

Spent Lime Study in Lino Lakes: Summer, 2021

New research to balance nutrient levels in lakes and ponds

What's the project?

This research project will take place at a pond located just north of Ash St. in Lino Lakes. The aim is to find economical ways to keep the phosphorus in bottom sediments from releasing into pond water. If successful, what we learn may be applied to other storm ponds and water bodies across Minnesota and beyond.

Why this pond?

The Ash St. pond rests between Amelia and Wilkinson Lakes. It's a man-made pond from the 1980's located on a creek that connects the two lakes. Its size and depth make it a good fit for the project. Despite being a natural pond, the findings will be comparable to stormponds that are common in more developed neighborhoods. Stormwater ponds are a valuable tool for settling pollutants such as sediment before they get to a waterbody. Over time however, they can require maintenance due to leaking sediment or excess nutrients to downstream lakes, wetlands, or streams.

What is spent lime?

Spent lime (calcium carbonate), a byproduct of the process for treating drinking water, is typically disposed of by being applied to farm fields as fertilizer. In both field application and in water, spent lime has been studied to be safe for the environment. The substance has been shown to reduce phosphorus release by forming mineral compounds that trap phosphorus in pond sediments and out of the water.

What will be the result?

The research team hopes to solve an ongoing issue facing stormponds: The dreaded dredge. Dredging polluted sediment can improve pond performance, but it's expensive—and phosphorus release may start occurring long before a pond is filled with sediment. Application of chemicals like alum and iron can control phosphorus release, but like dredging, is also expensive.

In summer, 2021, a spent lime slurry will be sprayed into the pond from the shore at targeted doses. It will quickly sink to the bottom and treat the sediment. Depending on results and funding, sampling may continue into 2022.

A similar study will take place this summer in Saint Paul, in Wakefield pond, which contributes water to Wakefield Lake. Spent lime application in both ponds has been approved by the Minnesota Pollution Control Agency and is determined to be safe for fish and other wildlife.

Visit vlawmo.org/projects for updates and results as they're made available from project partners (see right).

Questions? Contact principal investigator Greg Wilson at gwilson@barr.com or 952-832-2672.



The Ash St. pond is located between Amelia and Wilkinson Lakes. The research project holds potential to help improve impaired waterbodies such as Wilkinson Lake.

Project partners:



Project partners include Barr Engineering Co., Ramsey-Washington Metro Watershed District, Vadnais Lake Area Watershed Management Organization, St. Paul Regional Water Services, and the cities of Maplewood and White Bear Lake (spent lime providers). Funding is provided by the University of Minnesota's Water Resources Center, through the Clean Water Land and Legacy Amendment.