

# Lake Augusta

## 2021 Water Monitoring Report



### Lake Summary

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 2021 Lake Grade:** **F** (2020)



### Water Quality Monitoring Need

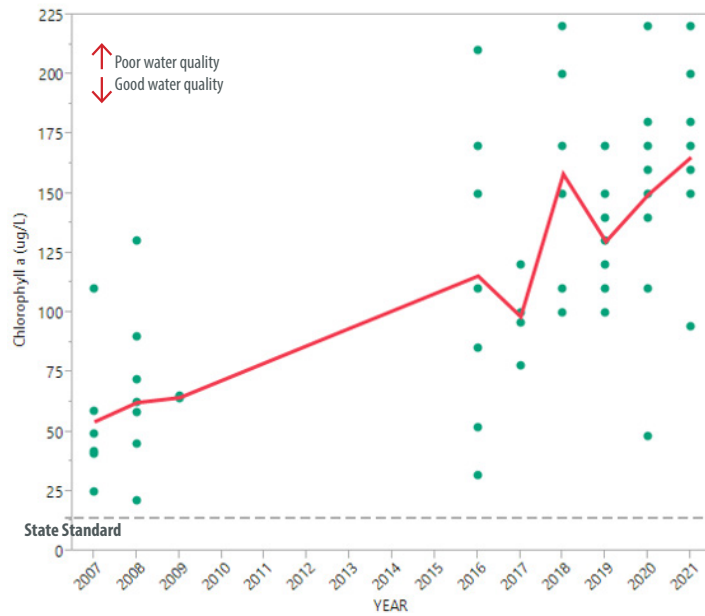
Lake Augusta is monitored on an annual basis as part of the LMRWMO’s participation in the Metropolitan Council’s Citizen Assisted Monitoring Program (CAMP) volunteer water monitoring program. The lake continues to not meet the deep lake water quality criteria from the Minnesota Pollution Control Agency. Further study of the lake is needed to understand the poor water quality causes. The LMRWMO is undertaking an intensive study in 2022 to identify long term action items to improve lake water quality.

### 2021 Monitoring Summary

Following an aluminum sulfate (alum) treatment in 2017, there were improvements for all three water quality parameters compared to data collected pre-treatment. Monitoring data from 2021 showed an increase in chlorophyll-a and total phosphorus averages, but not the maximum value, in comparison to data collected in previous years. The 2021 Secchi reading remained consistent with previous data. The below table shows the 2021 data.

Water Quality Parameters	MPCA Standard	Minimum	Maximum	Average
Chlorophyll-a (ug/L)	14	94	220	165.40
Total Phosphorus (ug/L)	40	90	219	148.60
Secchi Depth (m)	1.4	0.025	0.25	0.17

# Water Quality Data 2007-2021



## 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).

## Watershed Projects

A 2012 study conducted by the LMRWMO identified internal phosphorus from the lake bottom sediment as the primary source of phosphorus in Lake Augusta.

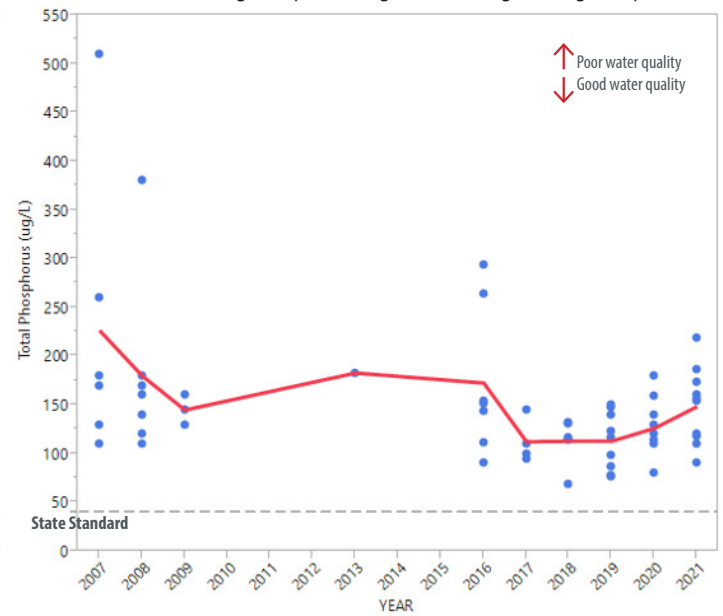
In 2017, the LMRWMO implemented an in-lake aluminum sulfate (alum) treatment to improve water quality. Upon application, the alum binds with phosphorus as aluminum phosphate and settles to the lake bottom. It is believed that long term high water levels impacted the effectiveness of the alum treatment.



## How can you get involved?

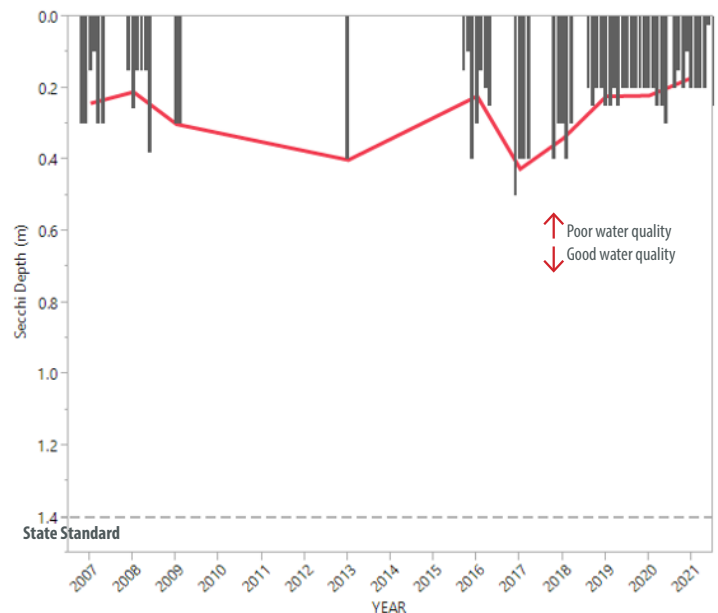
You don't have to live on a lake to help improve water quality, **anyone can be part of the solution!** Installing a raingarden **increases water infiltration**, decreases lawn maintenance, and reduces pollution runoff that can negatively impact local water quality. The LMRWMO offers grants to residents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

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



## 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).



## 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).