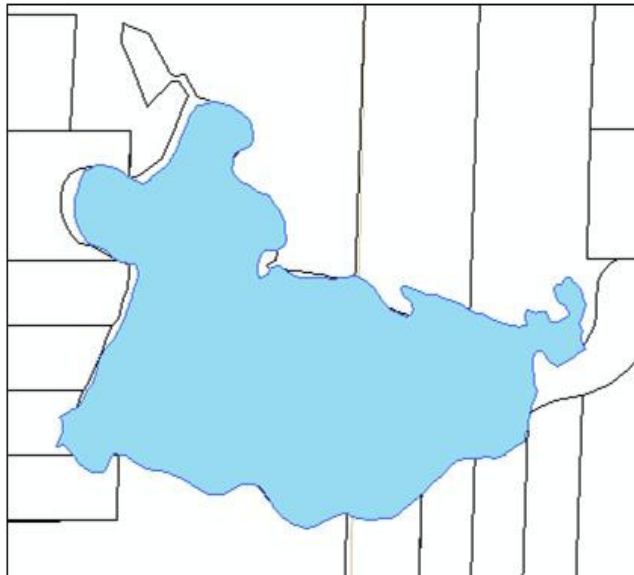


## Second Lake

### 2008 Lake Grade: B-

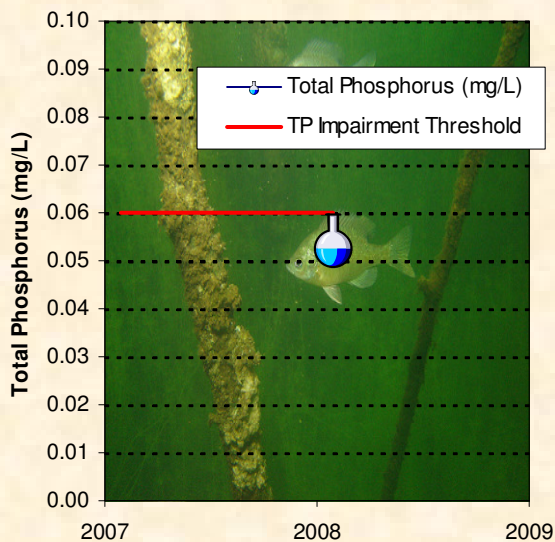
- DNR ID #: 130025
  - Municipality: City of Chisago City
  - Location: Section 32 T33N-R20W
  - Lake Size: 75 Acres
  - Maximum Depth: 15 ft
  - 100% Littoral
- Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.



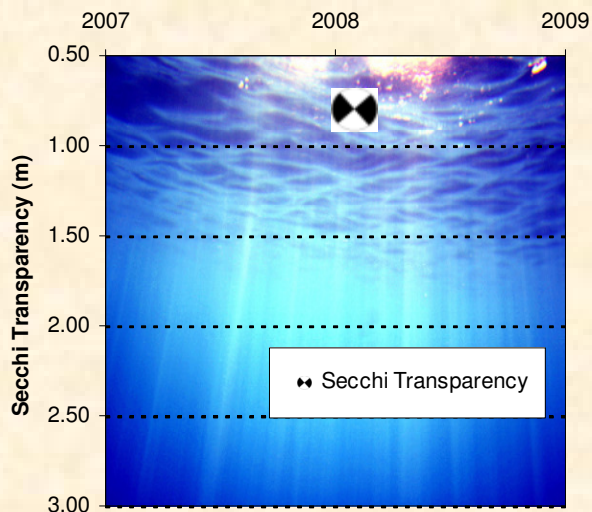
## Summary Points

- 2008 represents the first monitoring data available for Second Lake
- Second Lake was considered a eutrophic lake in 2008, based on the Carlson Trophic State Index.
- The major land use is rural/agricultural.
- The lake does stratify throughout the summer months.

### Average Summer Surface Total Phosphorus



### Average Summer Secchi Transparency



Date	Total Phosphorus (mg/L)	Chlorophyll-a (ug/L)	Total Kjeldahl Nitrogen (mg/L)	Secchi Disk Depth (m)	outlier not used in determination of summer mean
5/8/08	0.042	1.2	1.7	1.5	
5/16/08	0.043	3.6	1.7	1.4	
6/7/08	0.055	4.9	1.6	1.4	
6/13/08	0.061	8.7	1.8	1.3	
6/13/08	0.113	9.9	1.9	1.3	
7/4/08	0.049	19	1.9	0.6	
7/25/08	0.058	19	2.4	0.5	
8/8/08	0.047	13	5.7	0.5	
8/23/08	0.063	33	2.4	0.8	
9/20/08	0.128	15	2.6	0.5	
9/22/08	0.065	22	2	0.7	
<b>2008 Summer Average</b>	0.054	16.056	2.478	0.844	
Water Quality threshold is 0.04 mg/L TP or higher*					
Shallow Lake water quality threshold is 0.06 mg/L or higher*					

	High	High Date	Low	Low Date	Average
2008 Elevation (ft)	NA	NA	NA	NA	NA

\*MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) of paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence the trophic status of the lake."

### Lake Water Quality Summary

**Trophic Status**

	2008	Lake Grades								
		2008	2007	2006	2005	2004	2003	2002	2001	2000
Total Phosphorus (mg/l)	Eutrophic	C								
Chlorophyll-a (ug/l)	Eutrophic	B								
Secchi depth (ft)	Eutrophic	C								
Overall	Eutrophic	B-								