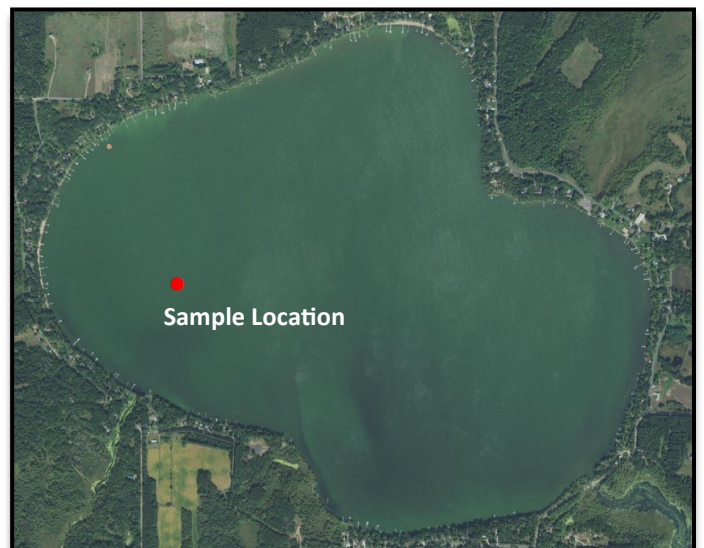


# Green Lake Monitoring Report 2024

**What:** LID volunteers collected Total Phosphorus (TP), Chlorophyll-a, and transparency information every two weeks from late May through early October in Green Lake. SWCD staff provided training and equipment, coordinated lab testing and collected temperature and dissolved oxygen profiles.

**Why:** Green Lake was added to the MN impaired waters list in 2008 for having high nutrients (too much phosphorus). In 2016, the Green Lake Improvement District and Isanti Soil and Water Conservation District partnered to develop a lake monitoring schedule to collect water samples on Green Lake. The data provides us with an understanding of water quality trends (i.e., is it getting better or worse); furthermore, the data helps us diagnose areas of concern and provides evidence for the need to implement lake improvement projects (great for grant applications). To date, monitoring data has been used to obtain nearly \$650,000 of Federal, State and local grant funding to implement water quality projects around the lake.

	<b>Green Lake</b>
<b>Township</b>	Wyanett
<b>MN Lake ID</b>	330013600
<b># of Public Boat Access</b>	1
<b>Aquatic Invasive Species</b>	Curly Leaf Pondweed; Eurasian Water Milfoil
<b>Surface Area</b>	822 acres
<b>Maximum Depth</b>	28 ft
<b>Lake Classification</b>	Deep Lake
<b>Lake Health</b>	Impaired



**A HUGE THANK YOU to present and past volunteer lake monitors! Volunteers reduce costs and time making lake monitoring feasible. In 2024, Alex and Marissa Dahlin collected lake samples and recorded transparency readings.**

## General Definitions

**Total Phosphorus (TP):** An essential plant nutrient in which an excess can cause severe algae blooms.

**Chlorophyll-a (Chl-a):** A pigment found in green plants, used to estimate quantity of algae in a lake.

**Secchi Transparency:** A measure of light penetration in water, an indication to the amount of algae in the water.

## MN Clean Water Goals for Green Lake

Total Phosphorus (TP):  $\leq 40 \mu\text{g/L}$

Chlorophyll-a:  $\leq 14\text{mg/L}$

Secchi Depth:  $\geq 4.59$  feet

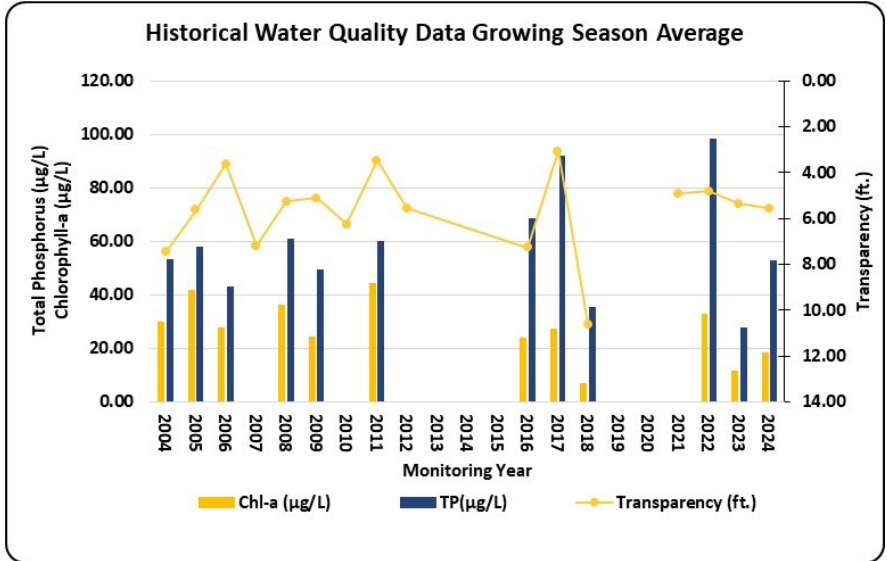
2024 Growing season average  
(June-September)

