MEMORANDUM
Comfort Lake-Forest Lake Watershed District

Date: February 13, 2026
To: CLFLWD Board of Managers
From: Mike Kinney, District Administrator
Subject: Operatins & Maintenance Program Update

Background/Discussion
The purpose of this agenda item is to present to the Board the Operations & Maintenance Program Update. A pre-recorded presentation is available on YouTube and attached is the Draft 2025 Operations & Maintenance Yearend Summary Report, which is available for discussion and approval.

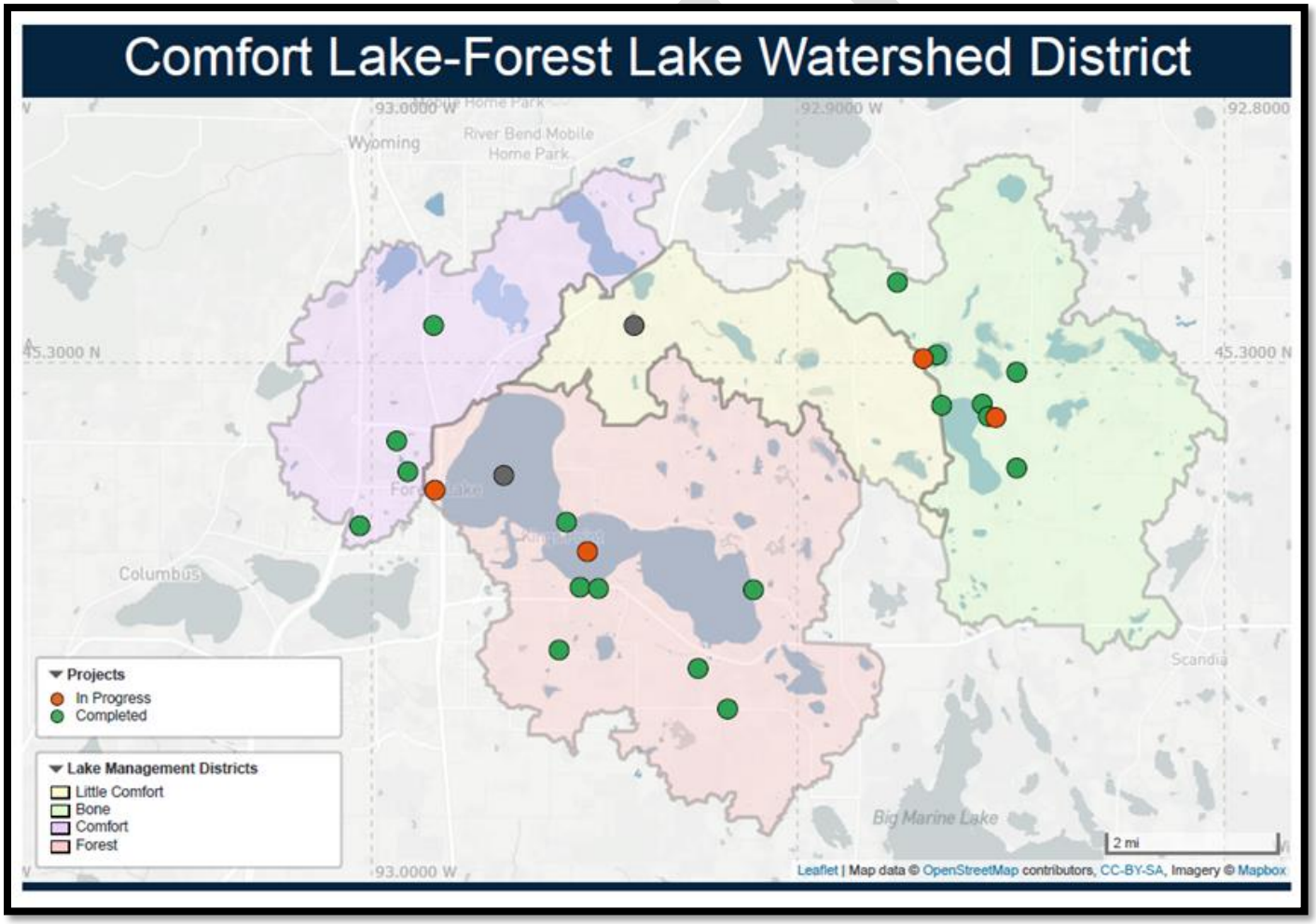
Recommended Actions:
Proposed Motion: Manager _____ moves to approve the Draft 2025 Operations & Maintenance Yearend Summary Report. Seconded by Manager _____.

