



MEMORANDUM

Comfort Lake-Forest Lake Watershed District

Date: February 16, 2023
To: CLFLWD Board of Managers
From: Mike Kinney, District Administrator
Subject: Little Comfort Infiltration Basin Scope of Work



Little Comfort Lake
Management District

Background/Discussion

The purpose of this agenda item is for staff to provide an update on the Little Comfort Lake projects and recommend the Board authorize a scope of work from the District Engineer, Emmons & Olivier Resources (EOR). These projects might be considered a case study in adaptive management.

Little Comfort Infiltration Basin (former Gravel Pit)

The original project concept, as outlined in the FY21 Clean Water Fund grant application, was to impound water in the "East Wetland" located east of Heath Avenue and west/southwest of Little Comfort Lake. However, upon further feasibility and modeling, the District Engineer found that doing so would result in increased water levels on several properties which overlay the wetland. The District was unable to obtain landowner permission from all of the overlaying property owners. The proposed Little Comfort Infiltration Basin Project is an alternative to the East Wetland Impoundment and would achieve the same water quality result as the original concept, but in a slightly different location.

The Little Comfort Infiltration Basin Project is located just northeast of the East Wetland and would utilize an inactive gravel pit. It is located on a single parcel, and modeling shows that water levels would only impact that single parcel. The District has been in contact with the landowner, and the landowner is interested in selling the property to the District. The District would acquire the property with local ad valorem revenue. No funding associated with the Clean Water Fund grant would be used. The project would divert a portion of the flow from the conveyance ditch and impound water in the gravel pit, which would act as an infiltration basin.

The estimated phosphorus reduction for the originally proposed East Wetland Impoundment was 80 lb/yr (lifetime cost benefit of \$160/lb). The estimated phosphorus reduction for the Little Comfort Infiltration Basin Project is 80-100 lbs/yr (lifetime cost benefit of \$230-\$300/lb, which includes the land acquisition cost). Despite the additional staff and engineering time needed to pivot this project, and the additional land acquisition cost, the newly proposed project's cost-benefit is still considered very good.



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Alum Treatment

Part of the engineering work for this project was to perform alum dosing. Over the course of doing this work between the grant award and now, the District Engineer gathered additional information which resulted in a recommendation not to proceed with an alum treatment at this time. Staff requested a Clean Water Fund grant amendment to shift the alum treatment funding to the Little Comfort Infiltration Basin (former gravel pit) project. Staff and engineers recommend the District evaluate future alum treatment(s) once the infiltration basin project and other upstream projects are completed.

School Lake Outlet Channel

The original concept for this project included beaver dam analogs. These would mimic natural conditions to slow flow in the channel and thus allow sediments to settle out. However, the beaver dam analogs were ultimately deemed infeasible because of permitting conversations with MnDNR and conversations with surrounding landowners with respect to water levels. The District is in the process of evaluating project alternatives to meet the proposed outcomes for this activity, but projects would likely take longer to implement than the grant period would allow. As such, staff proposes to focus the Clean Water Fund grant efforts on the Little Comfort Infiltration Basin Project. The District may seek alternative funding sources for future projects in the channel area.

Recommended Motion

The enclosed scope of work for Little Comfort Infiltration Basin engineering totals \$69,852 (Phase 1: \$31,295; Phase 2: \$38,557). Of the cost estimate for Phase 1, \$14,351.73 worth of work has already occurred. As such, future billings for remaining work under Phase 1 will not exceed \$16,943.27.

Proposed Motion: Manager _____ moves to authorize the administrator on advice of counsel to enter into an agreement with EOR in accordance with the February 16th scope of work, Task 1, and in an amount not to exceed \$31,295. Seconded by Manager _____.

