



MEMORANDUM

Comfort Lake-Forest Lake Watershed District

Date: 4/03/2023
To: CLFLWD Board of Managers
From: Mike Kinney, District Administrator
Subject: 2023 Monitoring Plan



District Wide

Background/Discussion

This memo details the tasks and costs for the District's monitoring plan in 2023. The Board approved a total 2023 budget of \$184,229 for Program 3-003 Monitoring & Data Assessment to cover staff management/coordination, ongoing initiatives, stream, lake, wetland, and groundwater monitoring.

CLFLWD 2023 Adopted Monitoring Budget:

| Account Number | Budget Item | 2023 Expense Budget |
|----------------|-------------------------|---------------------|
| 3-003-4100 | Staff Management/Coord. | \$75,585 |
| 3-003-A | Ongoing Initiatives | \$10,609 |
| 3-003-B | Stream Monitoring | \$60,000 |
| 3-003-C | Lake Monitoring | \$20,000 |
| 3-003-D | Wetland Monitoring | \$10,609 |
| 3-003-E | Groundwater Monitoring | \$7,426 |
| | | \$184,229 |

Proposed Monitoring Plan

The 2023 district-wide monitoring efforts will be led by both EOR and CLFLWD staff.

- **EOR** will conduct the long-term stream monitoring and District-wide monitoring reporting.
 - The stream monitoring effort includes 6 long-term stream sites as indicated in Table 2.
 - EOR will draft the 2023 water monitoring report – including both stream and lake monitoring efforts.
- **CLFLWD staff** will take the lead on lake monitoring, assist with the setup and maintenance aspects of the long-term stream monitoring equipment (ISCO units), and implement the Citizen Assisted Lake Monitoring Program (CAMP), Citizen Assisted Tributary (CAT), Do-It-Yourself (DIY) diagnostic, and winter lake monitoring.



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Monitoring Summary

The 2023 Lake Monitoring Program will again utilize the Metropolitan Council CAMP Program. CAMP Volunteers will complete surface water quality monitoring on Bone, Moody, Comfort, the 1st and 2nd basins of Forest Lake. District Staff will collect CAMP data and additional data on several other lakes throughout the District. Water samples will be analyzed for total phosphorus, total Kjeldahl nitrogen, and chlorophyll-a. Additionally, measurements will be taken of the surface water temperature and water transparency (Secchi depth).

- District Staff will collect CAMP samples from Forest 3rd basin, Keewahtin, Shields, School, Little Comfort, Elwell, Third and Twin Lakes.
- District staff will also collect:
 - Dissolved oxygen (DO)/temperature profiles and collect bottom water samples on Forest 2nd, Forest 3rd, Comfort, Little Comfort, Shields, and Moody Lakes.
 - Hypolimnion water samples on Little Comfort and Forest 2nd and 3rd basins to evaluate lake turnover and mixing of bottom released phosphorus.

The CAT and DIY programs will continue monitoring efforts on Forest Lake 3rd and 2nd basins (CAT) and the DIY program will focus on direct drainages to Comfort Lake and the County Line sub-shed. In addition, further evaluation of the DIY HACH colorimeter technology will be undertaken with assistance from EOR in the form of up to 50 duplicate water quality sample collection and results comparison / analysis.

District staff also will collect Water Samples to assess TSS Composition (organic and inorganic) at 3 sites throughout the District with the intent to better understand TSS loading from ditched wetland complexes. The sites include: the School Lake outflow, the abandoned Judicial Ditch 1 wetland ditch at Hwy 61, and the BBSLC Channel at Manning Trail. Samples will be submitted to Instrumental Labs for analysis.

A summary of the CLFLWD proposed 2023 Monitoring Plan and associated costs are provided in the following table. This effort would be funded from line items 3-003-A, B & C. These budget line items total \$90,609. The 3-003-A line item includes funds for both EOR reporting and for District monitoring equipment.



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| Program Element | Proposed Cost | Lead/Description |
|-----------------------------------|----------------------|---|
| Stream monitoring | \$37,324.25* | |
| <i>Long-term stream</i> | \$31,825.25 | *EOR Task 1: 6 long-term sites -Provide up to 50 duplicate WQ grab samples for the DIY technology comparison study |
| <i>C.A.T.</i> | <i>n/a</i> | Reporting, volunteer oversight/training accounted for under staff management and coordination. |
| <i>D.I.Y.</i> | <i>n/a</i> | Reporting, D.I.Y. sampling accounted for under staff management and coordination. |
| <i>Lab Cost</i> | \$5,500 | Metropolitan Lab services |
| Lake monitoring | \$9,120 | |
| <i>CAMP program</i> | \$3,040 | - Surface water quality 4 lakes, volunteer oversight/training accounted for under staff management and coordination. Lab costs included. |
| <i>District staff</i> | \$6,080 | - Surface water quality 9 lakes. Lab costs included. - DO/temp profiles and bottom water samples on 6 lakes. Lab cost indicated below. - All staff time accounted for under staff management and coordination. |
| <i>Lab Cost</i> | \$2,500 | Instrumental Lab – bottom water Metropolitan Lab – TSS |
| Water Monitoring Reporting | \$21,933.00* | *EOR Task 2: 2023 Monitoring Report |
| Total Cost | \$70,877.25 | |



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Recommended Action

Proposed Motion #1: Manager _____ moves to approve the 2023 Monitoring plan as presented in this memo. Seconded by Manager_____.

