

Green Lake SANITARY DISTRICT

P.O. Box 417 • Green Lake, Wisconsin 54971 • 920-295-4488

Spring Newsletter 2015

USGS Presents State of the Lake

On April 21, 2015, Dr. Dale Robertson of the U.S. Geological Survey (USGS), presented the USGS's annual "State of Big Green Lake" presentation to the GLSD Board of Commissioners at the GLSD's regular monthly board meeting. A summary of the USGS's presentation is provided below.

The U.S. Geological Survey (USGS), in cooperation with the Green Lake Sanitary District (GLSD), has documented the water quality of Green Lake on a monthly basis from April through September since 2004. The USGS also evaluates a number of the tributaries to the lake to quantify nutrient input to the lake. The USGS uses very consistent and rigorous sampling protocols that enable the water quality of the lake and its tributaries to be regularly evaluated and examined for long-term trends. In general, the water quality of Green Lake in 2014 was relatively similar to that during the past few years (as described in a previous newsletter). The only apparent change in water quality is an improvement in water clarity, which began around 2008, shortly after zebra mussels were found in the lake.

In 2014, the average secchi depth, a measure of water clarity, from June through August averaged 21 feet, compared to an average depth of 14 feet, prior to 2008. Nutrient (phosphorus) concentrations in the major tributary to the lake, Silver Creek, have gradually declined since the late 1980s. This is most likely due to reductions in nutrient emissions from the Ripon wastewater treatment plant and other actions taken in the watershed (i.e. Restoration of the County A Estuary, and other Best Management Practices). Although nutrient concentrations in Silver Creek have declined by approximately 50 percent, smaller reductions in loading of nutrients from that watershed have occurred because of increased precipitation and streamflow in recent years. Nutrient inputs are now also being monitored in Roy Creek and at the Highway K Bridge on the southwest side of the lake. ❖

2015 Spring Cleanup

The Green Lake Sanitary District's Annual Spring Cleanup will be held from Saturday, May 23, 2015 through Saturday, May 30, 2015. Garbage containers will be available at the GLSD Wastewater Treatment Plant (located at N5295 County Highway TT in the Town of Princeton) during the dates and times specified below.

The garbage containers will be located within the Wastewater Treatment Plant Facility fences and identification of being a GLSD property owner will be required (same rules as last year). The containers will be available for garbage drop off from 8 am until 3 pm for the following days: Tuesday (5/26/15),

Wednesday (5/27/15), Thursday (5/28/15) and Friday (5/29/15). The containers will also be available for garbage drop off from 8:30am until noon for the following days: Saturday (5/23/14) and Saturday (5/30/14). Most trash will be accepted as well as scrap metal and yard waste. Hazardous materials such as used oils, paints, batteries tires, microwaves, recyclables and appliances containing fluids etc. **will not be accepted.**

Because of the law that went into effect in September 2010 electronic waste **WILL NOT BE ACCEPTED.** Below is a list of the items that will not be accepted:

Television (any size), desktop or laptop computers, mice, keyboards, any computer cables, computer speakers, desktop printers, CD players, DVD players, VCRs, DVRs, and other video players, CPUs, monitors, fax machines, scanners, video recorders/players, video game consoles, zip drives, hard drives, external modems, copy machines, fluorescent light bulbs.

The City of Princeton will be collecting E-Waste on May 21st from 8:30am to 3pm, please call the City of Princeton Clerk's Office for more information 920-295-6612. You do not have to be a City resident to take advantage of this event.

If you have any type of hazardous waste materials (i.e. chemicals, paints, etc) that you want to dispose of properly, Green Lake County Land Conservation (920-294-4051) will be holding a "Clean Sweep" on August 14, 2015, this event will run from 11am through 6pm. Please contact Green Lake LCD for more information.

For the 11th year in a row, we plan to provide an area set up for **Reusable Items**. If you have gently used items that are not ready for the landfill, we will accept them and donate them to people and organizations that can reuse them.

