Date: March 2025

From: The Lakes HOA Board

To: All Lakes HOA Homeowners

Subject: New Comprehensive Plan to Improve and Protect Our Community Lakes

Our community's stormwater retention lakes are an important feature of our neighborhood, adding to its beauty and providing ecological benefits. However, due to a lack of aggressive, systematic management over the past forty years, our lakes have continually deteriorated, and we are now experiencing recurring algal blooms that negatively impact water quality and aesthetics.

This past summer the community experienced severe problems with water clarity, algal blooms, and unpleasant odors. Most of these issues were caused by a combination of increased nutrient loads in the lakes and a lack of proactive actions using best practices and treatment technologies.

To restore and maintain the health of our lakes, the Homeowners Association (HOA) is implementing a comprehensive, multi-pronged management strategy, as no single approach can fully control the complex factors that contribute to algal blooms and poor water clarity.

What Is Causing The Problem?

Algal blooms are caused by excessive nutrients, particularly phosphorus and nitrogen, entering the lakes from surrounding properties and internal sources within the lake sediments. Once in the water, these nutrients fuel the uncontrolled growth of algae, leading to poor water clarity, unpleasant odors, and potential harm to aquatic life. Increasing sediment levels year over year in the lake bottoms add more fuel sources that in turn promote heavier algae growth.

To effectively manage this issue, we will be employing a combination of treatments and homeowner-led prevention strategies.

What Are Our Water Quality Improvement Goals?

- Reduce nutrient loads entering the lakes
- Improve water circulation and oxygenation to create a healthy ecosystem
- Lock-up phosphorus that is a major food source for algae
- Reduce lake bottom sediment levels that fuel plant growth
- Use algaecides sparingly in the short-term to control algae outbreaks; the long-term goal is to eliminate this dependency

What Actions Will Be Taken?

1. **EutroSorb Treatment** – This treatment will be applied by the company AquaTechnex to remove reactive phosphorus, the primary driver of algal blooms. While effective in the

short term, additional phosphorus may still enter the lakes from external sources or be released from the lake bottom sediment over time.

2. **Algaecide Application (if necessary)** – If algal blooms persist despite phosphorus reduction efforts, AquaTechnex will apply an algaecide to control excessive algae growth. This will be used cautiously and only as needed.
3. **Fluridone Treatment for Vegetation Control** – At the beginning of the spring season, AquaTechnex will treat the lakes with fluridone to reduce excessive aquatic vegetation, which has become overgrown in recent years.
4. **MuckBiotics Treatment to Reduce Lake Sediment Levels** – Advanced probiotic pellets will be spread across all the lakes to rapidly populate and establish a healthy microbiota at the lake bottoms to accelerate the digestion of organic matter and improve water quality and clarity.
5. **Aeration Installation** – A combination of surface and bottom aeration systems will be installed to improve oxygen levels in the water, preventing anoxic conditions that can lead to the release of phosphorus from sediments. This will help reduce internal nutrient loading and promote a healthier aquatic environment. Timing of these installations will be dependent on available electrical power sources.
6. **Manual Removal of Shoreline & Creek Vegetation** – We will be implementing more aggressive controls over non-native plant species and weeds in the creeks and along the rockeries. This will reduce the sediment loads in the lakes which provide nutrients for algae growth.

What Is Your Role As A Homeowner?

While these lake treatments will address existing water quality issues, homeowner actions are essential to preventing further nutrient pollution and heavy phosphorus loads. Here is where we need your help and cooperation.

- **Limit Fertilizer Use** – If fertilizer is necessary for your lawn or garden, choose *phosphorus-free* options and apply conservatively and only as needed.
- **Maintain a Buffer Zone** – Plant native vegetation along shorelines to help filter out nutrients before they reach the water. There is a 10-foot maintenance easement that is essential to lakes' maintenance. Homeowners should cut back plants, shrubs, and trees at least to the exterior edge of the rockery so that they do not overhang, enter the lakes or impede access to the easement. Vegetation that has invaded the rockery should be removed, unless there is significant root intrusion that could alter the integrity of the rockery. In these cases, homeowners should coordinate with the Board before removal.
- **Properly Dispose of Yard Waste** – It is a violation of the CC&Rs to dump anything into the lakes. Leaves, grass clippings, or branches cannot be dumped into the lakes nor can homeowners store yard waste near the lakes or creeks, as these materials decompose and release nutrients into the water.
- **Pick Up Pet Waste** – Pet waste contains nitrogen and phosphorus that can wash into the lakes and storm drains during rain events.
- **Minimize Stormwater Runoff** – Consider installing rain gardens, permeable surfaces, or rain barrels to reduce the amount of nutrient-rich runoff entering the lakes directly or into the storm drains.

- **Keep Vegetative Debris Off the Streets** – Promptly clean up fallen leaves, twigs, and grass clippings that can wash into the lakes or decompose and wash nutrients into the storm drains.

The Association has a policy regarding homeowner responsibility for damage to the lakes which is posted on the website – www.thelakesmi.com under the "Lakes Governing Documents" tab.

What Will This Program Cost?

This is not a one or two year investment to improve our lakes water quality and return them to their original condition. Rather it is a new program that will require year-over-year diligence and investment to reach and maintain a new standard of water quality. Combined with the infrastructure and maintenance practices we have implemented for our well, recirculation pump and storm drain system, these new lakes management activities are expected to add significant expense to our annual Operations Budget.

Our current Operations Budget for lakes maintenance averages ~$31,000 per year. Our estimates for the activities highlighted above will require ~$90,000 in annual recurring lakes maintenance, a $60,000 increase over our current expense rate.

There will also be a one-time increase in our Reserve Fund expenditures to fund the required aerations systems and electrical power installations. The amount of this expenditure is still being finalized by the Lakes Committee based on the optimal aeration configuration and motor/pump specifications for each lake and the needed power sources.

The HOA Board is currently working on both the short-term funding needs to implement this program immediately, as well as the long-term budget and funding to maintain the desired level of water quality in future years to come. All homeowners will receive an update on our HOA financials and funding plans once the Reserve Fund expenditures are known.

A Long-Term Commitment

This comprehensive lake management plan recognizes that addressing algal blooms requires multiple strategies working together. By combining scientifically backed treatments with responsible homeowner practices, we can restore and maintain the beauty and health of our lakes for years to come.

In closing, the HOA would like to thank Richard Turner, Mike Bender, and Dan Taylor on the Lakes Committee for their time, research, and diligence in creating this lake management plan. They have created a strong foundation which we can build upon based on continued testing, measurement, and best practices.

We appreciate your support and cooperation as we embark on this new lake management program. If you have questions or would like to learn more about the science or how you can help, please reach out to a member of the HOA Board or the Lakes Committee. You can also direct an email to theboard@thelakesmi.com .