CLFLWD
WATERSHED DISTRICT

# FOREST LAKE ALUM TREATMENT

## Questions & Answers

***Alum is a non-toxic water quality treatment that will result in a cleaner and clearer Forest Lake. This document provides answers to some frequently asked questions about the Forest Lake Alum Treatment.***

### What is an alum treatment?

An alum treatment is a common management practice used to improve water quality in lakes that have excess phosphorus and algae growth. Non-toxic alum treatments have been used to improve lake water quality for decades including in nearby Moody and Shields Lakes.

### What is phosphorus?

Phosphorus is a naturally occurring nutrient that is essential to all living things. Certain human activities, such as development, agriculture, fertilizers, and erosion, can contribute additional phosphorus to the environment. Excess amounts of phosphorus in our water ways can cause significant algae growth. One pound of phosphorus can support up to 500 pounds of algae growth.

### Where does phosphorus come from?

Phosphorus enters the water in two ways:

- Externally from the surrounding landscape such as development, agriculture, fertilizers, and erosion.
- Internally from the sediments on the bottom of the lake. Phosphorus already in the lake settles to the bottom and re-releases during seasonal changes. Alum treatments target the internal phosphorus.

### Do both sources of phosphorus (internal & external) get addressed?

Yes. The Watershed District has worked with many partners to construct water quality projects in the landscape surrounding Forest Lake for more than a decade. These projects have led to a significant decline in phosphorus entering the lake and have allowed the watershed district to shift its focus to addressing the internal phosphorus with this alum treatment.

### How does alum address phosphorus?

When applied to a lake, liquid alum forms a white, cotton-ball looking substance called flock. The alum flock attracts and binds phosphorus in the water. As it binds to phosphorus, the flock sinks to the bottom of the lake and forms a one-inch thick layer on the bottom. Once it has sunk to the lake bottom, it compresses and creates a seal that prevents phosphorus in the sediment from re-releasing. On average, an alum treatment is capable of binding 70-90% of the internal phosphorus load in a lake.

### Are alum treatments safe?

Yes. Alum is safe for people, pets, plants, and wildlife. District staff and engineers will be actively monitoring the lake during the application to ensure the proper dosing is being applied and that the pH of the water remains stable. Non-toxic alum treatments have been used to improve lake water quality for decades including in nearby Moody and Shields Lakes.

**One pound of phosphorus can support up to 500 pounds of algae growth!**

## When will the alum treatment occur?

Mid-September. This time of year has the most favorable conditions for a successful alum treatment.

## Where will the alum be applied?

The alum treatment will be applied only to Forest Lake's middle basin in areas deeper than 15 feet. However all three basins will see benefits from the alum treatment.

The application barge will launch and refuel from the Hagberg public access on the east basin. The Watershed District has obtained a permit from the DNR to utilize the Hagberg access for this project to ensure that public use of the access is minimally affected.

## Will recreation be restricted?

No. There will be no restrictions on recreation before, during, or after the alum treatment. However, boaters will be asked to maintain a safe distance from the application barge.

## What will the application look like?

The alum treatment will be conducted by licensed professionals utilizing a specialized barge. During alum applications, it is common to see an immediate change in water clarity within the application area. In the aerial photo below of the Shields Lake Alum Treatment, it is easy to see the flocculent trail extending behind barge. These flocculent trails will not last more than a few hours. As the flocculent binds to the phosphorus in the water column and sinks to the bottom, it will slowly disappear from view.

## What will Forest lake look like after the treatment?

Forest lake will see a reduction in high-intensity algae blooms and improved water clarity.

## Will there be an impact on aquatic plants?

As water clarity improves, it is likely that there will also be more plant growth. However, it is not expected to be a significant increase in plant abundance or distribution. It is important to remember that aquatic plants play a significant role in healthy lake ecosystems. They provide oxygen, food, and shelter for fish and other aquatic animals.

## How long will the benefits of the treatment last?

An alum treatment can last 10–15 years or even longer, depending on the amount of external phosphorus entering the lake.

The watershed district will monitor the effectiveness of the alum treatment throughout 2024 to determine if a second application is needed in 2025. Split applications are a common for alum treatments to ensure effectiveness and longevity.

## How can we make the treatment last longer?

The effectiveness of the treatment can be extended by limiting the amount of phosphorus entering Forest Lake. While the watershed district implements large water quality projects to target this phosphorus, residents can also make a positive impact on the health of Forest lake by following some best practices:

- Maintain or restore native shoreline buffers
- Keep yard waste out of ditches, wetlands, streams, and lakes
- Pick up pet waste

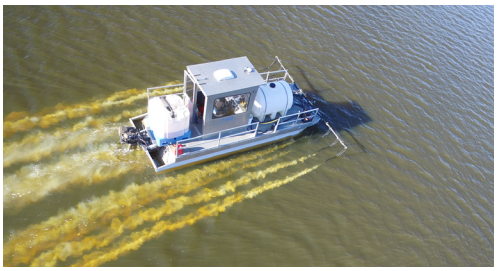
By being good stewards of our watershed, we can reduce external phosphorus and prolong the benefits of the alum treatment.

## How can we learn more?

The Watershed District will be hosting several Alum Treatment information sessions throughout the summer. Follow @clflwd on social media to be notified of upcoming events.

Learn more about the watershed district and their other projects at www.clflwd.org

**Watch the public hearing presentation on YouTube!**



**Left:** Aerial photo of alum application barge on Shields Lake. The Shields Lake Alum Treatment reduced phosphorus loading to Forest Lake by an estimated 500 lbs/yr. **Middle:** Pre alum treatment on Moody Lake. **Right:** Post alum treatment on Moody Lake. The Moody Lake Alum Treatment reduced phosphorus loading to Bone Lake by an estimated 324 lbs/yr.

**Interested? Follow us on social media @clflwd for updates or learn more at https://tinyurl.com/FLalum**