Attached:

- EOR Scope of Work

Project Name	5-225-D4: (Little Comfort) Phosphorus Source Impl.	Date	February 16, 2023
To / Contact info	CLFLWD Board of Managers Mike Kinney, CLFLWD Administrator		
Cc / Contact info	Blayne Eineichner, CLFLWD Project Coordinator Greg Graske, PE, CLFLWD Engineer		
From / Contact info	Kyle Crawford, PE Jason Naber, CMWP		
Regarding	2023 Proposed Final Implementation Scope of Work – Little Comfort Infiltration Basin		

Background

Comfort Lake-Forest Lake Watershed District (CLFLWD or the District) was awarded a FY21 Clean Water Fund grant from the Board of Water and Soil Resources (BWSR) to implement the Little Comfort Lake Phosphorus Reduction Implementation project. The total grant amount is \$354,600; the required match is \$88,650.

One of these project concepts included installing a weir to impound water in a large wetland complex that is currently ditched and discharging high phosphorus concentrations to Little Comfort Lake via the Heath Avenue outlet pipe. During the feasibility investigation of this project, detailed modeling determined that the proposed impoundment on that system would result in localized flood elevation increases to adjacent properties and landowners. Landowner outreach and input meetings confirmed that even slight increases in flood elevations within the ditched wetland system would not be supported. Field investigations identified an alternative design that utilized a former large gravel pit east of the wetland. More detailed analysis confirmed this abandoned gravel pit provides an opportunity to divert water from the wetland to the gravel pit to naturally infiltrate runoff, providing both flooding and water quality benefits. Additional work by District staff confirmed the owner of the gravel pit property was open to discussing a project on their property.

The work team proposed to implement the project includes District staff; Emmons & Olivier Resources (EOR) staff, the CLFLWD Engineer; District Legal Counsel; and a contractor.

Detailed Implementation Work Plan

The following work plan details all activities proposed to design and implement Little Comfort Infiltration Basin project. This work plan includes the engineering costs associated with the components of the overall FY21 BWSR CWF grant work plan.

Phase 1 - Preliminary Design Feasibility (\$31,295)

Task 1A: Project Management, Grant Reporting & Project Agreements

This task will include general project coordination, grant reporting assistance, meetings with District Staff and the landowner, and development of project agreements. CLFLWD staff, legal counsel, and EOR will work on a purchase agreement with the landowner(s) for construction and maintenance access to the wetland and buffer. EOR will also coordinate with the District to host meetings with landowners to explain the project and respond to any questions and/or concerns. Currently the project is anticipated to be completed entirely on two parcels the District is pursuing purchasing and the scope of work reflects this assumption. EOR will provide support to District staff and legal counsel as necessary.

Estimated Hours and Cost:

20 hours = \$3,639.

Schedule:

March 2023 – December 2024

Deliverables:

N/A

Task 1B: Field Data Collection, Analysis & Assembly

EOR staff will collect additional field data that is necessary to determine the specific final design of the diversion project. Data to be collected by EOR includes, but is not limited to, tree identification and topographic surveying with utility locates, hand-augered soil borings to supplement existing soil geotechnical information, a wetland plant community survey and offsite boundary review for the entire wetland basin, and a wetland delineation at the proposed outlet location. A desktop review for tile lines will be compared with any available tile line mapping. In-field confirmation of tile lines will be a very limited effort with use of a tile probe to confirm potential locations. Existing utility information within the project area will be requested from the city and known private utilities.

Estimated Hours and Cost:

32 hours = \$4,636; Mileage, equipment, lab expenses = \$1,176; Total cost = \$5,812

Schedule:

March 2023 – June 2023

Deliverables:

Base CAD drawings for existing conditions; wetland delineation

Task 1C: Preliminary Design Feasibility and Permitting

This task will include completion of preliminary design of the infiltration basin project. This task will include design calculations, water budget modeling, phosphorus reduction estimates, CAD drawings, and cost estimating. EOR will assess multiple configurations to identify the most efficient design. Sediment excavation depth and extents will be analyzed to maximize water quality treatment within the project budgetary and permitting constraints. This task will include modeling of the different wetland outlet design options. It is expected that multiple models runs will be needed to optimize project benefits and minimize risk to private property. Preliminary discussions with permitting authorities will also occur during this phase to determine permitting requirements, concerns. EOR will present the findings of the preliminary design feasibility to the Board for approval and project ordering.

