

Project Name | BCWD Diversion Water Quality**Date** | 10/07/2024**To / Contact info** | BCWD Board of Managers**Cc / Contact info** | Karen Kill, District Administrator**From / Contact info** | Camilla Correll, PE and Anne Wilkinson, PhD**Regarding** | Lake McKusick and Brown's Creek Diversion Water Quality Assessment Update

Background

The BCWD's current Watershed Management plan includes the following water quality goal: *Achieve the [total phosphorus] load reduction goal of 148 pounds per year. established at the Diversion Structure as identified in the McKusick Lake and Lily Lake Management Plan.* The implementation activity included to address this goal was to "Re-assess water quality data collected in the contributing drainage area to Diversion Structure to evaluate pollutant loading and identify sources." The outcome or deliverable of this work would be a report summarizing watershed loading from this area and a map prioritizing load reduction practices.

This implementation activity has not been conducted to date. To better inform the WMP Update, District Staff is recommending that this implementation activity be addressed so that the findings can inform the goal and corresponding implementation activities. This scope of services identifies the tasks and estimated cost of analyzing water quality data collected since 2006 in the contributing drainage area to Diversion Structure to evaluate pollutant loading and identify sources to Lake McKusick.

The Diversion Structure was installed by the City of Stillwater in 2003. It is located approximately 600 feet west of Neal Avenue on the south side of the Brown's Creek State Trail in Stillwater. The Diversion Structure was an important component of the Stillwater Alternative Urban Areawide Review (AUAR) Mitigation Plan, which was completed in July 1997. The AUAR specifies measures or procedures that will be used to protect the environment and natural resources from the potential impacts of development in the Annexation Area, which corresponds to the drainage area to the Diversion Structure. The cornerstone of the mitigation plan was the diversion of stormwater flowing from Long Lake and other portions of the Annexation Area to McKusick Lake and from there through a constructed outlet to the St. Croix River. The goals of the McKusick Lake Diversion were to: (1) preserve and enhance the integrity of Brown's Creek, (2) improve the water quality and quantity conditions in Long Lake, and (3) allow the City of Stillwater to proceed with the development as proposed in the City's Comprehensive Plan. The total area draining to the Diversion Structure is 2,793.33 acres (see Figure 1).

