

Memorandum

To: Riely Purgatory Bluff Creek Watershed District Board of Managers
From: Joe Bischoff and Scott Sobiech
Subject: Watershed and Lake Management Plans
Date: September 26, 2024
Project: 2327053.14

At the September 11, 2024 RPBCWD Board meeting, Barr Engineering presented proposals to develop lake and watershed management plans for five lakes in the District. The Board of Managers provided some feedback on the proposal including:

1. Providing the matrix used to select lakes
2. Evaluating options to do all five of the lakes presented as well as the District-wide work plans
3. Providing a timeline for the project

Responding to the provided feedback, Barr met with District staff to determine areas where District staff could complete more of the task to narrow the budget further.

Lake Prioritization Matrix

A matrix was developed to guide discussions with District staff regarding which lakes should be prioritized for the development of watershed and lake management plans (See Table 1). The prioritization was based on the following questions.

- Is the lake a headwater lake?
- Does the lake discharge to downstream lakes meeting water quality standards following significant restoration effort?
- How recent is the last UAA study?
- Is there updated pond information from City inspections or has there been significant development in the watershed?
- Is chloride becoming a potential issue?
- Which lakes need more information for project identification to support the next 10-year watershed plan?

Following discussion with District staff, five lakes stood out as demonstrating the highest need for updated watershed and lake management plans including:

- **Lake Susan** – Highly degraded lake water quality that discharges to downstream lakes where significant restoration efforts have resulted in good water quality
- **Mitchell Lake** – Significant efforts in surveying ponds in the watershed by Eden Prairie and close to the water quality standard
- **Lake Lucy** – Headwater lake with high watershed development that discharges to a high-quality downstream lake
- **Red Rock Lake**- Significant efforts in surveying ponds in the watershed by Eden Prairie and close to the water quality standard
- **Lake Ann** - Because Lake Ann resides between Lake Lucy and Lake Susan, it was included in the work plan.

Table 1. Decision matrix to prioritize lake for the development of watershed and lake management plans.

Lake	Depth	MPCA Impairment	Previous UAA	Recent Pond Inspection?	Chloride trend increasing?	Priority	Reasoning
Riley Creek							
Lucy	Shallow	Not Listed	2013	No	No	High	<ul style="list-style-type: none"> • Headwater Lake • Discharges to downstream high-quality lake • Development and redevelopment pressure in watershed
Ann	Deep	Not Impaired	2013	No	No	Low	<ul style="list-style-type: none"> • Headwater Lake • Discharges to downstream restored lakes • Excellent water quality
Susan	Shallow	Impaired	2013	No	Yes	High	<ul style="list-style-type: none"> • Discharges to downstream restored lakes • Upper Riley Creek project (2024/2025)
Rice Marsh	Shallow	Not Listed	2016	Yes	Yes	Medium	<ul style="list-style-type: none"> • Meeting water quality standards • Continued alum effort • Development and redevelopment pressure in watershed
Riley	Deep	Not Impaired	2016, 2021	Yes	Yes	Medium	<ul style="list-style-type: none"> • Meeting water quality standards • Continued alum effort

Lake	Depth	MPCA Impairment	Previous UAA	Recent Pond Inspection?	Chloride trend increasing?	Priority	Reasoning
Purgatory Creek							
Silver	Shallow	Impaired	2017		No	Medium	<ul style="list-style-type: none"> • Headwater Lake • Wild Rice population
Lotus	Deep	Impaired	2017	Yes (2017)	No	Medium	<ul style="list-style-type: none"> • Headwater Lake • Current water efforts underway
Duck	Shallow	Not Listed	2017		No	Medium	<ul style="list-style-type: none"> • Headwater lake • Local community engagement
Round	Not Listed		2017		Yes	Low	<ul style="list-style-type: none"> • Active alum management
Mitchell	Shallow	Not Listed	2017, 2021	Yes (2017)	Yes	High	<ul style="list-style-type: none"> • Headwater Lake • Recent pond survey • Internal load study • Wetland survey information • Active vegetation management history • Not currently listed as impaired but close to standard
Red Rock	Shallow	Not Listed	2017	Yes (2017)	Yes	High	<ul style="list-style-type: none"> • Recent pond survey • Internal load study • Active vegetation management history • Not currently listed as impaired but close to standard
Idlewild	Shallow		2017		Yes	Low	
Staring	Shallow	Impaired	2017	Yes (2017)	Yes	Low	<ul style="list-style-type: none"> • Need to address headwater sources first
Hyland	Shallow	Not Listed	2017	No	No	Low	<ul style="list-style-type: none"> • Three Rivers Park District leading restoration

Project Budgets

Barr reviewed the work plan budgets with District staff to identify areas where the District staff could provide more support and lower the costs. There is also some economy of scale completing all five lakes together for the watershed modeling. Based on that discussion, Table 2 outlines the new proposed costs to complete the watershed and lake management plans for the five lakes.