If you are unsure about an item, contact the District Office at (920) 295-4488 between 8am and 3pm for clarification. ❖

Green Team Events for 2015

Event Description	Date of Event
1. Mitchell Glen Spring Tour (SPRING TOUR IS FULL)	May 9th
2. Parkelm Farm Tour	May 23rd
3. Kayak or Canoe the K Marsh	June 13th
4. Horse Farm Tour	June 27th
5. Beekeeping	July 11th
6. Aqweed Demo	July 18th
7. Evening with the Bats	August 14th
8. Moonlight Paddle on Silver Creek	September 25th
9. Mitchell Glen Fall Tour	October 10th

Lake Management Plan (LMP) Updates

With the importance of our LMP taking center stage, we wanted to share the current status of the lake (see front page first article "USGS Presents Current State of the Lake") with our property owners followed up by a more detailed look at last year's (2014) completed lake projects as well as this year's (2015) project Goals & Objectives. The 2014 accomplishments and 2015 ongoing projects are summarized below.

2014 Lake Protection & Improvement Completed Projects

<u>Project Description</u>	<u>Project Cost</u>	<u>Phosphorus Reduction</u>
1. Green Lake County BMPs	\$ 487,226	885+ lbs. Phosphorus

Summary – The Green Lake Best Management Practices (BMPs) are really the centerpiece of our LMP. These BMPs are primarily hard structures (i.e. Sediment Basins, etc) installed on Ag lands to stop sediment & phosphorus runoff from leaving the farmland and entering the lake. Since the approval of our LMP in 2013, over 40 BMPs have been installed (most of them permanently) around our lake.

2. Low Dissolved Oxygen (DO) Strategic Planning Information Impairment	\$10,000	Strategic Planning Information
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Summary – The preliminary work for studying and identifying this issue began in 2014. This will be a 3 year project with a final goal of identifying the reason(s) behind why the low DO is occurring. In addition to a more detailed understanding of the reasons behind this impairment, this project will also include the development of a lake model designed specifically to simulate actual lake conditions which will allow us to better understand the causes & solutions for correcting this phenomenon.

Our goal over the next 3 years will be to closely study and model this phenomenon in order to better identify the reasons for the declining DO. Once those reasons have been more clearly identified, we can more accurately target our LMP strategies & solutions to achieve our desired outcome (steady increase in the DO).

3. Restore County K Estuary	\$35,000	1,500+ lbs. of Phosphorus
• Improve carp barrier		(once restoration is completed)
• Remove carp from estuary		
• Monitor aquatic plants		

Summary – The key pieces of this project have been completed. The carp barrier has been retrofitted and the carp have been removed (netted) from the estuary, the next step will involve a monitoring program along with some exclosures to understand the best way to bring back the native seed bank naturally and expeditiously.

4. Targeted Chemical Treatments (Beyers Cove & City Millpond)	\$50,000	500 lbs. of Phosphorus
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Summary – Due to the overabundance of aquatic invasives (Eurasian Water Milfoil and Curly Leaf Pondweed), these heavily vegetated areas received relief through chemical treatments in 2014, the chemical treatments will be reapplied in both areas again in 2015.

5. New Aquatic Plant Harvester	\$150,000	500 lbs. of Phosphorus
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Summary – We purchased a second aquatic plant harvester in May of 2014. The second harvester allowed us to cut property owner lake frontage every other week during the summer as opposed to once a month prior to obtaining our second harvester.

6. AIS Coordinator and AIS Projects	\$100,000	Education & Information (AIS Aquatic Invasive Species)
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Summary – When all is said and done, the biggest threat to our lake may end up being the aquatic invasive species we have already inherited (zebra mussels) or the invader that hasn't arrived yet (spiny water flea, quagga mussels). Expect to see much more from our LMP Team moving forward on AIS.

7. City of Green Lake Storm Water Management Plan	\$10,000	To Be Determined (TBD)
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Summary – A collaborative grant between the City of Green Lake, the Green Lake Sanitary District and the Green Lake Association was written in 2014 and submitted for funding in early April 2015. This grant will pay for a City of Green Lake Comprehensive Storm Water Management Plan which will greatly help the City to better understand storm water issues and opportunities once this plan has been completed.

