



Body of main report

Section I – Work plan review

- On 8/1/16 PCA staff approved out of state travel for delivery of the sediment core samples to University of Wisconsin – Stout, where the samples were planned to be analyzed.
- On 12/15/17 we requested a minor change in shifting of funds. This was to move \$522.60 from SWCD time from Obj. 3 task A over to the modeler's time under both the \$90 and \$127 pay rates. Moving funds within a task.
- In Dec. of 2017 we also requested to shift \$20 from Obj.2 task B over to Obj. 2 task D. This shift was within the same contractor's work, UW- Stout. This discrepancy was due to an invoicing error, approved as a minor adjustment.

Work Plan Task & Activity Summary:

Obj. 1 Task A: Watershed Best Management Practice (BMP) Implementation

This item provided the match for this grant. It includes the following completed BMPs: A grassed and lined waterway was installed immediately adjacent to the Ann River, just downstream of Ann Lake. Two shoreland restoration projects were completed on Ann Lake. One involved augmentation of existing rock rip-rap and both involved planting deep rooted natives along the shore. The two roadside projects have been designed and hope to be installed this spring, 2019.

Obj. 2 – Internal Load Feasibility Study

Task A: Collect sediment cores

Cores were collected by Wenck and SWCD staff on 9/11/16. Wenck then delivered the samples to UW-Stout for testing.

Task B: Evaluate sediment chemistry

UW-Stout evaluated the sediment core chemistry as planned.

Task C: Evaluate hypolimnetic aeration for internal load reduction

Wenck staff evaluated a hypolimnetic aeration treatment as planned.

Task D: Evaluate Phoslock treatment for internal load reduction

UW-Stout evaluated a Phoslock treatment as planned.

Task E: Evaluate aluminum-chloride treatment for internal load reduction

UW-Stout evaluated the aluminum-chloride treatment as planned.

Obj. 3 Task A: Final Report

Wenck Associates completed the draft report Sept. 2017 and the final report June 2018. The final report has been placed on the SWCD website for public viewing.

Obj. 4 Task A: Stakeholder and public meetings

The kick-off meeting with the Ann Lake Watershed Alliance (ALWA) was the same day as the sediment core sampling, 9/11/16, about 20 people attended. An interim meeting with ALWA was held 3/12/17 to keep them informed of our status on this study, 19 people in attendance. A side topic, 'Shallow Lakes Workshop' was held 8/22/17 for information/educational purposes with about 25 people in attendance. After the draft study was completed two follow-up meetings were held to present the study. One meeting was with the public and ALWA on 10/8/17 (35 people) and the second meeting was held with agency staff on 10/25/17 (15 people). In 2018 another discussion meeting was held 8/10/18 to further discuss an Ann Lake treatment option and our next steps in this process. This was a great discussion with about 25 people in attendance.

Obj. 4 Task B: Administrative / semiannual and final reports

As planned, the SWCD staff completed the interim semiannual reports with reimbursement invoicing and completing the final report. Invoicing with both contractors was challenging at times to ensure the contractors remained within the grant's allocated category funding levels. The UW-Stout invoice was very late and needed to be requested.

Section II – Grant results

- **Products:** (attached)
 - Ann Lake Internal Load Feasibility Study with Appendix
 - Photos of BMPs from the match, kick-off meeting
 - Fliers and materials from the various outreach meetings.
 - Preliminary results presentation from the lab.
 - Power Point presentation on the study from Wenck from 10/8/17 meeting.

- **Public outreach and education:**

Public outreach was a big part of this project and continues to be as we try and garner support and funding for a Lake Treatment to reduce the high internal nutrient load of the lake. A total of 6 outreach events were held with 139 people in attendance. Outreach with this project is instrumental, especially with the large expense associated with any of the treatment options.

- **Long-term results:**

We still plan to seek funding for an Alum treatment for Ann Lake to address the internal high nutrient load in the lake sediment. The internal load is a larger contributing nutrient source than from the outside watershed running into the lake, so it is crucial that the internal load be address if we are to bring the lake within our state's water quality standards. An Alum treatment is a large expense for a lake without the revenue streams that metro lakes may have. This was partly the reason for the 8/10/18 public forum meeting held. So seeking funds and grant match funds will be a big challenge going forward, especially as the treatment plan is designed over 14 years.