To reduce the estimate budgets, Barr made the following changes to the work plans.

Lake Management Plans

- Reduced modeling costs based on the economy of scale of doing the models at the same time
- District staff will be responsible for aquatic vegetation and shoreline summaries including all mapping
- District staff will be responsible for developing fisheries summary and management strategies with Barr providing input on strategies

Aquatic Vegetation and Shoreline Plan

- District staff will be responsible for collecting and compiling aquatic vegetation data for reference lakes
- District staff will be responsible for summarizing current aquatic vegetation conditions in the lakes
- Increased the role for District staff in developing shoreline restoration cut sheets

Fisheries Management Plan

- District staff will lead the development and writing of the fisheries management plan with support from Barr staff on overall strategy

Table 2. Estimated budgets to complete the proposed Watershed and Lake Management Plans.

Work Plan	Original Budget Estimate	Revised Budget Estimate
Lake Lucy, Lake Ann, and Lake Susan Plan	\$150,225	\$139,925
Mitchell Lake and Red Rock Lake Plan	\$135,845	\$129,485
Aquatic Vegetation and Shoreline Plan	\$48,145	\$44,170
Fisheries Plan	\$21,270	\$6,185
Total	\$355,485	\$319,765

These changes reduced the overall costs to develop the watershed and lake management plans by approximately \$36,000 by shifting labor from Barr staff to District staff.

Timelines

Timelines were presented in each of the work plans including benchmarks for individual tasks. The goal for completing the plans is to be completed in time to support the development of the District's 10-year plan update. All the management plans will be completed by November 2025 with the shoreline, aquatic plant, and fisheries plans completed in June of 2025. More specifics timelines are presented in each of the work plans.

RESOLUTION NO. 24-063
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

Approving Task Orders No. 47, No. 48, No. 49, & No. 50 to Develop Diagnostic Studies and Management Plans for the Ann, Lucy, Susan Watershed and the Mitchell and Red Rock Watersheds as well as District-wide Fisheries and Shoreland Management Plans

Manager _____ offered the following resolution and moved its adoption, which was seconded by Manager _____:

WHEREAS the Riley Purgatory Bluff Creek Watershed District Board of Managers adopted a watershed management plan consistent with MN Statute 103D.401 (Plan), and

WHEREAS MN Statute 103D.405 states that the RPBCWD must adopt a revised plan no more than ten years and six months after the last adoption or revision, and

WHEREAS MN Statute 103D.401 states that the Plan must describe “existing water and water-related problems within the watershed district, possible solutions to the problems, and the general objectives of the district,” and

WHEREAS the RPBCWD last updated any comprehensive diagnostic studies of the water resources in or around 2017, and

WHEREAS the RPBCWD Board of Managers has instructed staff to think about the district waters and water-related problems as well as potential solutions in a systems-based approach that considers the interaction of multiple watershed characteristics with one another, and

WHEREAS on September 11, 2024, a presentation was given to the RPBCWD Board of Managers describing the tasks, costs, and expected outcomes of the four Task Orders, and

WHEREAS the RPBCWD Board of Managers instructed staff to identify potential cost savings to the plan development as well as where additional funding may be reallocated from to compensate for any shortfall between the budgeted line-item amount and the proposed costs, and

WHEREAS staff and Barr Engineering have identified several tasks which could be performed by district staff and removed from the scope of services provided by Barr, and

WHEREAS staff finds that the Wetland Program, Lake Vegetation Management Program, and the Plan update funds all overlap with the purpose of the Task Orders and have adequate funding to allow for \$15,000, \$15,000, and \$40,000 respectively to be allocated from each fund to these Task Orders, and

WHEREAS the realized savings of \$40,000 through the use of district staff and the additional fund allocation of \$70,000 provides \$320,000 of funding to fulfill the \$319,765 obligation to complete these Task Orders.

NOW THEREFORE BE IT RESOLVED that the Riley Purgatory Bluff Creek Watershed District Board of Managers hereby finds that the presented task orders are necessary to comply with MN Statute 103D.401 and 103D.405 and that adequate funds are available in the adopted budget and therefore approves Task Order 47, Task Order 48, Task Order 49, and Task Order 50 for Barr Engineering to perform a diagnostic study and develop management plans for the Lake Lucy, Ann, and Susan Watershed,

the Mitchell and Red Rock Watersheds as well as a district-wide fisheries plan and a district-wide shoreland and aquatic vegetation plan with assistance from District staff.

The question was on the adoption of the resolution and there were __ yeas and __ nays as follows:

	<u>Yea</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
CRAFTON				
DUEVEL				
NELSON				
PEDERSEN				
ZIEGLER				

Upon vote, the president declared the resolution _____.
Dated: October 2, 2024.

* * * * *

I, Tom Duevel, secretary of the Riley Purgatory Bluff Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this ____ day of _____, 2024.

Tom Duevel, Secretary