



December 22, 2022

To: The Honorable Scott Marks, Mayor of Medicine Lake; Chris Heim, Mayor-elect of Medicine Lake

From: Marge Beard, Commissioner, Three Rivers Park District

Re: Medicine Lake Access, Invasive Species and Water Quality

Dear Mayor Marks and Mayor-elect Heim:

Thank you for the opportunity to discuss concerns of City of Medicine Lake residents regarding boat access, invasive species and water quality. Three Rivers strives to be a good partner as we share a valuable resource in Medicine Lake. I wanted to follow up and provide more information regarding some of the issues that have been raised. I've organized the information by topic below.

Difficult for large watercraft to be removed from Medicine Lake during low water levels.

The public water access within French Regional Park provides recreational opportunities for anyone who wants to use it to enjoy the lake. In conjunction with access improvements in 2014, the area immediately in front of the boat ramp was dredged to make it easier for boaters to launch their watercraft. We recognize that the channel from the boat access to open water is shallow during low water periods, which can make it difficult for larger boats to access the lake. We understand there was a request to excavate a channel through the sandbar to provide deeper water access from French Regional Park to the main portion of the lake.

We have explored this option and believe this type of excavation project would be costly, complex and the benefit would be temporary. Project estimates including permits, contract dredging, and off-site dredge material placement could exceed \$50,000 (based on recent dredging project on Lake Independence).

Based on years of experience of working on Medicine Lake, as well as other metro lakes, we believe any dredging would only provide a temporary benefit. Prevailing winds from the south would re-suspend sand/silt material through wave action and deposit it back into the excavated area. Our water resource staff has data that indicates that Medicine Lake completely mixes due to sustained wind-induced wave action. The entire North shoreline of Medicine Lake is shallow (swimming beach area) due to deposited sand/silt over time.

An alternative solution is to explore the reutilization of the West Medicine Lake access for lakeshore residents to launch or remove their watercraft under low water conditions.

The Plymouth City Council Resolution (No. 2020-104) approving closure of the West Medicine Lake boat launch include the following:

NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF PLYMOUTH, MINNESOTA that:

1. The closure of the West Medicine Lake boat launch is approved and staff is directed to work with Three Rivers Park District staff on the following items:
 - d. Discuss the feasibility of the City opening the West Medicine Lake Boat Launch should low water conditions prevent residents from utilizing the French Regional Park boat launch.

We feel that this is the situation that lake residents are encountering, and the West Medicine Lake access can meet the needs of lakeshore residents without incurring significant cost or increasing the risk of introduction of new aquatic invasive species.

We would be happy to partner with the City of Medicine Lake to approach the City of Plymouth to discuss the feasibility of re-opening the access, under low water conditions. For discussion, this alternative could be limited in frequency and restricted to lakeshore residents. In addition, the Association of Medicine Lake Area Citizens (AMLAC), should be included in the conversation

Lessons learned regarding the spread of Zebra Mussels in Medicine Lake

There are many ways that aquatic invasive species can be introduced or spread. As such, it is very difficult to manage and control all potential sources that can cause a new AIS infestation. As an example, Zebra mussels were first discovered on a homeowner's dock on the southern end of Medicine Lake. Surveys have indicated that zebra mussels were primarily found on the southern end of the lake but have now spread to other parts of the lake. Park District staff did not find any zebra mussels at the boat access at French Regional Park when they were first discovered in 2017. It is difficult to know how zebra mussels were introduced into Medicine Lake, but the data suggests that the zebra mussel infestation could have been introduced by someone installing a dock on the southern end of the lake or may have come in from another access on the south end of the lake. In the case of Starry Stonewort, it was most likely introduced to Medicine Lake on a boat or boat trailer since staff are primarily finding it near the French Regional Park boat access.

The Park District has taken extensive measures to reduce the risk of new infestation of AIS. We have a watercraft inspection program that inspects boats and trailers both entering and exiting the public access within French Regional Park. Three Rivers hires approximately 120 seasonal staff to conduct watercraft inspections across the Park District each season. This staffing level equates to approximately \$120,000 per year in staffing costs, with approximately \$50,000 funded through grants or cost-share partnerships.

