

# LOWER PRIOR LAKE: Water Quality Report Card



## Quick Facts

**Surface Area:** 956 acres  
**Watershed Area:** 18,904 acres

**Average Depth:** 13 feet  
**Maximum Depth:** 56 feet

Lower Prior Lake is the largest and most popular lake in the watershed with two public beaches and a public boat launch. Because of its large size and good water quality, people come from all around to boat and swim in Lower Prior Lake. An outlet structure is located in Grainwood Bay and is the only outlet for Prior Lake. Prior to construction of the outlet structure, there was no outlet. The outlet starts what is known as the Prior Lake Outlet Channel and flows to the Minnesota River.

## Water Quality

Lower Prior Lake has excellent water quality. This is due in part to a healthy and diverse population of aquatic plants. Over 40% of the lake bed grows aquatic plants including 15 different species of native plants. In contrast, only five native plants grow in 10% of Upper Prior's lake bed. Since Lower Prior Lake's water quality is good, the District focuses efforts on protecting and preserving the lake's good water quality with projects that reduce phosphorus runoff.

Water Quality Indicator	Risk to Water Quality	Grade (2017-2019)	History (2010-2013, 2015-2019)	Trend
<b>PHOSPHORUS</b>	Phosphorus is needed by plants and animals to survive, but can cause algae blooms if there is too much phosphorus available. In some cases, algae can produce a toxin which could cause illness or death in animals if ingested. Some sources of high phosphorus are fertilizer, human and animal waste, and soil erosion.	<b>A</b>		 <i>No Trend</i>
<b>CHL-A</b>	Chlorophyll-a is a measurement of the amount of algae in a lake. Some algae can produce dangerous toxins and when algae dies and decomposes it consumes oxygen that would otherwise be used by fish and beneficial organisms. High algal concentrations threaten aquatic life and can impede recreation and enjoyment of the lake.	<b>A</b>		 <i>No Trend</i>
<b>CLARITY</b>	Water clarity is affected by the abundance of algae or sediment in the water column. It is dependent on many factors including nutrients, temperature, wind, rain, and boat traffic. Low clarity means less sunlight to power photosynthesis in aquatic plants. These plants are beneficial for wildlife and stabilize the lake bed. Low clarity can also negatively impact a lake user's enjoyment and harm aquatic life.	<b>A</b>		 <i>Improving</i>

Grading Scale					Graph Explanation	
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>		<p>The <b>solid blue line</b> shows the annual change in water quality from 2010-2019. The lower the line, the healthier the lake.</p> <p>The District's goal is for the blue line to be below the <b>red line</b>, which is the water quality standard and the point at which the waterbody is not considered polluted.</p> <p>The <b>blue dotted-line</b> is the trend line. A decreasing trend line shows improvement in the health of the lake over time.</p>
All or most samples meet the desired threshold.	Many samples meet or are near the desired threshold.	Some samples meet or are near desired threshold.	Many samples do not meet the desired threshold.	Most samples do not meet the desired threshold.		