



MEMORANDUM

Comfort Lake-Forest Lake Watershed District

Date: July 14, 2026
To: CLFLWD Board of Managers
From: Mike Kinney, District Administrator
Subject: Bone Lake South Nature Area Wetland Restoration SOW



Background/Discussion:

The District has been awarded a Lessard-Sams Outdoor Heritage Fund (LSOHF) Grant to restore habitats on the 238-acre Bone Lake South Nature Area (BLSNA). The first phase of the restoration of the property is to remove legacy load nutrients identified in the wetland adjacent to the barn along 228th St and to evaluate the flood storage potential within the greater wetland complex.

As such, the District has requested a feasibility level analysis and preliminary restoration design from District engineers, Emmons and Olivier Resources (EOR) for this effort. This feasibility work will include: collecting survey and field data, further investigation of the wetland soils in the northern lobe where legacy phosphorus loading is expected, and preparation of a 30% design and cost estimate for a wetland enhancement that improves flood storage in the wetland complex while ensuring no impact to the southern Tamarack Swamp habitat.

Attached to this memo is a Scope of Work (SOW) from EOR for Board consideration. The SOW includes the following tasks needed to reach a 30% design level plan and project cost estimate.

Task 1. Initial Review, Data Collection, and Wetland Delineation & Sampling

Task 2. Preliminary Permitting and Review

Task 3. Hydraulic and Hydrologic Modeling

Task 4. 30% Design Plans and Water Quality Calculations

Task 5. Summary Feasibility Report

Total cost for completion of all five tasks is \$40,920.50

Recommended Motion:

Manager _____ moves to direct the Administrator, on advice of counsel, to enter into an agreement with EOR in accordance with the July 06, 2026, scope of work in an amount not to exceed \$40,920.50. Seconded by Manager _____.

Attached:

BLSNA Legacy Load Improvement Feasibility SOW 07-06-2026

Project Name	BLSNA Legacy Load Improvement Feasibility	Date	7-7-2026
To / Contact info	CLFLWD Board of Managers		
Cc / Contact info	Mike Kinney, District Administrator, Blayne Eineichner, Project Coordinator		
From / Contact info	Erik Megow, PE – EOR, Inc. Anne Wilkinson, PhD, PE – EOR, Inc.		
Regarding	2026 Bone Lake South Natural Area (BLSNA) Legacy Load Improvement Feasibility		

Comfort Lake-Forest Lake Watershed District (CLFLWD) was awarded a Lessard-Sams Heritage Council Grant to implement a targeted habitat enhancement plan on a 236-acre property containing high priority wetland and upland habitat south of Bone Lake in northern Washington County. The goals of the implementation plan are to restore 23 acres of wetland, restore 105 acres of prairie/oak savanna, enhance 18 acres of Tamarack Swamp wetland, and enhance 6 acres of hardwood forest in the high priority area.

CLFLWD has requested a feasibility level analysis and preliminary design for the first phase of wetland restoration and treatment of a legacy watershed load within the northern lobe of the Bone Lake South Natural Area. This project will collect survey and field data, further investigate the wetland soils in the northern lobe where legacy phosphorus loading is expected, and prepare a 30% design and cost estimate for a wetland enhancement design that improves hydrology and hydraulics in the northern lobe while also investigating hydraulics along the entire system to ensure that hydraulic improvements will not negatively affect the Tamarack Swamp habitat at the southern, upstream end of the system.

The following tasks are planned to reach a 30% design level plan and cost estimate to ensure the project fits within the grant's budget and meets the District's overall goals for the overall habitat enhancement.

Task 1. Initial Review, Data Collection, and Wetland Delineation & Sampling

EOR staff will collect field data necessary to determine the feasibility and specific design of the wetland restoration and enhancement. Data collected includes, but is not limited to wetland delineation, crossing and topographic surveying with utility locate, and wetland soil sampling. EOR will contract with a laboratory subconsultant to complete the soil testing. Lab expenses below include the anticipated laboratory fee. A wetland delineation for all wetlands within the project area will be completed and a delineation report finalized based on site observations and monitoring data. The delineation will be completed through the approval process with local WCA LGU (Washington Conservation District) and USACOE.

The following subtasks are expected under Task 1:

1. Review existing/previous files, collected surveys, & soil results
2. Identification of utilities
 - a. Coordination of public locate
 - b. Facilitation of private utility locate, expense included herein
3. Survey
 - a. Preparation → files, benchmarks, data download, etc.
 - b. Survey of critical elevations, farm crossings, culverts, and existing drainageways

- c. Inventory, characterize, and photograph accessible existing hydraulic stormwater and drainage infrastructure.
 - d. Select wetland transects to characterize current storage and elevation of the wetland
4. Verify WCA permitting requirements
5. Wetland Delineation and delineation approval
6. Wetland Soil Sediment Sampling
 - a. Gather samples and ship to District preferred/contracted laboratory
 - i. Review lab reports
 - ii. We have budgeted for sampling at three depths in 10 additional locations to analyze Bray-P within the northern lobe. These 10 locations are chosen to better understand both the existing load in location we have already sampled, and to better quantify and verify the extents of the legacy P-load.

