary District, Fond du Lac and Green Lake Counties, Fond du Lac and Green Lake County Land Conservation Departments, and the Green Lake Conservancy. It will require action from every member of the community, especially those living and working in the Green Lake watershed, for us to reach our required reduction in phosphorus in the coming years.

From your behaviors at home, to innovative technological solutions implemented by the Lake Management Planning Team throughout the watershed, every action taken around the lake can impact our waterways, so it's up to all of us to act now. Turn to page 9 for ways you can help reduce the amount of phosphorus you're contributing to Green Lake and its watershed.



Researchers installed buoys that collected data about the lake's water quality condition.

THANK YOU TO OUR PARTNERS!

Berlin Journal Newspaper
 Cities of Green Lake and Ripon
 Delta Institute
 Fond du Lac County Land & Water Conservation Department
 Golden Sands RC&D
 Green Lake Chamber of Commerce
 Green Lake Coldwater Fishery Advisory Council
 Green Lake Conservancy
 Green Lake County Farm Bureau
 Green Lake County Health & Human Services
 Green Lake County Land Conservation Department
 Green Lake Sanitary District
 Green Lake School District
 Michigan Technological University
 Mississippi State University
 Natural Resources Conservation Service
 Nelson Institute for Environmental Studies
 Oshkosh Area Community Foundation
 Patagonia
 Princeton Fire & Rescue Department
 Purdue University
 Ripon Area School District
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 Towns of Brooklyn, Green Lake, Markesan, Princeton, Ripon
 Town Square
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 University of Wisconsin-Madison
 University of Wisconsin-Madison Division of Extension
 University of Wisconsin-Oshkosh
 University of Wisconsin-Stevens Point
 Upper Fox-Wolf Farm Demonstration Network
 Water Action Volunteers
 Wisconsin Department of Natural Resources
 All GLA Members, Board Members, Donors, Volunteers, Citizen Scientists, Sponsors, Supporters, Partners, and many more!



TURNING OUR ATTENTION TO THE CO

ADDRESSING A MAJOR SOURCE OF GREEN LAKE'S PHOSPHORUS

Back in the 1800s, the US government stocked carp in our waterways as an easy and inexpensive food source. Now, thousands of pounds of carp are manually removed from Green Lake each year—just a fraction of the population considering each carp can lay one million eggs. Why does it matter? Carp are just one of the many challenges—a very visible, slimy one at that—permeating the County Highway K Marsh (CKM) on the southwest end of Big Green Lake.

The CKM is a 269-acre marsh that enters Big Green Lake at the County Highway K bridge. It is the confluence of Spring,

Roy, and Wuerches Creeks and it represents 14% of the Big Green Lake watershed. From wind, waves, and carp stirring up sediments, to the nutrients added from surrounding watersheds and waterways, the degradation of the CKM directly impacts the water quality of Big Green Lake. In fact, a plume of sediment is often visible flowing from the CKM under the bridge and into Green Lake itself.

Since 2013, much has been done, in conjunction with partners, in the County Highway K marsh—carp removal, carp barriers, aquatic plant installation, turbidity curtain, and more. Many of these projects have included our Lake Management Planning Team partners, especially the Green Lake Sanitary District, whose dedication and hard work implementing best management practices and experimental solutions have contributed valuable insight.

Based on the conclusion from the recent multi-year lake study (detailed in the previous story), the GLA now knows that 80% of its controllable phosphorus comes from its two primary inlets: County Highway A Inlet (Silver Creek Estuary) and the County Highway K Inlet (County Highway K Marsh or CKM). The County Highway A Inlet is the source of nearly 50% of the phosphorus entering the lake annually and County Highway K is the origin of 30% of the lake's annual phosphorus loading. By considering these two inlets as primary sources of pollution—and focusing our efforts and resources on reducing phosphorus, as well as on novel strategies to intercept phosphorus at these two bridges—we believe that we will see the most immediate remedy to positively affect the long-term health of the lake and the greatest return on investment.



