

Thompson Lake

2021 Water Monitoring Report



Lake Summary

Thompson Lake is located in the City of West Saint Paul within the Lower Mississippi River Watershed Management Organization (LMRWMO). Land use within the watershed is primarily commercial, institutional, low density residential, and parkland. Thompson Lake was placed on Minnesota’s 303(d) List of Impaired Waters in 2014 for aquatic recreation due to excess nutrients (phosphorus).

Lake Details

- Max Depth:** 8 feet
- Watershed Size (shown):** 180 acres
- Major Watershed:** Mississippi River
- MPCA Lake Classification:** Shallow
- Met Council 2021 Lake Grade:** **C₍₂₀₂₀₎**



Water Quality Monitoring Need

Thompson Lake is monitored on an annual basis as part of the LMRWMO’s participation in the Metropolitan Council’s Citizen Assisted Monitoring Program volunteer water monitoring program. The lake is the center of Dakota County’s highly used Thompson Lake Regional Park. Currently, the lake does not meet the shallow lake water quality criteria set forth by the Minnesota Pollution Control Agency (MPCA).

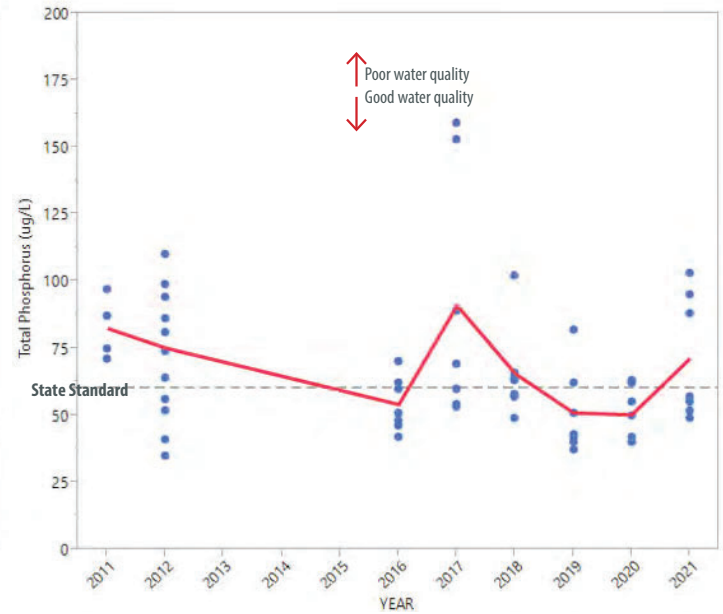
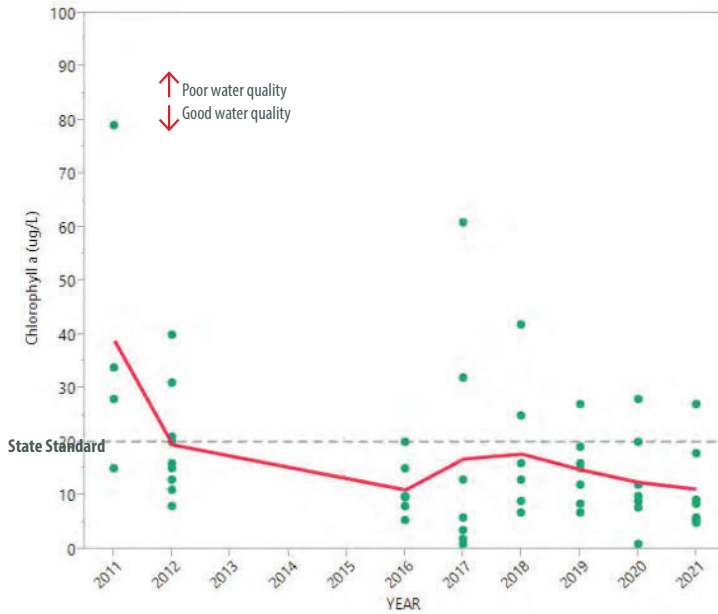
2021 Monitoring Summary

In 2018 and 2019, the LMRWMO led the installation of a comprehensive “treatment train” stormwater improvement project. This included installation of two underground sediment capture chambers, a stormwater settling treatment pond, a stormwater treatment wetland, and raingarden. In 2021, slight improvements in the chlorophyll-a level and the secchi disc readings were observed. Phosphorous levels increased substantially in 2021 in comparison to historical values. The below table shows the 2021 data.

Water Quality Parameters	MPCA Standard	Minimum	Maximum	Average
Chlorophyll-a (ug/L)	20	5	27	11.26
Total Phosphorus (ug/L)	60	49	103	71.29
Secchi Depth (m)	1	0.5	1.8	1.24

Water Quality Data 2011-2021

*micrograms per liter (ug/L) = 1,000 mg/L (milligrams per liter)



Chlorophyll-a*

Chlorophyll-a is the pigment that gives plants their green color. High levels indicate excessive algae from high nutrient levels in the lake. Low chlorophyll-a levels indicate good water quality. State standard is 20 ug/L (dashed line).

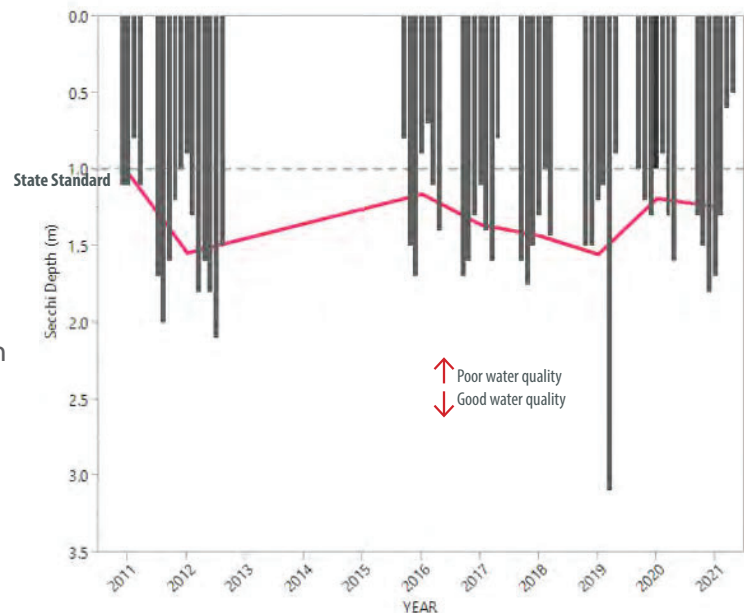
Phosphorus*

Phosphorus is a nutrient required for plant growth. High phosphorus levels can lead to algae blooms, turning water green. Low phosphorus levels indicate good water quality. State standard is 60 ug/L (dashed line).

Watershed Projects

The LMRWMO partnered with Dakota County and the City of West St. Paul on the 2018-2019 installation of stormwater projects at Thompson Lake. These projects are expected to provide long term, incremental water quality improvements which will be tracked with continued water monitoring.

Additional opportunities for stormwater treatment and infiltration of stormwater in the watershed of Thompson Lake will be sought out and implemented as they arise.



Secchi Depth

A black and white secchi disc is lowered into the water until no longer visible and measures water clarity. High secchi disc depths indicate good water quality. State standard is 1 m (dashed line).

How can you get involved?

You don't have to live on a lake to help improve water quality, **anyone can be part of the solution!** Installing a rain garden **increases water infiltration**, decreases lawn maintenance, and reduces pollution runoff that can negatively impact local water quality. The LMRWMO offers grants to residents to install rain gardens or native shoreline plantings as part of the Dakota County Soil and Water Conservation District's **Landscaping for Clean Water** program.