

# Lake Augusta

Citizen Assisted Monitoring Program (CAMP)  
2018 Volunteer Lake Monitoring Report



Lake Augusta is a 46 acre lake 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

**Size:** 46 acres

**Median Depth:** 18 feet

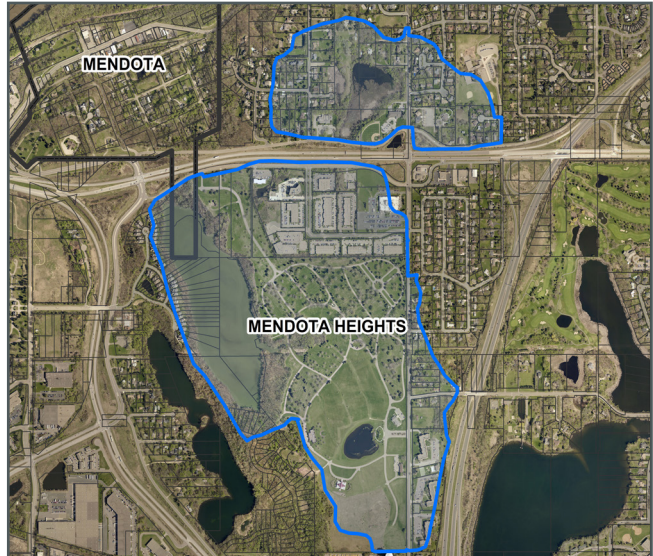
**Max Depth:** 33 feet

**Watershed Size:** 420 acres

**Major Watershed:** Minnesota River

**MPCA lake classification:** Deep

**Trophic Status:** Hypereutrophic



## Water Quality Monitoring

Lake Augusta is monitored by on an annual basis as part of the LMRWMO's participation in the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP) volunteer lake water monitoring program. Historical monitoring of Lake Augusta first began in 1998 (secchi disc - water clarity). Nutrient monitoring was sponsored by the Gun Club WMO (now Eagan-Inver Grove Heights WMO) beginning in 2007.

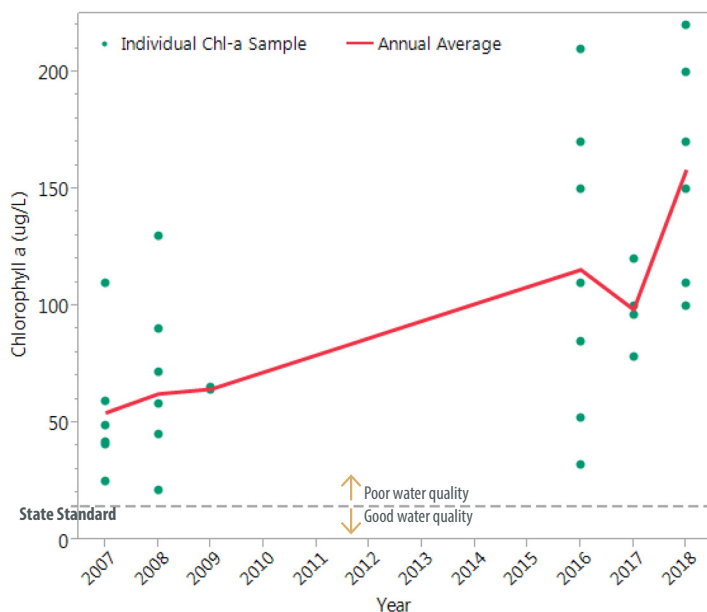
In 2012, the Minnesota Pollution Control Agency (MPCA) led an intensive water monitoring effort as part of the Watershed Restoration and Protection Strategy (WRAPS) of Lake Augusta to gain a better understanding of the lake's water quality. Results from this assessment included information about pollution sources within the watershed and advisement on pollution reductions needed in order to improve Lake Augusta's water quality so that state standards are met and the lake can be removed from the Impaired Waters List.

## Monitoring Summary

Following the alum treatment in 2017, there were improvements for all three eutrophication parameters when comparing to data collected in 2016 (pre-treatment). Monitoring data from 2018 found that water quality was more degraded than 2017. Lake Augusta continues to not meet the deep lake water quality criteria set forth by the MPCA.

