

Lake Lida Water Quality Study



Why Was this Study Done?

Lake Lida is a valued place to live, fish, boat, and relax. Right now, both North and South Lida meet Minnesota's water quality standards. However, more shoreline development and aging septic systems could threaten the lake over time.

This study was completed to:

- Check the current health of the lake
- Understand where phosphorus is coming from
- Identify practical actions to protect water quality for the future

The study was led by the Lida Lakes Improvement District (LLID) with help from a Minnesota Board of Water and Soil Resources grant and was completed by Houston Engineering, Inc. in 2026.

Study Results

What Did We Learn?

The study recommends a 5% phosphorus reduction over 10 years, which is enough to:

- Reduce algae
- Improve water clarity
- Protect the lake long-term

Modeling shows this could improve clarity by **about one foot** when combined actions are taken.

What Did the Study Find?

Good News: Water quality in both North and South Lida is currently improving.

Concerns for the Future:

- More algae growth
- Cloudy water
- Less oxygen for fish

What is Phosphorus and Why Does it Matter?

Phosphorus is a nutrient found in soil, fertilizer, wastewater, and organic matter. Too much phosphorus in lakes can cause:

- More algae growth
- Cloudy water
- Less oxygen for fish

Even small increases over time can make a noticeable difference.

Where Does Phosphorus Come From?

Some phosphorus comes from the air and can't be controlled locally. The good news is that several important sources **can** be reduced:

- **Older septic systems** near the lake
- **Shoreline erosion** and cleared vegetation
- **Runoff from developed areas** (lawns, driveways, roads)
- **Agricultural runoff** from nearby fields



What Did We Learn About Septic Systems?



- There are about **685 septic systems** around North and South Lida
- About **129 (19%)** were installed before 1990
- Older systems (30+ years) are more likely to leak nutrients into the lake



Recommendations: Encourage voluntary inspection and replacement of the oldest

systems over the next 10 years. Cost-share funding may be available through Otter Tail County.

What About Farms and Forests?



- Only about **5-6%** of the watershed is agricultural or developed land
- Small improvements in the right places can have big benefits

Recommended Actions:

- ✓ Cover crops, buffer strips, and other farm practices
- ✓ Protect forests and natural land near the lake

Technical and financial help is available through the West Otter Tail Soil and Water Conservation District (SWCD).

What Did We Learn About Shorelines?



- North Lida has a high number (54%) of shorelines with turf grass and little natural vegetation
- South Lida has more natural shoreline, in part due to Maplewood State Park

Natural shorelines (trees, bushes, wildflowers):

- Reduce erosion
- Filter runoff
- Protect fish and wildlife habitat



Recommendations:

Encourage voluntary planting of shoreline buffers. Technical and financial help is available through the West Otter Tail Soil and Water Conservation District (SWCD).

What Can Lake Residents Do?



Every small step helps:

- ✓ Look up the age of your septic system and schedule inspections
- ✓ Keep natural plants along the shoreline
- ✓ Reduce fertilizer use near the water
- ✓ Direct runoff away from the lake
- ✓ Consider shoreline restoration projects

What Happens Next?

The LLID will focus on **education, outreach, and partnerships** to help residents connect with available programs and funding. This study positions Lake Lida to **stay clean, clear, and healthy for future generations**.

Have questions or want to get involved? Contact the Lake Lida Lake Improvement District (<https://www.lakelidalid.com>) or the West Otter Tail SWCD (<https://www.wotswcd.org>) for more information.