**53  $\mu\text{g/L}$  (TP)**

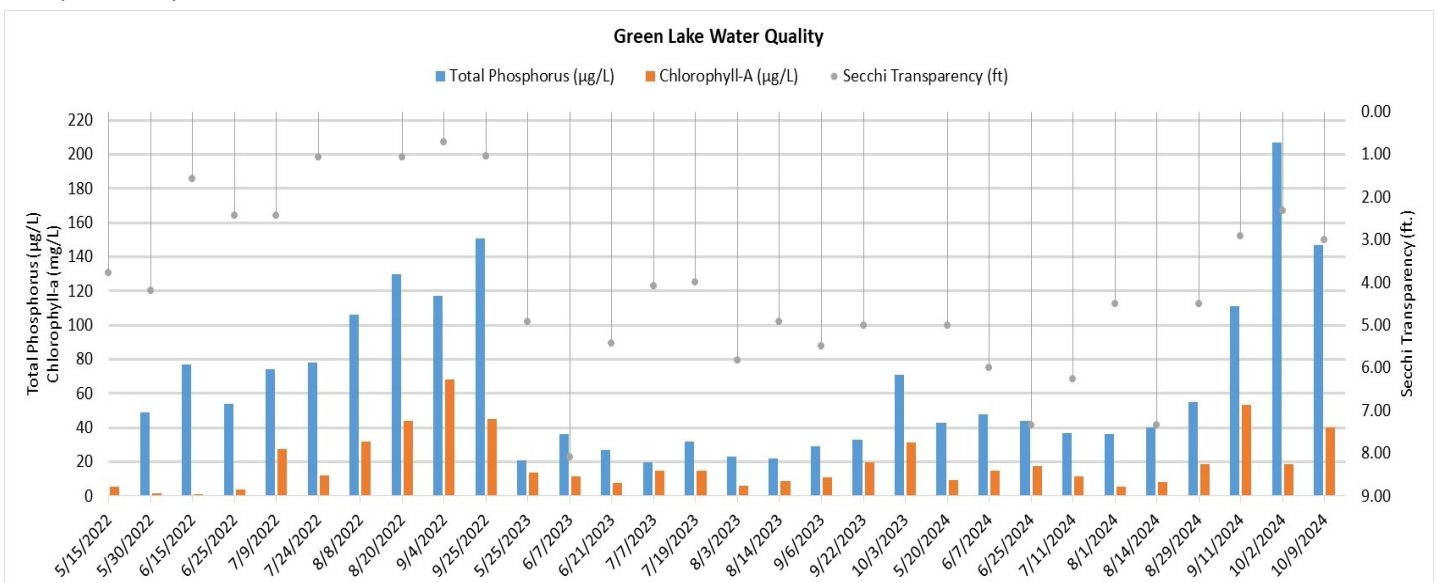
**18.5  $\text{mg/L}$  (Chl-a)**

5.55 ft. (Secchi)

Year	Grade
2016	C
2017	D
2018	B
2022	C
2023	B
2024	C



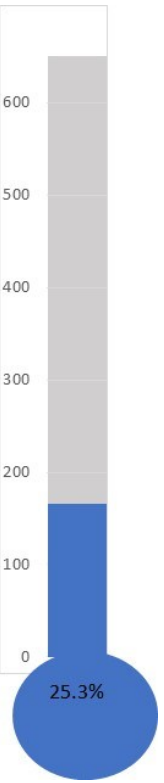
- Grades are based on the Metropolitan Council lake grading system, which creates an easy-to-understand way to communicate lake health.
- The physical appearance of the lake was rated as “high to medium algae” periodically throughout the season. These ratings followed periods of wet and hot weather.
- 2024 growing season precipitation was above average, with some areas seeing nearly double the normal rain amount. Additionally, September was the warmest since 2015 at 9 degrees Fahrenheit above normal.
- The growing season precipitation was 21.08 inches, similar to 2022 at 21.65 inches (both years had high growing season TP).
- Despite significant algae blooms in late September, lake quality throughout the summer was better than in most previous years.



**Water Health Improvement Projects:**

Over the last several years, the SWCD has been working towards installing lake health improvement projects identified in the Green Lake Subwatershed Assessment Study, County Ditch 16 and 23 Multi-purpose Drainage Management Plans and other studies. The studies above identify water quality project locations and types and rank them based on how cost-effective they are at removing phosphorus. The table below summarizes work completed to date by the SWCD. The SWCD continues to seek willing landowners to install projects. If you are interested in improving the lakes health contact us today!

Project	TP (lb/yr)
Shoreline restorations and stormwater reduction projects on private property (29)	30
Cover Crops (577 acres)	49
Curlyleaf Pondweed management (~50 acres)	10
Wetland Restorations (2)	77
<b>TOTAL</b>	<b>166</b>
<b>GOAL*</b> (based on goal set in the 2019 diagnostic study for the watershed only)	617



**2025 Projects:**

The SWCD plans to install two wetland restoration projects in the winter of 2025 and is designing two additional projects for installation in 2026. Additionally, we are working on a design for a livestock crossing and additional nearshore stormwater Reduction Projects. We are anticipating another round of federal 319 funding, a federal soil health grant, and state clean water funds to continue funding projects that will improve the health of our lake.

**2025 Monitoring:**

Conduct lake sampling annually as directed by the Green Lake Improvement District. Consider adding monthly hypolimnetic samples. An updated Memorandum of Agreement will be drafted.

Keep up the great work team!

**For more information contact: Isanti SWCD 763-689-3271**  
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**tiffany.determan@mn.nacdnet.net**