8. Complete GL County Stream Bank Inventory	\$6,000	To Be Determined (TBD)
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Summary – The completed Stream Bank Inventory can be used to identify problems (stream bank erosion and other opportunities to reduce runoff)

9. Watershed Model	\$7,500	Strategic Planning Information
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Summary – The Watershed Model divides up our 100+ square mile watershed into 25 smaller areas about five square miles in size. These smaller areas are evaluated and modeled using actual land application uses to determine sediment and phosphorus loading for each of the 25 areas. The model results are then used to better identify problem areas within our watershed, the end goal is to correct the problem areas with hard and soft BMPs.

10. Other Completed Projects in 2014:

- Full-Lake Aquatic Plant Survey
- Shoreline Restoration Work
- Silver Creek Monitoring (DNR)
- Monitoring Equipment - Schools
- Conservancy Properties Work

2015 Goals and Objectives

<u>Project Description</u>	<u>Project Cost</u>	<u>Phosphorus Reduction</u>
1. More Green Lake County BMPs	\$ 452,000	1,065+ lbs. Phosphorus

Summary – We certainly understand our emphasis on continuously installing more BMPs around our lake. Another 30+ projects are being installed in 2015. Our lake receives an estimated 18,000 pounds of phosphorus every year, our goal is to reduce this number by thousands of pounds of phosphorus in the next few years. Other tools will also help us to measure the actual impact of these BMPs in order to not only protect the lake, but to actually ensure continuous improvement.

2. Low Dissolved Oxygen \$25,000 Strategic Planning Information Monitoring & Modeling

Summary – This project will begin in earnest with increased monitoring work from May through October, and then, a grant will be written in cooperation between the GLSD and GLA to obtain the funds necessary to complete this study, model and monitoring over the next two years. The ultimate goal is to pinpoint the exact cause(s) for the declining dissolved oxygen levels at the lake thermocline which will ultimately help us to more accurately target our solutions for correcting this issue and removing our lake from the impairment list.

3. Agricultural (Ag) Outreach Program \$10,000 TBD

Summary – Using the newly completed watershed model along with other monitoring tools, we are working to identify Ag BMP opportunities in FDL County. These BMPs will also be included as part of the Lake Protection Grant being co-written by the GLSD & GLA for funding the actual BMPs beginning in 2016.

4. Stream Bank Inventory of FDL County Streams (Silver Creek) \$10,000 TBD

Summary – With the Green Lake County tributaries inventoried, we also want to complete the FDL County tributary inventory of all stream banks associated with our watershed. This completed inventory will be used to identify phosphorus reducing BMPs down the road.

5. Green Lake Shoreline Restoration And Fish Sticks Project \$35,000 TBD

Summary – This project will involve multiple sites around the lake and associated estuaries. The final installation of fish sticks at various sites will improve fish and wildlife habitat; while also providing valuable shore land erosion control.

6. Big Green Lake Shoreline Inventory \$10,000 Education & Information

Summary – The entire parameter of Big Green Lake will be inventoried for current shoreline conditions, including vegetative buffer width, development and signs of erosion. Results will be used to target and prioritize future restoration efforts and projects.

Summary – The project will include a series of restoration efforts on Twin Lakes which will ultimately improve Big Green Lake through the connection between the two water bodies which is Hill Creek.

7. Twin Lakes Restoration Shoreline Inventory TBD TBD

Summary – The project will include a series of restoration efforts on Twin Lakes which will ultimately improve Big Green Lake through the connection between the two water bodies which is Hill Creek.

8. Biological Oxygen Demand Assessment of GL Tributaries TBD Strategic Planning Information

Summary – LMP will partner with Ripon College to conduct an assessment of biological oxygen demand (BOD) along the length of select Big Green Lake tributaries and to use the results to identify areas of future protection/restoration activities.

9. Near Shore Fishery Appraisal \$5,000 Strategic Planning Information

Summary – Conduct a near shore fishery appraisal at preselected locations around the lake and associated estuaries. These appraisals will help us to better understand water quality conditions and trends moving forward.