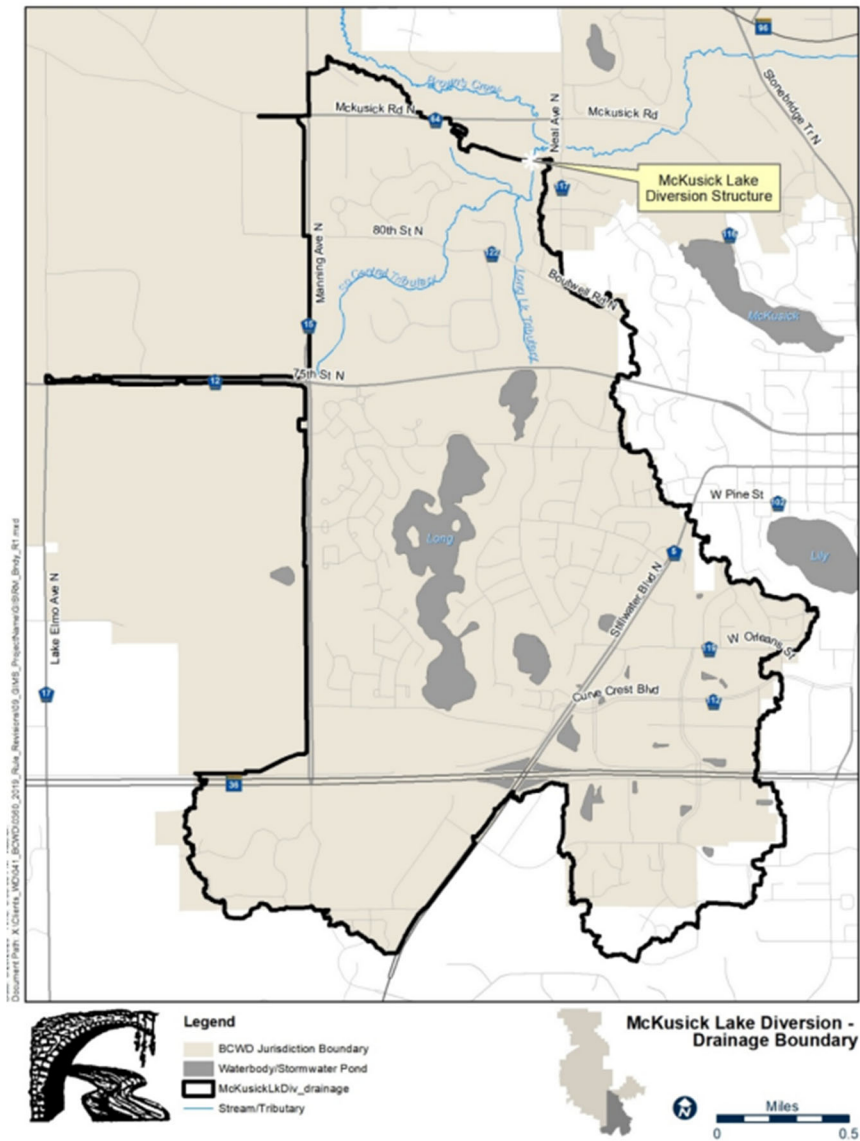


Figure 1. Drainage Area to the Diversion Structure

Scope of Services

Task 1: Data Compilation & Kick off meeting

The Washington Conservation District has biannual visual inspections and automated flow-weighted sampling (May through September) at the Diversion Structure since 2006 to measure what is going into McKusick Lake. A BCWD water quality database was created as part of the Long Lake 2020 trend analysis. This task will update the database with additional years of data, parameters (i.e. heavy metals), and monitoring stations that were not originally included. EOR will identify any data gaps make additional monitoring recommendations if necessary. This task will also include a meeting with District staff to review the project approach, make sure there is alignment on the data analysis, and select possible hot spots for investigation.

Task 2: Data Analysis

EOR is not proposing to recreate information already provided in the Washington Conservation District's Annual Water Monitoring Summary and the Long Lake 2020 Trend Analysis. Rather, EOR will provide an update to the analysis to specifically evaluate short- and long-term trends and identify pollutant loading at the diversion structure, analyzing annual average levels, flow-weighted mean concentrations and annual loads. Finally, EOR will summarize and compile the load reductions that have been achieved in the drainage area to date and report the progress to date toward the 148 lbs/yr reduction goal identified in the 2017-2026 Watershed Management plan.

Task 3: Source Identification

Specific sources of heavy metals have yet to be found and are not consistent with current land-use practices. EOR will do a desktop analysis to evaluate possible sources of pollutant loading, including erosion from old dump sites, wetlands, Long Lake, old farm foundations and development of old farms in the watershed. EOR will provide recommendations for monitoring within the watershed to confirm potential sources.

Additionally, budget is included for wetland sediment coring and laboratory analysis at the University of Minnesota Soil Testing Lab for 5 wetlands within the drainage area to determine phosphorus hot spots.

Task 4: Technical Report

As this scope of services indicates, EOR will present this information in a technical report for the Board of Managers, CAC, communities and other stakeholders to review as part of the Watershed Management Plan update process.

Fee Summary

Table 1 summarizes the labor, lab fees, and associated costs for the tasks described above.

Table 1. Scope of Services for Long Lake and Brown's Creek Water Quality Assessment and Trend Update

Task	Description	EOR Estimated Hours	Subcontractor fees	Estimated Cost
1	Data Compilation & Kick off Meeting	13	-	\$2,355
2	Data Analysis	24	-	\$3,736
3	Source Identification	20	-	\$3,380
	University of Minnesota Soil Testing	-	\$1,150	\$1,150
4	Technical Report	26	-	\$4,568
Total		83	\$1,150	\$15,189

Requested Action

1. Approve this scope of services not to exceed \$15,189 from account 927-0000Management plan, of which \$1,150 will be subcontracted to University of Minnesota Soil Test Lab for sediment core lab analysis.