Partnerships were renewed with this project and will continue to be important going forward as we seek funding for a treatment. We have worked with the Fish Lake Improvement Association as they are the downstream lake in this same watershed. They along with Ann Lake are vested in the outcomes to a lake treatment.

Discouraging the the results of this study is the large ticket price on the four treatment options analyzed. Also discouraging is that three of the options are only term solutions with various life spans. These three only bind the nutrients to the lake bottom and do not rid the lake of the nutrients. We did request Wenck to further evaluate the option of dredging the lake, but this had an even larger price tag of ~\$6,800,000.

The final report has been posted on our website and we will continue outreach efforts as we seek funds for a lake treatment. We are considering a newspaper article and a mailing to lake residence yet to continue this treatment discussion.

A recommendation to PCA on their grants is to rethink the match requirement. The grant agreement states a 45% match, but it is calculated based on the total project cost. The total project cost includes the match amount. So in essence we are providing match on top of our match. The true match amount needed varies based on the total project cost and is greater than 45%. This is confusing and makes planning a more difficult. Would PCA consider match calculated only based on the true grant amount distributed?

Section III – Final Expenditures

Please see the attached Budget Expenditure Spreadsheet.

Grant project summary

Project title: Ann Lake Watershed BMP and Internal Load Feasibility Project
Organization (Grantee): Kanabec SWCD
Project start date: 02/29/2016 Project end date: 01/18/2019 Report submittal date: 01/18/2019
Grantee contact name: Deanna Pomije Title: District Manager
Address: 2008 Mahogany St Ste 3
City: Mora State: MN Zip: 55051
Phone number: 320-679-3982 Fax: NA Email: Deanna@KanabecSWCD.org
Basin (Red, Minnesota, St. Croix, etc.)
/Watershed & 8-digit HUC:: 21020002 County: Kanabec

Project type (check one):

- Clean Water Partnership
- Total Maximum Daily Load (TMDL)/Watershed Restoration or Protection Strategy (WRAPS) Development
- 319 Implementation
- 319 Demonstration, Education, Research
- TMDL/WRAPS Implementation

Grant funding

Final grant amount: \$36,766.81 spent Final total project costs: \$68,184.81
Matching funds: Final cash: \$30,918 Final in-kind: \$500 Final Loan: \$0
MPCA project manager: Eric Alms

Executive summary of project (300 words or less)

This summary will help us prepare the Watershed Achievements Report to the Environmental Protection Agency. (Include any specific project history, purpose, and timeline.)

Problem

Both Ann and Fish Lakes are on the MN 303(d) list for nutrient impairments from 2004. The Ann River TMDL from 2013 identified Ann Lake with needing 4,758 pounds of Total Phosphorus (TP) reduced from the watershed and internal sources. Approximately 86% of the TP reduction needs to come from the high internal loading in the sediment of Ann Lake. Sediment cores sampled suggest that the phosphorus release from the Ann Lake sediment to be a major source of soluble phosphorus in the lake's water column in the summer's growing season. The proposed Ann Lake Internal Load Feasibility Study as part of this grant reviewed four treatment options to address the high internal load of Ann Lake.

Waterbody improved

With a future proposed treatment to Ann Lake the internal load is anticipated to be reduced by 75%; a total of 4,096 pounds per year of phosphorus reduced. We anticipate seeking funding for the first phase of the 14-year treatment plan in 2019.

Project highlights

One project highlight was the public forum meeting held 8/10/18 to further discuss an Ann Lake treatment option and our next steps in addressing this problem. This was a great discussion with about 25 people in attendance. The Kanabec SWCD continues to work closely with the Ann Lake Watershed Alliance on a plan for a lake treatment to reduce the internal high phosphorus load.

Results

Three Best Management Practices (BMP) were installed, as match. A grassed / lined waterway and two shoreland restoration projects was installed. The two roadside projects have been designed and hope to be installed this spring, 2019. The total of the installed BMP's resulted in 16 pounds of Phosphorus reduced per year; 16 Tons of soil saved per year and 16 Tons of soil sediment prevented per year.

Partnerships (Name all partners and indicate relationship to project)

Ann Lake Watershed Alliance – intrecal partner, helping to research and promote a lake treatment to deal with the high internal load

Ann Lake Township – 2 township erosion control projects, due to be installed spring 2019

Fish Lake Improvement Association – downstream lake receives the Ann Lake/Ann River runoff, may assist in a lake treatment project

Pictures

Attached