10. Other Important Projects Planned for 2015:

- County K Estuary Restoration – Ongoing
- City of Green Lake Storm Water – Ongoing
- Cold Water Fish Species Monitoring (Cisco)
- RSVP – Ongoing
- Conservancy Properties Restoration - Ongoing

Lastly, all of the Goals and Objectives can be found in the LMP which is located on the websites of the LMP Partners. If you choose to view it on the GLSD website. Please go to "Programs" on the main menu bar, then choose "Lake Management Plan" on the drop down below Programs. At the bottom of the Lake Management Page, just click on the link: "Green Lake LMP – Part 1 – Updated 2015". ❖

FYI...for your information

Sewer Reminders – We are asking everyone to please **DO NOT Flush Disposable Wipes** into the sewer system. These items cause great damage by failing to breakdown, and ultimately, they clog the lift stations attempting to send the wastewater back to the wastewater treatment plant for proper processing. The wipes can also get caught in the homeowner's private lateral which is a cost that must be paid for by the homeowner. Our other culprit is Grease, please refrain from sending grease down your sink drain or any drain that ties into the sewer.

The sewer system is owned by everyone using it around the lake, proper use saves everyone from expensive repairs which are eventually passed on to those who use it. Our customers have done a great job over the years being responsible with our sewer system, thank you.

Green Lake Fishing News – On March 30, 2015, the DNR, GLSD and fish volunteers took over 25,000+ Lake Trout (Big Green Lake's quota) from our Fish Rearing Facility (FRF) and stocked them into Big Green Lake. Once again, the majority of these released fish ranged in size between 9 and 11 inches. None of the Lake Trout stocking would be possible without the continued support of the Big Green Lake Fishing Partnership. Besides the GLSD, our partners include: **City of Green Lake, Green Lake Association, Green Lake County, Fishing Guide Mike Norton, Citizen Volunteer Steve Siders, Walleyes for Tomorrow and the Wisconsin DNR.**

Garbage Reminder – Garbage is picked up on Monday mornings, except for the Holiday weekends. This Summer: In **May**, garbage will be picked up on the **Tuesday (5/26/2015)** the day after Memorial Day. In **July and August**, garbage will be picked up on **ALL Mondays**. In **September**, garbage will be picked up on **Tuesday (9/8/2015)** the day after the Labor Day Holiday. If possible put your trash out on the morning of pickup by 6am. If you have to leave before that, spray the inside or outside of your garbage bags with an ammonia/water mixture to discourage animals from creating a "garbage mess". Recycling for property owners signed up is the first Monday of the month, except if a Holiday weekend, then see Tuesday dates above.

GREEN LAKE SANITARY DISTRICT

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Aquatic Plant Harvesting (Aqweed)

During the Summer months (between Memorial Day and Labor Day) the GLSD operates an Aquatic Plant Harvesting Program referred to as its "Aqweed Program". In our recently approved 3 year permit, we cannot start harvesting any aquatic plants until June 1st.

Provided below is a general outline of the Aqweed Program including some specifics on what property owners need to do if they are interested in participating in the Aqweed Program:

- Riparian owners on Big Green Lake as well as 3 critically connected water bodies (Silver Creek Estuary, Beyers Cove and the City of Green Lake Millpond) are also harvested in addition to the main lake.
- If your property was harvested last year, then you are on the GLSD's harvesting list for 2015. You were mailed a pink ribbon in late April which you need to attach to your pier this summer. If you would like to be removed from the harvesting list for 2015 or if you would like to be added, then please email the GLSD office at paulettej@glakesd.com to inform us of your request (Add, Remove, etc). If email is not available to you, you should either call our office at 920-295-4488 between the hours of 7:30 am to 4:00 pm M-F or mail your request to us at the Green Lake Sanitary District, P.O. Box 417, Green Lake, WI 54941.

• Our current system for marking properties will continue to be the placement of a "pink florescent ribbon" on your dock or some other structure to let our operators know which properties to harvest as they move around the lake. If you misplace your ribbon or it gets removed by mistake, feel free to contact our office (prefer email to paulettej@glakesd.com) to have another ribbon sent to you.

• Wisconsin DNR restricts cutting of each riparian property to a MAXIMUM width of 30 feet running perpendicular to the shore line. Generally, most property owners designate their 30 feet either in their preferred swimming area or adjacent to their pier. Cutting an area wider than 30 feet can be done if the property owner chooses to contact the DNR and get a special permit.

• Although the majority of funding for the Aqweed Program is through the GLSD, the program also receives financial support from the City of Green Lake and the Green Lake Association (GLA). We would like to thank the City and the GLA for their continued support. ♦