Proposed Motion #2: Manager _____ moves to authorize the administrator, on advice of counsel, to enter into an agreement with EOR to complete *Tasks 1 & 2 as in accordance with the 4-04-2023 scope of work and in an amount not to exceed \$53,757. Seconded by Manager_____.

Attached:

EOR's 2023 Monitoring Proposed Scope of Work.

| | | | |
|----------------------------|---------------------------------------|-------------|-----------|
| Project Name | (3-003-A) District Monitoring Program | Date | 4-04-2023 |
| To / Contact info | CLFLWD Board of Managers | | |
| Cc / Contact info | Mike Kinney, District Administrator | | |
| From / Contact info | Rosie Russell, Cecilio Olivier MS, PE | | |
| Regarding | 2023 Water Monitoring | | |

The following is a proposed scope and budget for the District’s 2023 water monitoring efforts. The Board approved a total budget for Program 3-003 Monitoring & Data Assessment of \$184,229, of which \$60,000 was budgeted for stream monitoring (long-term and effectiveness) and the 2023 annual water monitoring report.

Task 1. Long-term Stream Monitoring:

This task covers flow monitoring, composite sampling (~10) collection, and stage data downloads at six stream sites (Forest Lake Outlet, Bone Lake Outlet, Bone Lake North Inlet, Big Comfort Lake Outlet, Big Comfort Lake Inlet, and Little Comfort Inlet).

This task also includes the installation and maintenance of 2 telemetry loggers, surveying, ISCO data downloads, bottle drop off at the Metropolitan Council’s lab, rating curve development, discharge and load analysis, project management, QA/QC, and data submittal to MPCA’s EQuIS database. EOR will drop off samples collected by the District in Little Comfort Lake to be analyzed by the Metropolitan Council Labs for VSS and TSS. This task also includes collecting 50 duplicate samples for DIY analysis. District staff will lead ISCO triggering and operation & maintenance.

Sampling analysis by the Metropolitan Council will include: Total P, Ortho-P, TSS, Volatile TSS, Chloride ion, Iron, Ammonia Nitrogen, Nitrate N, Nitrite N, Nitrite plus Nitrate, Total Kjeldahl Nitrogen. The analysis cost of all these parameters is not included in the estimate and will be paid separately by the District.

| Expense | Unit Description | Units | Unit Cost | Cost |
|-------------------|---|----------------------|-----------|--------------------|
| Labor Subtotal | | 216 hours | | \$28,802.00 |
| Mileage | Equipment installation visit, 100 miles round-trip @ \$0.655/mile | 1 visit | \$65.50 | \$65.50 |
| | 8 flow gauging visits, 100 mile round-trip x 2 staff @ \$0.655/mile | 8 visits x 2 staff | \$65.50 | \$1,048.00 |
| | 10 sample visits, 100 miles round-trip @ \$0.655/mile | 10 visits | \$65.50 | \$655.00 |
| | 10 bottles drop off, 25 miles round-trip @ 0.655/mile | 10 trips | \$16.38 | \$163.75 |
| Equipment Rental | 2 telemetry level loggers x 7 months | 2 loggers x 7 months | \$55.00 | \$770.00 |
| | Survey Equipment @ \$80/hour | 4 hours | \$80 | \$320.00 |
| Expenses Subtotal | | | | \$3,022.25 |
| Total | | | | \$31,824.25 |

Task 2. 2023 Water Monitoring Report

The water monitoring reporting in 2023 includes:

- 1) **Meeting with the CLFLWD to discuss plan format:** A coordination meeting with District staff to discuss how the monitoring plan should be structured to serve the District's needs most effectively. This will also be an opportunity to discuss any additional information to be included with the final deliverable (e.g., output spreadsheets).
- 2) **2023 Monitoring Report:** a summary report (similar to an executive summary format) with an annual update on climate trends, lake and stream water quality trends, lake progress towards water quality goals, and lake and stream annual water quality figures. Additionally, this task will include one-page lake factsheets for major District lakes highlighting lake characteristics, current conditions, long-term trends, and progress towards District goals; and an overall lake water quality grade for each lake and general information on lake water quality for the District website.

| Expense | Unit Description | Units | Unit Cost | Cost |
|--------------|----------------------------|------------|-----------|--------------------|
| Labor Total | Meeting with CLFLWD Staff | 4 hours | | \$683.00 |
| Labor Total | Final report (+QA/QC & PM) | 138 hours | | \$21,250.00 |
| Total | | 142 | | \$21,933.00 |

Recommended Motion

We recommend the Board approve this 2023 scope of work for EOR to conduct long-term stream monitoring for 6 sites and to complete the 2023 water monitoring report for a total cost of \$53,757.