

Lake Augusta

2022 Water Monitoring Report

Watershed

Lake Augusta is located in the City of Mendota Heights, within the Lower Mississippi River Watershed Management Organization (LMRWMO). Land use within the watershed is primarily institutional (cemetery), commercial, and residential (low and high density). Lake Augusta was placed on Minnesota's 303(d) List of Impaired Waters in 2010 for aquatic recreation due to excess nutrients (phosphorus).

Lake Details

Max Depth: 33 feet

Watershed Size (shown): 420 acres

Major Watershed: Minnesota River

MPCA Lake Classification: Deep

Met Council 2022 Lake Grade: **F** (2021)



Monitoring

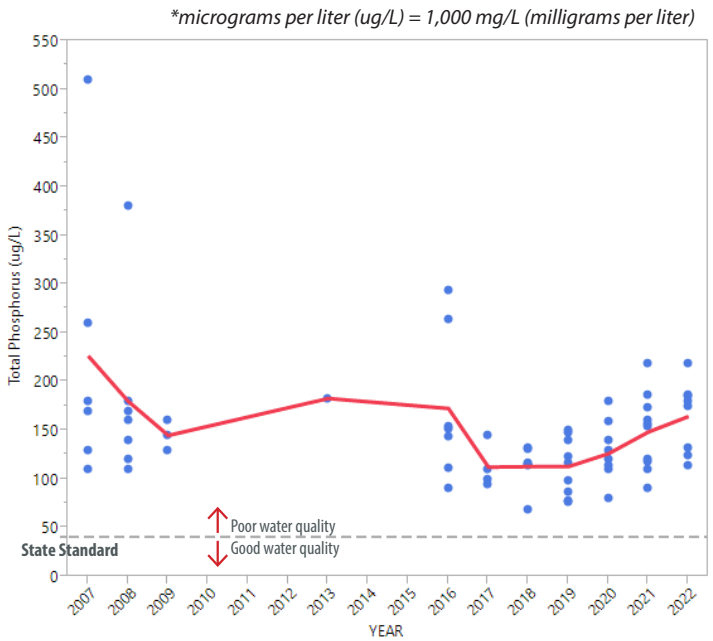
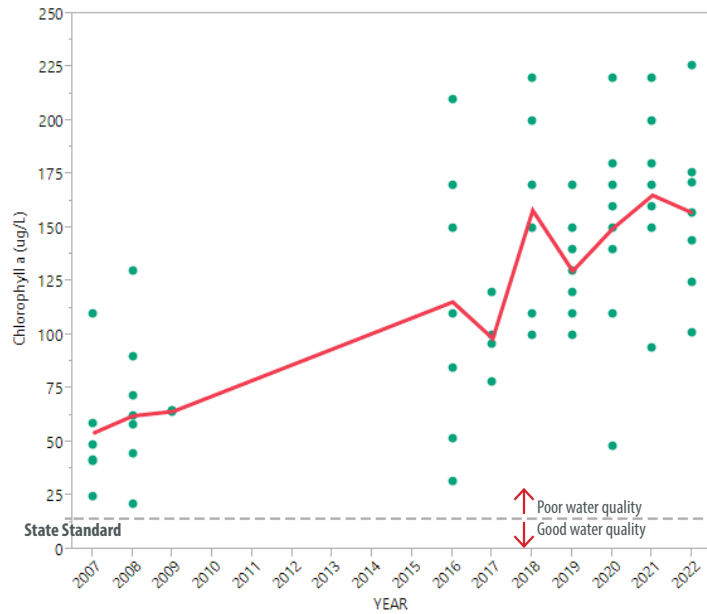
Lake Augusta continues to not meet the deep lake water quality criteria from the Minnesota Pollution Control Agency. Further study of the lake is needed to understand the poor water quality causes. In 2022, the LMRWMO began an intensive water quality study to identify long term action items to improve lake water quality. Water quality monitoring was undertaken by an environmental consulting firm in order to collect a broader set of monitoring parameters (chloride, pH, specific conductance, temperature, total suspended solids, and turbidity) at various depths in the water column.

Water Quality

Monitoring data from 2022 showed an increase in the total phosphorus average, but not the maximum value. The seasonal average for chlorophyll-a decreased, though both the minimum and maximum values increased. The 2022 Secchi reading remained very poor which is consistent with previous monitoring efforts. The below table shows the 2022 data for the three main monitoring parameters.

Water Quality Parameters	MPCA Standard	Minimum	Maximum	Average
Chlorophyll-a (ug/L)	14	101	226	157.13
Total Phosphorus (ug/L)	40	90	219	164.50
Secchi Depth (m)	1.4	0.15	0.2	0.18

Water Quality Data 2007-2022



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 14 ug/L (dashed line).

Phosphorus*

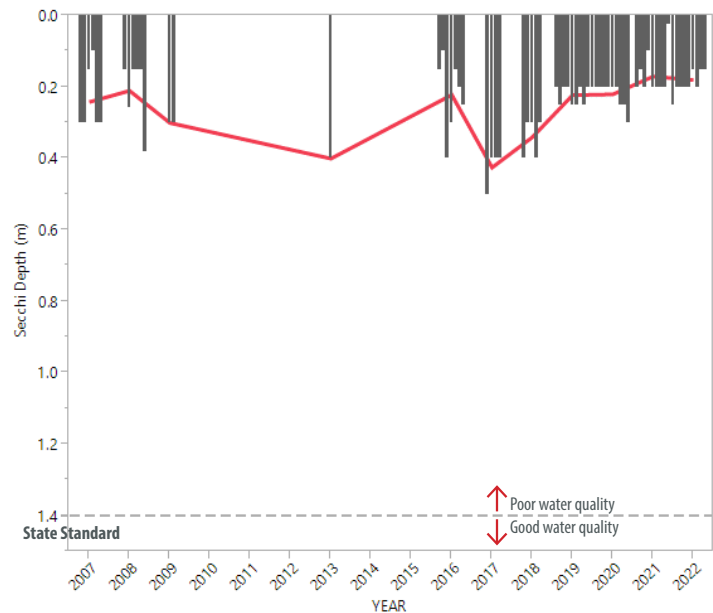
Phosphorus is a nutrient required for plant growth. High phosphorus levels can lead to algae blooms, turning water green. Low phosphorus levels indicate good water quality. State standard is 40 ug/L (dashed line).

Watershed Studies and Projects

The LMRWMO has been studying the poor water quality of Lake Augusta since 2012.

In 2017, the LMRWMO implemented an aluminum sulfate treatment (shown below) to improve water quality which provided slight phosphorus reductions.

The LMRWMO is undergoing a comprehensive study of the lake to identify long term implementation actions to improve lake water quality and a lake outlet and water quality improvement report will be complete in 2023.



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 1.4 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.