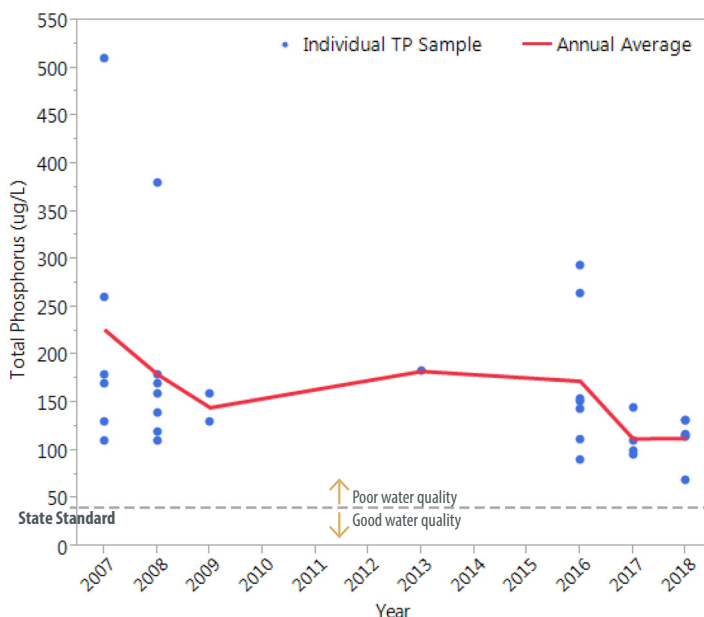
	MPCA Standard	Minimum	Maximum	Average
Chlorophyll-a (ug/L)	14	21	220	95
Total Phosphorus (ug/L)	40	69	510	164
Secchi Depth (m)	1.4	0.1	0.5	0.28

## Water Quality Charts



### 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.



### Phosphorus

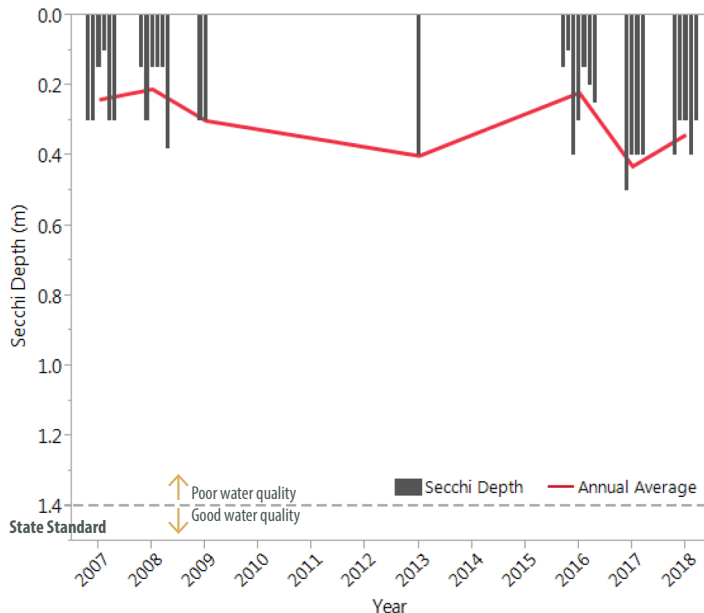
Phosphorus is a nutrient required for plant growth. High phosphorus levels can lead to algae blooms, turning lake water green and soupy. Low phosphorus levels indicate good water quality.

### Watershed Projects

LMRWMO studies identified internal phosphorus from lake sediment as the primary source of phosphorus in Lake Augusta.

In 2017, the LMRWMO implemented an in-lake alum treatment to improve water quality of the lake. Upon application, the alum settles to the bottom of the lake, it binds with phosphorus to form aluminum phosphate.

Treatment effectiveness will be measured by ongoing lake water quality monitoring results collected by volunteers with the CAMP program.



### 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.



**Water Monitoring Volunteer:** Thank you to Scott Deyo for monitoring Lake Augusta in 2018!

### Additional Information:

**LMRWMO Website:** <http://www.dakotaswcd.org/watersheds/lowermisswmo/>

**DNR Lake Finder:** <https://www.dnr.state.mn.us/lakefind/index.html>

**LMRWMO Contact:** Joe Barten [joe.barten@co.dakota.mn.us](mailto:joe.barten@co.dakota.mn.us) 651-480-7784