



# Lake George Water Quality Improvements

## Water Quality

Several projects and practices were previously implemented to improve Lake George's water quality including a sediment pond (Little George), native plantings, rain gardens, and shoreline improvements.

However, water quality concerns still exist. Lake George is included on Minnesota's Impaired Waters list for water quality concerns including clarity, elevated phosphorus, and excessive algae blooms. Algae blooms can render the lake green in color and cause an unpleasant odor.

The City of St. Cloud will be treating Lake George with aluminum sulfate (alum) to improve water quality.

The first treatment is planned for late June.

## What causes algae blooms?

Algae, like all living things, require nutrients to grow. Phosphorus is an important "food" for algae growth. Simply, phosphorus causes increased algae, which diminishes water quality.

## Where does phosphorus come from?

Phosphorus enters a lake in two ways:

- Internally from the sediment on the bottom of the lake. This phosphorus is periodically disturbed and released back into the water column.
- Externally from runoff carrying organic matter such as pet waste, lawn clippings, and leaves.

## Do both phosphorus sources need controlling?

Yes. Alum is used most often to control internal phosphorus. The City is also working on projects to reduce external phosphorus inputs.

## Why treat with alum?

Alum treatment is a safe, low-cost, effective, and long-term method for controlling phosphorus, minimizing algae growth and improving water quality.

## What does alum do?

Alum binds with phosphorus in the water column and will settle to the bottom of the lake. This makes phosphorus unavailable to algae, preventing excess blooms and improving water clarity.

## Is alum safe?

Yes. It is the most widely used internal lake treatment available. Alum treatments have been proven safe for fish, wildlife, plants, and other water organisms. Plant and animal diversity typically increases in most alum-treated lakes.



Algae Bloom on Lake George



## How long does an alum treatment take?

Four treatments are currently planned for Lake George. These treatments will occur monthly from June to September. Each individual treatment will take no longer than one day to complete. Normal lake activities can resume the following day.

## How soon will results be seen?

Improvements in Lake George water clarity will be seen almost immediately. Algae growth will decline after each treatment and reduced algae blooms should be noticeable within one year.

## How long will the alum treatment last?

An alum treatment can last anywhere from 15 to 20 years. As more phosphorus enters the lake, additional alum treatments may be needed to maintain water quality.

## Will park activities be affected?

In-lake recreation will not be allowed on the day of treatment, but will resume the following day. Other park activities will not be affected.

## Is alum expensive?

Alum is often only a fraction of the cost of other watershed management programs.

## Is alum an algicide?

No. An algicide kills algae present at the time of application. An alum treatment does not kill algae, it simply reduces the availability of phosphorus, the food source for algae.

## Ongoing Monitoring

Sediment samples were collected from the bottom of Lake George to determine phosphorus concentrations. This, combined with years of water quality data, determined alum to be the best in-lake treatment option to meet Lake George's water quality goals.

Water samples and data will be collected regularly to ensure proper alum dosing and to measure improvements. Fish, aquatic plant and organism surveys will be conducted to ensure treatment success.

## Pollution Prevention

Phosphorus can be prevented from entering Lake George by implementing stormwater best management practices (BMPs). These practices include cleaning lawn clippings and leaves out of streets and gutters, picking up after pets, removing debris from storm drains, and installing rain gardens.

For more information on how You can prevent stormwater pollution, visit [H2YouMN.com](http://H2YouMN.com).

## Tentative Timeline

Data Collection	May - Oct
Treatment #1	June 18 or 25
Treatment #2	July 30
Treatment #3	Aug 27
Treatment #4	Sep 24

## Additional Questions? Please contact:

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