Estimated Hours and Cost:

76 hours = \$12,823; Mileage, equipment and lab expenses = \$1,301.50; Total cost = \$14,124.50

Deliverables:

Base CADD drawings for existing conditions, Soil testing results, Approved Wetland Delineation

Task 2. Preliminary Permitting and Review

EOR and District staff will reach out to potential permitting agencies to discuss the project activities, goals and permitting requirements. Agencies may include (but not be limited to) MPCA (NPDES and SWPPP), City of Scandia, MnDNR, Washington County, BWSR, and USACOE. EOR will investigate and assess local, state and federal wetland permit requirements for the activities proposed within regulated wetlands. An EAW is not expected to be required for this project. Final permit applications and approvals will be completed after final design and is not included within this scope.

Estimated Hours and Cost:

13 hours = \$2,340; Mileage and equipment expenses = \$0; Total cost = \$2,340

Deliverables:

Assessment of permitting requirements and compilation of preliminary permitting submittals

Task 3. Hydraulic and Hydrologic Modeling

EOR will perform existing and proposed hydrologic and hydraulic modeling for the Bone Lake South Area to determine the effects that any hydraulic improvements at the outlet of the northern lobe will have on wetland areas upstream. The modeling will also assist with any field, trail, or culvert crossing updates that need to occur to effectively implement the project and protect sensitive upstream areas such as the tamarack swamp habitat. The modeling will also look to maximize the storage capacity, rate and flow reductions to Bone Lake, while improving hydrologic characteristics to wetland basins to maximize beneficial uses and ecology of those basins.

The following subtasks are expected under Task 3:

1. Create an existing and proposed PC-SWMM model to analyze the inundation and high-water levels in each of the wetland lobes.
2. Existing conditions simulation
 - a. Delineate direct and upstream subwatersheds that drain to the entire Bone Lake South natural area using LiDAR and local survey
 - b. Create the existing basin and model the Atlas-14, 24-hr & 10-day, 1-, 2-, 10-, and 100-year rainfall events
3. Proposed condition(s) simulation
4. Reporting & quality and quantity comparison documentation

Estimated Hours and Cost:

37 hours = \$6,453; Mileage, equipment and lab expenses = \$0; Total cost = \$6,453

Deliverables:

Hydraulic modeling results, drainage maps, updated PC-SWMM model, and culvert sizing.

Task 4. 30% Design Plans and Water Quality Calculations

This task will include 30% design of the wetland enhancements. This task will include design calculations, water and phosphorus modeling, CADD drawings, and cost estimating. EOR will assess the field crossings and hydraulic connections (culverts) within the subwatershed, to the tamarack swamp area. EOR will then assess up to two different proposed outlet configurations, a grading plan, and a wetland enhancement and restoration plan.

The following subtasks are expected under Task 4:

1. Identification and vetting of wetland enhancements and design:
 - a. Stormwater infrastructure, grading, and wetland improvements
 - b. Field crossing and culvert updates
 - c. Trail and Overflow considerations
 - d. Access and construction limits
 - e. Site restoration plan
 - f. Drafting & details (5-6 Sheets)
 - g. Cost estimation

Estimated Hours and Cost:

86 hours = \$11,804.00; Mileage, equipment and lab expenses = \$0; Total cost = \$11,804.00

Deliverables:

30% Design Plans and details, SEQ & EOPC , Water Quality modeling results

Task 5. Summary Feasibility Report

After Tasks 1 through 4, EOR will author, format and assemble a Draft Feasibility Summary Report for District review. EOR will then refine and update Feasibility Study per District recommendations and help make a recommendation to the Board on whether the project aligns with the Grant requirements and whether the District should continue to the construction design stage.

Estimated Hours and Cost:

38 hours = \$6,199.00; Mileage, equipment and lab expenses = \$0; Total cost = \$6,199.00

Deliverables:

Summary Feasibility Report and presentation to Board

Expense	Unit Description	Units/Hours	Cost
Task 1	Initial Review and Data Collection	76	\$14,124.50*
Task 2	Preliminary Permitting and Review	13	\$2,340.00
Task 3	Hydraulic and Hydrologic Modeling	37	\$6,453.00
Task 4	30% Design and Water Quality Calculations	79	\$11,804.00
Task 5	Summary Feasibility Report	38	\$6,199.00
Totals		243	\$40,920.50

*Task 1 Includes \$101.50 for mileage and \$1,200 for laboratory fees (University of MN) for the testing of 30 soil samples at 10 sampling locations

Dedicated Team

Proposed primary EOR staff dedicated to the project and their individual roles are identified below:

- District Engineer, Limnologist – Anne Wilkinson, Ph.D., PE
- Principal Oversight – Greg Graske, PE
- Primary Design Engineer – Erik Megow, PE
- Design QA/QC Engineer – Derek Lash, PE
- Civil Technician & Field Services – Britta Carlson & John Sarafolean
- H&H Modeling Support – Bill Yu, PE; Paul Nation, PE
- Wetland Permitting Lead – Jimmy Marty, CMWP

Assumptions:

- This scope assumes that only one concept will be analyzed for the feasibility study
- Survey
 - Select data will be gathered for feasibility-level, 30% design analysis; additional survey may be necessary for construction design
 - Limited to key topographic, bathymetry and field crossing infrastructure points
- Any grant administration time/deliverables completed will be completed by the District
- The following services are not included in this scope and are not expected to be necessary:
 - Geotechnical drilling services
- The following, but not limited to the following, potential future services/costs are deferred to subsequent phases
 - construction specifications
 - obtaining permits

Recommended Motion

We recommend the Board approve this 2026 scope of work for EOR to complete the 2026 BLSNA Legacy Load Improvement Feasibility for a total cost of \$40,920.50.