Estimated Hours and Cost:

130 hours = \$21,726; Mileage, equipment expenses = \$118; Total cost = \$21,844

Schedule:

March 2023 – June 2023

Deliverables:

Preliminary design plans; Board presentation of preliminary design feasibility

Phase 2: Final Design & Construction (\$38,557)

This phase includes construction of a diversion pipe and structure to divert water from a large wetland complex that is currently ditched, experiences flooding issues, and is discharging high phosphorus concentrations to Little Comfort Lake via the Heath Avenue outlet pipe. Construction will be carried out by a contractor selected through a public bidding process. EOR and CLFLWD staff will oversee the bidding and construction process. Native vegetation guidelines will be followed for all project revegetation. A thorough vegetation assessment is needed to determine potential impacts to existing vegetation and enhancements resulting from water level stabilization.

Task 2A: Permitting

EOR and District staff will complete and submit permit applications to relevant permitting agencies. Agencies may include (but not be limited to) the city, Board of Water and Soil Resources, and US Army Corps of Engineers. EOR will coordinate with local, state and federal wetland agencies on permit requirements for activities proposed within regulated wetlands.

Estimated Hours and Cost:

50 hours = \$3,420; Mileage expenses = \$79; Total estimated cost = \$3,499

Schedule:

June 2023 – November 2023

Deliverables:

Meeting minutes, and documentation of necessary permits and any unique permit requirements, and permit applications.

Task 2B: Final Construction Documents

This task will include 60%, 90% and Final construction documents suitable for ordering the project and soliciting construction bids. This will include both internal review by EOR and external review by District staff.

Estimated Hours and Cost:

122 hours = \$19,504; Mileage expenses = \$79; Total estimated cost = \$19,583

Schedule:

June 2023 – August 2023

Deliverables:

60% Plans, 90% Plans, and Final Construction Documents

Task 2C: Public Construction Bidding & Construction Management

This task will include preparing final project specifications and bidding documents, advertising for public bids or quotes, conducting a pre-bid meeting, responding to bidder questions, conducting a bid opening and bid review and preparing a Recommendation for Award for the Board of Managers. This task also includes frequent onsite construction observations and an as-built survey to verify and document constructed conditions.

Estimated Hours and Cost:

98 hours = \$13,884; Mileage and equipment expenses = \$895; Total estimated cost = \$14,779

Schedule:

September 2023 – June 2024

Deliverables:

Bid summary, Bid review & recommendation for award. Construction contract, Meeting minutes, Weekly reporting, Pay request/recommendations, and As-built survey.

Task 2D: Operation & Maintenance Plan Development

This task is a District staff led effort with support provided by EOR as needed.

Estimated Hours and Cost:

3 hours = \$696

Schedule:

June 2023 – June 2024

Deliverables:

Assistance to District Staff as needed

Dedicated Team

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

- Project Manager – *Jason Naber, CMWP*
- District Engineer – *Greg Graske, PE*
- Design Engineer and Engineer of Record – *Kyle Crawford, PE*
- Quality Control Engineer – *Derek Lash, PE*
- Wetland Ecology & Environmental Permitting – *Jimmy Marty, CWMP*
- Principal Oversight - *Cecilio Olivier, PE*
- H&H & Water Quality Modeling Lead – *Trevor Rundhaug, PE*
- Civil Technician, Field Services & Construction Observation – *Multiple*

Summary

The total estimated cost for feasibility engineering services (Phase 1) for the Little Comfort Infiltration Basin project is \$31,295. We recommend the Board motion to authorize EOR to initiate work on the Phase 1 tasks in an amount not to exceed \$31,295.