



Bassett Creek Watershed Management Commission

MEMO

To: BCWMC Commissioners and Alternate Commissioners
From: Laura Jester, Administrator
Date: October 9, 2023

RE: Technical Advisory Committee Recommendations

The BCWMC Technical Advisory Committee (TAC) met on October 4, 2023 to discuss several topics.

Attendees at the TAC meeting included:

City/Partner	Technical Advisory Committee Members and Others
Crystal	Mark Ray
Golden Valley	Eric Eckman
Medicine Lake	Susan Wiese
Minneapolis	<i>Absent</i>
Minnnetonka	Sarah Schweiger
New Hope	Nick Macklem
Plymouth	Ben Scharenbroich
Robbinsdale	Richard McCoy
St. Louis Park	Erick Francis
Others	Rachael Crabb, Minneapolis Park and Rec Board; Administrator Laura Jester; Commission Engineer Karen Chandler; Alternate Commissioner Polzin

1. Considerations for Future Dredging Projects

At their meeting September 6th, the TAC reviewed the Lagoon Dredging Project including bidding specifications, measurements used for payment, means and methods of the contractor, and lessons learned overall. The goal of the review was to develop best practices for bidding and implementing pond dredging projects – not only by the BCWMC, but by other entities as well. A refined list of items to consider for future dredging projects was briefly reviewed at the October 4th meeting and was tabled in order to allow TAC Chair Ray to gather input from other entities on the topic. The TAC will provide a full list of recommendations at a future Commission meeting.

2. Recommendations for Next Steps on Lagoon Dredging Project

The TAC considered whether to recommend that the Commission complete the Lagoon Dredging Project by dredging to the originally designed 6-foot depth, whether to leave the project as-is, or even consider dredging a different lagoon (such as Lagoon G or Lagoons A, B, or C) in conjunction with additional dredging. Staff reported that when the current project is completed, there will be approximately \$1.56M remaining in the project budget. They reviewed Table 1 for cost benefit analyses from the feasibility study compared to the completed project and a potential future project.

Table 1. Cost benefits from the feasibility study compared to the completed project and a potential future project.

Project costs, benefits	Feasibility Study Alternative:		Completed Project	Future Project
	6-foot depth	4-foot depth	Approx. 3.7-foot depth	Complete to 6-foot depth
Dredged volume	39,600 cubic yards	27,800 cubic yards	25,650 cubic yards	13,950 cubic yards
Project cost*	\$3,145,000	\$2,247,000	\$1,428,000	\$1,200,000
Total phosphorus load reduction	600 lb/year	390 lb/year	360 lb/year	Incremental: 240 lb/year
Cost/benefit	\$270/lb TP/year	\$300/lb TP/year	\$210/lb TP/year	\$260 lb/TP/year

Notes:

- “Project cost” includes engineering, design, permitting, legal. No other expenses are expected for a future project.
- The estimated cost for a future project does not include dredging Lagoons A, B, C, or G (noted as options above).
- The estimated cost for a future project is conservative but may be low if contractors bid the project using special equipment like a hydraulic dredge. However, even if the project cost was \$1.5M, the cost benefit is still low: \$320/lb/TP/year

The TAC discussed the merits and drawbacks of the various project options noted above. Ultimately, it was determined that the TAC wished to weigh a potential future lagoon project against other potential CIP projects and to use the CIP scoring matrix for a full comparison of all potential projects as is normally done with potential CIP projects. An important note is that it is too late to bid and contract for dredging the lagoons this winter, so there is time to decide on the best course of action for a potential project in the winter of 2024/2025 or later.

Recommendation: The TAC recommends that the Commission consider a potential future project to complete the Lagoon Dredging Project and/or dredge Lagoon G (or Lagoons A, B, and C) in conjunction with normal review and ranking process of other potential CIP projects during development of the 5-year CIP early in 2024.