Attached
Draft 2025 Operations & Maintenance Yearend Summary Report

CLFLWD
WATERSHED DISTRICT

Comfort Lake-Forest Lake Watershed District

2025 Operations & Maintenance Yearend Summary Report



Cover Image: CLFLWD Project Sites and associated Lake Management Districts available on the District website (Interactive Map - Comfort Lake Forest Lake Watershed District)

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Executive Summary

Operations & Maintenance (O&M) is a crucial element of the District's overall Projects program. O&M ensures that projects function as designed and maintain the water quality gains they have realized. Staff perform annual project operation tasks and conduct annual inspections to identify maintenance needs – including periodic water quality monitoring to further assess project performance.

In 2025, all projects implemented within the past 15 years were inspected by District staff. Routine operations tasks were performed, and several maintenance issues were identified and resolved by staff or a contractor. In general, District projects continue to perform as designed and only minor maintenance was needed. Much of the O&M effort in 2025 focused on three projects: the Bone Lake outlet stabilization, Edell wetland debris removal, and County Road 50 iron enhanced sand filter bed maintenance.

Two project areas were identified in 2025 through the O&M effectiveness water quality monitoring that warrant additional investigation – the Broadway Iron Enhanced Sand Filter and the Moody Wetlands. Staff will focus efforts on these areas in 2026 to determine if additional actions or larger maintenance efforts are needed.

As projects age and the District implements additional projects, O&M will become a more prominent part of the District's annual work plan and budget. As such, the program will require additional staff time and funding in future years to ensure success and continuation of the WQ gains these projects have provided to our local surface waters. We are thankful for the continuing support for this program and encourage consideration of future program needs in the coming budget cycle.

Introduction

The Operations and Maintenance (O&M) Program for Comfort Lake-Forest Lake Watershed District (CLFLWD) has been developed to ensure that past water quality improvement projects continue to function as designed. Annual inspections are an essential tool of this program. Utilizing visual inspections, and when appropriate, capacity testing techniques, District staff make sure that projects are functioning as

intended, reaching their maximum lifespan, and realizing their designed water quality benefits.

In 2022 District staff compiled all past projects into a comprehensive O&M manual with the purpose of streamlining the O&M program. This manual contains specific O&M instructions for each project as well as maintenance and monitoring schedules. The manual is updated annually as new projects are implemented and brought online. In 2024 an O&M database was created allowing for the improved tracking of annual inspections along with data collection and organization. Using these tools, District staff perform annual inspections with the purpose of identifying necessary maintenance needs and ensuring projects continue to function as intended.

There are several types of maintenance activities that may be performed that are further categorized as routine, non-routine, and major maintenance (Figure 1). Routine maintenance includes annual visual inspections, debris removal, and vegetation management. Occasional non-routine tasks such as structural repairs and sediment cleanouts can be completed to extend the life of a project. Both routine and non-routine maintenance can prevent major project rehabilitation or rebuilds that can be time-consuming and costly undertakings.