The GLA assisted with the planning of the turbidity curtain which was installed and is maintained by the GLSD.

COUNTY K MARSH

BASED ON THE CONCLUSION FROM THE RECENT MULTI-YEAR LAKE STUDY (DETAILED IN THE PREVIOUS STORY), THE GLA NOW KNOWS THAT 80% OF ITS CONTROLLABLE PHOSPHORUS COMES FROM ITS TWO PRIMARY INLETS: COUNTY HIGHWAY A INLET (SILVER CREEK ESTUARY) AND THE COUNTY HIGHWAY K INLET (COUNTY HIGHWAY K MARSH OR CKM).

The GLA is invested in identifying the lake's challenges to slow further deterioration of its water quality. Through various conservation practices aimed at reducing phosphorus loading, backed by supporting evidence, we now know that current best management practices alone will likely not be enough to see the desired change in Green Lake's water quality. We must continue with common sense, science-based conservation practices, while simultaneously investing in unique, innovative solutions carefully targeted at the two primary inlets.

This means the time has come to expand our strategy. The GLA and its partners are in the early stages of reaching out to engineers, researchers, and big thinkers to re-prioritize how we might intercept, capture and remove phosphorus. If we invest in the right solutions at a bold scale—we could experience a clearer, cleaner, healthier Green Lake in our lifetimes. We look forward to this next chapter, and we are counting on you to continue supporting us on this journey toward a restored, resilient Green Lake.

Since 2013, much has been done to combat the many challenges facing the County Highway K Marsh. These projects have contributed valuable insight in how we move forward.



Every year, the GLA helps fund carp removal from the lake in partnership with the GLSD.



Students from Green Lake High School, along with the Green Lake Land Conservation Department, placed native aquatic plants in the marsh in 2017, in an attempt to help anchor sediment and reduce phosphorus loading to the lake.



In 2014, the GLA and WDNR set up carp enclosures to determine if reducing carp activity would help plant growth in the marsh.

THE BROOKIES ARE BACK!

SEEING SIGNS OF A RESTORED DAKIN CREEK

Dakin Creek, a class II trout stream, has received a lot of attention in recent years with our “Bring Back the Brookies” project, and the GLA is excited to announce that the project is working!

In the fall of 2019, many volunteers spent several days alongside the GLA and WDNR restoring eroding stream banks and improving trout habitat with the use of reclaimed Christmas trees.

Then, in the spring of 2020 two culverts were replaced that were impeding the trout’s ability to migrate and spawn. Finally, the brookies were brought back to Dakin Creek, when 974 brook trout were released in the creek in 2020.

The GLA recently heard from WDNR Water Quality Biologist Dave Bolha, who reported that the brook trout that

were released have “responded well, making use of the improved habitat in Dakin Creek and are migrating upstream of Brooklyn G Road.”

This past spring, the GLA worked with the Green Lake County Land Conservation Department and volunteers to replant trees and shrubs around the area where the culvert was replaced. There’s more work to be done on Dakin Creek to further improve habitat upstream, but unfortunately, the 2021 work days were canceled due to Covid. The GLA plans to reschedule for the spring of 2022, and looks forward to welcoming volunteers once again.

Also, in 2021, stream restoration work was completed on White Creek. Stay tuned for more information on that exciting project in our Annual Report!



In 2020, two culverts on Dakin Creek were replaced in order to improve stream health and allow brook trout to migrate upstream.



The GLA, Green Lake Land Conservation Dept., and volunteers helped plant trees and shrubs around one of the new culverts at Dakin Creek this summer.



Nearly 2,000 brook trout have been restocked in the creek and are thriving in their restored habitat!



VOLUNTEER WITH THE GLA

HELP US OUT AT THE OFFICE

From filing, and photocopying, to plant care and office organization, we need all hands on deck at the GLA office. If you have specific administrative skills you want to use, please let us know so we can match you with the right project.