3. Options for Use of New WMWA Education Coordination

Administrator Jester explained that through a new Hennepin County position (filled by Grace Barcelow), the West Metro Water Alliance has a half time education coordinator to significantly augment WMWA's capacity for education and outreach programming. She noted that each of WMWA's four partner watersheds, including BCWMC, can receive time from the coordinator to concentrate on a project or workshop of the watershed's choosing. She reported that some watersheds are using Grace's time to coordinate a special project (like raingarden installation) with a multi-family housing complex. Others are using Grace's time to coordinate a workshop (like a shoreline restoration workshop). She noted that another possibility that likely fits BCWMC's current needs, is to provide outreach to targeted properties using the Low Salt, No Salt MN campaign materials and tools. She noted this work could be concentrated in the watershed of a specific waterbody and would work best with faith-based communities, homeowners associations, schools, residential treatment facilities, etc.

TAC members agreed that Metro Blooms is already doing excellent work with large projects in underserved communities, often in partnership with BCWMC and with some BCWMC funding or pass-through grant funds. Additionally, shoreline restoration workshops could be hosted by member cities or BCWMC through the existing Blue Thumb Program. Thus, the TAC agreed that engaging particular properties through the Low Salt, No Salt MN program is a good idea and fills a current gap in BCWMC education and outreach activities. Administrator Jester noted that in addition to using Grace to facilitate outreach, there are funds available to provide equipment upgrades or other physical tools or materials associated with reducing chlorides in the targeted area.

Recommendation: The TAC recommends that the Hennepin County educator's time allocated to the BCWMC be used for outreach to targeted properties in the Parkers Lake subwatershed using the Low Salt, No Salt Minnesota campaign materials. Plymouth staff would be requested to help find potential properties for outreach.

4. Protocol for Monitoring and Analysis of Suspected Blue Green Algae Blooms

At the TAC meeting in September, staff reported that the BCWMC was alerted to multiple potential blue green (BG) algae blooms in lakes and ponds over the summer (the drought was a significant factor). Staff noted that because some BG algae blooms could pose health threats to humans and pets, there is often a request from a resident for the BCWMC to sample and confirm/deny the bloom. Further, staff reported that with no policy or protocol in place, responses to potential blooms have not been consistent over the years. It is unsustainable (financially and staffing-wise for either BCWMC or cities) to sample every suspected BG algae bloom. TAC members noted that BG algae blooms are ephemeral, spotty, and unpredictable. Even more noteworthy is that lab analyses to determine actual toxin levels of potential harmful algae blooms takes days or weeks.

At the October meeting, the TAC reviewed a potential protocol for sampling and analyzing potential blooms that is used by the Nine Mile Creek Watershed District. Staff recommended adoption of the same or similar protocol. Staff noted that the protocol allows member cities to that BCWMC monitoring staff make a special trip to a lake or pond to sample and then analyze potential BG algae blooms at that city's expense (through a reimbursement to the BCWMC; current estimated cost for one sampling trip and analysis = \$750.)

Rachael Crabb with the Minneapolis Park and Rec Board (MPRB) noted that MPRB staff are trained to use a visual monitoring tool for identifying suspected BG algae blooms that rates the potential for a harmful algal bloom. Administrator Jester will send the training materials to member cities for their use, if desired.

Recommendation: The TAC recommends the protocol for sampling potential blue-green algal blooms along with identification, enumeration, and communication actions found on the following pages.