AIS prevention efforts by the Park District on Medicine Lake account for nearly a quarter (24%) of all AIS efforts districtwide. Inspection hours are based on the busiest times at the boat access, and watercraft inspectors are on-site from 7 AM to 8 PM. When fishing tournaments occur on the lake before 7 AM or after 8 PM, Three Rivers inspectors are present during those hours. We provide a watercraft decontamination station to assist with removal of AIS. Bassett Creek Watershed Management Commission provides funding to supplement staffing costs. With additional funding from other agencies or organizations, hours of inspection at the access could be expanded.

Aquatic invasive species management

- Curlyleaf Pondweed. Three Rivers Park District pays for 17 percent of the total costs for curlyleaf pondweed treatment on Medicine Lake, in partnership with the Bassett Creek Watershed Management Commission. Three Rivers owns 17 percent of the shoreline on Medicine Lake, and the amount of shoreline owned is used to determine cost-share

contributions for similar curlyleaf pondweed treatments on other lakes. Three Rivers staff conduct pre-treatment surveys to identify treatment areas and post-treatment surveys to evaluate effectiveness.

- Starry Stonewort. Starry stonewort treatments have been a collaborative effort between the Minnesota Department of Natural Resources (MnDNR) and Three Rivers Park District. Six starry stonewort treatments were conducted in 2021 & 2022, with Three Rivers funding all of the treatment costs (approximately \$1,500 per treatment). Three Rivers completes eight to 10 surveys per year for starry stonewort.
- Zebra mussels. Park District staff conduct zebra mussel surveys every year on the lake with occasional assistance from MnDNR staff. Staff monitor current science regarding zebra mussel control efforts and if research identifies effective methods for controlling zebra mussels, staff would welcome opportunities to work with MnDNR and Bassett Creek Watershed Management Commission staff to implement new and innovative strategies to control them.

Water Quality Status

There has been significant improvement in water quality since 2016 with respect to both total phosphorus and clarity. The Lake is meeting clarity standards and is close to meeting phosphorus standards over the past 5 years. The decrease in phosphorus concentration is most likely due to the implementation of watershed Best Management Practices (BMPs) from the municipalities. The City of Plymouth has spent a considerable amount of money to reduce the nutrient loading from the Plymouth Creek Watershed, which accounts for approximately 70 percent of the nutrient load to the lake. There have been a lot of other projects that have been implemented such as Wood Creek stabilization, Mt. Olive channel stabilization, and channel stabilization project downstream from the shopping center complex. The improvements in clarity could be a combination of a decrease in phosphorus concentrations as well as an increase in zebra mussel density since they were first discovered in 2017.

The Park District contributes significantly to the health of Medicine Lake

- Water quality monitoring conducted every year on a bi-weekly schedule.
- Aquatic vegetation surveys on the lake every year- spring and fall surveys (2 surveys)
- E. coli level monitoring for the French Regional Park swimming beach as well as the City of Plymouth swimming beaches on a weekly basis.
- Monitoring watershed water quality entering the lake through a contract with the City of Plymouth.
- Completed the Medicine Lake total maximum daily load study to improve water quality on the lake and collaborate with cities and the Bassett Creek Watershed Management Commission to implement best management practices in the watershed to improve water quality.
- An alum treatment is recommended for Medicine Lake to improve the water quality of the lake and remove the lake from the Impaired Water's List. Three Rivers Park District is working with Bassett Creek Watershed Management Commission to identify an alum treatment as a future capital improvement project with their watershed management plan.

We appreciate the City of Medicine Lake's interest and concern for the health of the lake as well as

recreational access for your residents. Medicine Lake is a wonderful public resource, and it takes everyone to help protect it for future generations.

Please reach out to me if you'd like Three Rivers Parks support for any conversations with the City of Plymouth in regards to the potential opening of the West Medicine Lake access.