JOIN OUR ADVOCACY GROUP

Looking to make a splash in Green Lake and beyond? By joining our advocacy group you'll stay up-to-date on important issues and legislation that affects water quality in Big Green and our watershed. For more information please visit <https://www.greenlakeassociation.org/volunteer>.

BECOME A SALT WATCH VOLUNTEER

Interested in how much salt is making its way into Green Lake? Sign up to become a salt watch volunteer by taking monthly measurements around Green Lake. To get your measurement kit, email Jennifer at Jennifer@greenlakeassociation.org.

ADOPT A STORM DRAIN

Storm drains are direct pathways for pollution and nutrients to flow into Green Lake. By adopting a local storm drain, you pledge to keep it clear of trash, yard debris and leaves. Choose to monitor a drain near your house or business, and send us a picture of your clean storm drain throughout the seasons!



THE IMPACT OF THE LAND ON THE

PROJECT GREEN ACRES PROGRAMS

Since 65% of Green Lake's drainage area is agricultural, it is crucial to think beyond Green Lake itself and focus on the 107 square miles that compose its watershed. Project Green Acres, one of the initiatives of the GLA, focuses on building a community of farmers who are dedicated to protecting the land and the lake.

Since caring for the land and the lake go hand-in-hand, every year, the GLA—along with the Green Lake County Farm Bureau and many planning partners—host the Land & Lake Family Field Day. This event helps demonstrate how local farmers are caring for Green Lake through environmentally and economically sound practices.

This year's event featured cover crop plots, a stream restoration site, a managed grazing demonstration and talk,

equipment demonstrations, and a rainfall simulator. With nearly 150 people in attendance, this was our most successful field day ever!

A big thank you to our hosts Lynne and Brad Goldsmith at Avalon Creek Farm, and to Mississippi State University for their grant support of the event. Be sure to mark your calendars for next year's field day on Saturday, August 20, 2022!

Another initiative of Project Green Acres is the Agricultural Stewards Scholarship program (formerly known as the Future Farmer Scholarship). This program offers scholarships to help farmers and students attend conferences where they can learn about practices that protect the land and waterways. Anyone, high school age and older, is invited to apply. Contact Jennifer at Jennifer@greenlakeassociation.org for more information.



Avalon Creek Farm hosted the 2021 Field Day, where nearly 150 people came to learn about lake friendly farming practices.



Cows from Pete Badtke's farm were also in attendance to help demonstrate the benefits of managed grazing practices.

LAKE

HOW TO CARE FOR THE LAKE BY SEASON



WINTER

- Reduce salt use. A 12 ounce cup of salt (the size of a standard coffee cup) is enough to treat 10 sidewalk squares.
- Become a Salt Watch volunteer.
- Give a GLA Membership as a gift!



SPRING

- Renew your GLA Membership!
- Clean up leftover salt remaining on driveways and sidewalks.
- Plant a rain garden using native plants.
- Install a rain barrel to help slow the flow of water to the lake.



SUMMER

- Keep grass clippings out of the road!
- Attend GLA events like the Annual Meeting, Gala, and Land & Lake Family Field Day.
- If using fertilizer, make sure there is no phosphorus present in the mix. The middle number on the bag should be zero.
- Cover soil bare spots in your yard to prevent erosion.
- Redirect your downspouts onto the grass to slow runoff.



FALL

- Keep your leaves out of the road and out of the lake!
- Apply for an Agricultural Stewards Scholarship.
- Plant a tree to help anchor soil in place.
- Adopt a storm drain in your neighborhood and keep it clear of leaves and rubbish.



Previous scholarship winners attended the GrassWorks conference, just one of many educational options for applicants to attend.



GREEN LAKE
ASSOCIATION

WE CARE FOR OUR LAKE

PO Box 364, Green Lake, WI 54941

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