BCWMC's Protocol for Blue-Green Algal Bloom and Potential Harmful Algal Bloom Monitoring & Analysis

The BCWMC's testing protocol for a potential blue-green (BG) or Harmful Algal Bloom (HAB) will be implemented through the BCWMC's normal routine lake monitoring program and follows recommendations of the World Health Organization (WHO). When BCWMC monitoring staff observes algal scum on a lake they are currently monitoring, staff will take a water sample of the potential bloom (even if the bloom is occurring at a location on the lake where samples aren't typically gathered) and will expediate algal identification and enumeration. If the analysis determines blue-green cell counts exceed WHO thresholds (Table 1) for low, moderate or high probability of health risk to recreational users, staff will notify the proper entities (e.g., city, lake association, MPCA and MDH) of the potential health risk. Member cities may opt to post signs at the lake's access point. BCWMC will not sample a lake they are not currently monitoring unless requested by a member city and at that city's expense. If the lake is not part of the BCWMC normal monitoring (regardless if it is a year to be tested or not), then the decision to test is up to the member city and at the member city's sole expense. Below is a flowchart detailing the BCWMC's protocol.

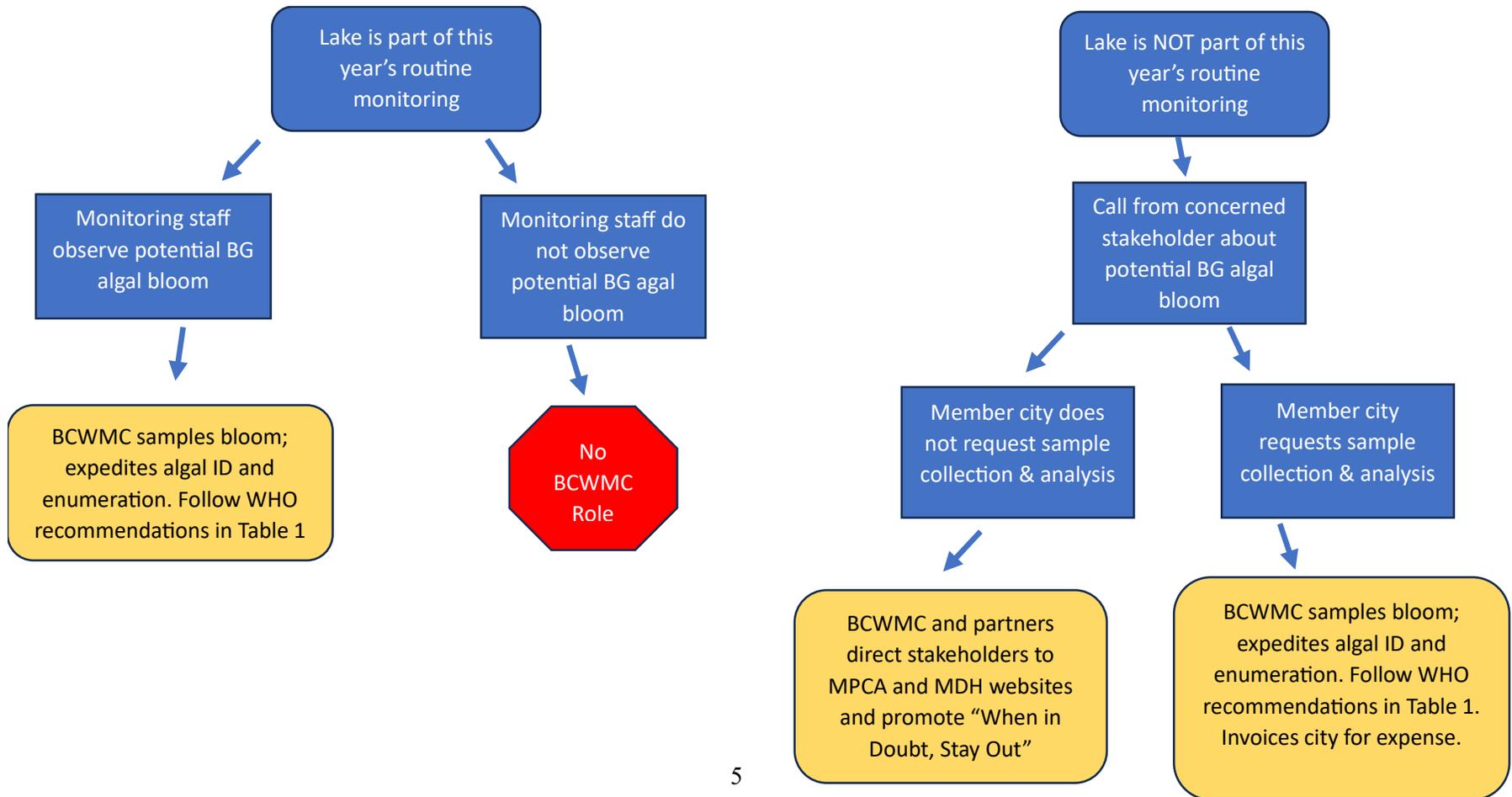


Table 1. World Health Organization Guideline Thresholds

Guidance Level	Health Risk Level	Health Risks	BCWMC Actions
< 20,000 blue-green algal cells per milliliter	Little, If any probability	<ul style="list-style-type: none"> Little if any 	None
> 20,000 blue-green algal cells per milliliter but < 100,000 blue-green algal cells per milliliter	Low probability	<ul style="list-style-type: none"> Short-term health outcomes (e.g., skin irritations, gastrointestinal effects) 	<p>Inform the City, the MPCA, MDH and other stakeholder partners of findings of a low probability of a health risk to lake/pond users and pets.</p> <p>Direct lake/pond users to MPCA website and “When in Doubt, Stay Out” message.</p> <p>https://www.pca.state.mn.us/air-water-land-climate/blue-green-algae-and-harmful-algal-blooms</p>
> 100,000 blue-green algal cells per milliliter but < 1,000,000 blue-green algal cells per milliliter	Moderate probability	<ul style="list-style-type: none"> Short-term health outcomes (e.g., skin irritations, gastrointestinal effects) Potential for long-term effects from some cyanobacterial species 	<p>Inform the City, the MPCA, MDH and other stakeholder partners of findings of a moderate probability of a health risk to lake/pond users and pets.</p> <p>Recommend that the property owner or city post advisory signs on the property.</p> <p>Direct lake/pond users to MPCA website and “When in Doubt, Stay Out” message.</p> <p>https://www.pca.state.mn.us/air-water-land-climate/blue-green-algae-and-harmful-algal-blooms</p>
> 10,000,000 blue-green algal cells per milliliter	High probability	<ul style="list-style-type: none"> Short-term health outcomes (e.g., skin irritations, gastrointestinal effects) Potential for long-term effects from some cyanobacterial species Potential for acute poisoning 	<p>Inform the City, the MPCA, MDH and other stakeholder partners of findings of a high probability of a health risk to lake/pond users and pets.</p> <p>Recommend that the property owner or city post advisory signs on the property.</p> <p>Direct lake/pond users to MPCA website and “When in Doubt, Stay Out” message.</p> <p>https://www.pca.state.mn.us/air-water-land-climate/blue-green-algae-and-harmful-algal-blooms</p>

Who should you contact if you suspect a potential blue-green algal bloom?

- Contact the Minnesota Pollution Control Agency (MPCA) or the Minnesota Department of Health (MDH)
- MPCA lake monitoring staff track reports of potential harmful algae blooms. You can email pictures of the suspected bloom to algae.mPCA@state.mn.us. For more information on harmful algae blooms, call 651-757-2822 or 800-657-3864 or visit the [MPCA’s Blue-Green Algae and Harmful Algal Bloom web page](#).
- Report human health effects to the Minnesota Department of Health (MDH) [Foodborne and Waterborne Illness Hotline](#) at 1-877-366-3455. For health questions, citizens can contact MDH’s Waterborne Diseases Unit at 651-201-5414 or visit the [MDH’s Harmful Algal Bloom web page](#).
- In addition, if you think you or your pets are experiencing adverse health effects due to contact with, or ingestion of, lake water/algae, seek medical attention immediately.