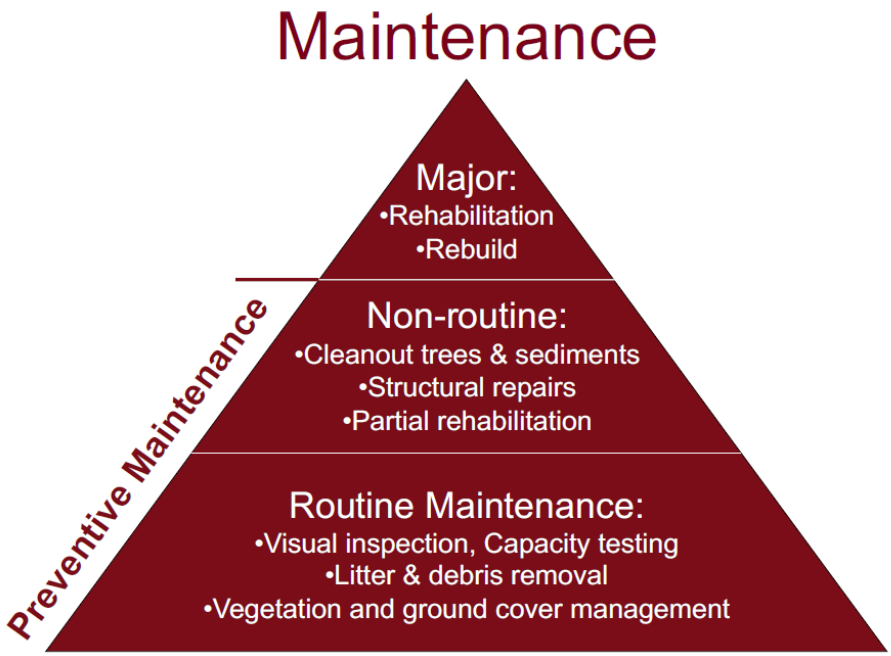

Figure 1: Maintenance Guidelines developed by Saint Anthony Falls Laboratory (SAFL)

Methods

Annual inspections are performed following the O&M schedule specific to each project site (Figure 2). Typically, these will be seasonal tasks that are important for ensuring projects are functioning as intended. Examples of typical operation and maintenance include installing stop logs at weirs, managing buffer vegetation, and raking/weeding of iron enhanced sand filter media to maintain designed infiltration rates.

Inspections are tracked using the Comfort Lake-Forest Lake Watershed District Web Data Portal (Figure 3). During a site visit District staff assess the project function and inspect external factors that could be negatively influencing projects – such as signs of erosion or tampering by either humans or animals. The O&M web application organizes and quantifies the inspection data and produces a score that helps to track project conditions. The user data and inspector observations are then used to determine if any maintenance is needed to keep projects functioning as intended (Figure 4). Photos are collected annually from established photo points, allowing for a visual record and historical references that are used to track changes over time.

An additional component of the annual O&M inspections is the routine water quality (WQ) monitoring that is used to further assess if projects are functioning as intended. This data informs District staff on the performance of a project and may point to future maintenance needs. Projects are sampled on a standard 3-year rotation unless otherwise warranted (Figure 2). This is accomplished by obtaining a water quality grab sample which is then processed by staff using a diagnostic colorimeter, the same analysis used by the District's DIY & CAT monitoring programs. If orthophosphate concentrations are observed to exceed an acceptable threshold this will result in a more thorough assessment and additional monitoring to determine the source of phosphorus and whether maintenance is required.

CLFLWD O&M Schedule - thru 2030

Project	Imp Yr	Annual Inspection	Operation Task	Effectiveness Monitoring 2022	2023	2024	2025	2026	2027	2028	2029	2030	Scheduled Maintenance 2022	2023	2024	2025	2026	2027	2028	2029	2030	Maintenance Task
3rd Lake Pond	2017	July			X			X			X				X			X			X	Riparian Buffer maintenance
Bixby Park Wetland	2016	May and October	stop logs	X			X			X												as needed based on inspection
Bone Lake Fish Barrier	2012/14	May and October	stop logs	.	.	.	.	.	.	.	.	.										as needed based on inspection
Bone Lake - DCB Wetland	2021	June				X			X			X										as needed based on inspection
Bone Lake - Edell Wetland	2019	June		X			X			X												as needed based on inspection
Bone Lake - NE Legacy Load Wetland	2022	June				X			X			X										as needed based on inspection
Broadway IESF	2012	July		EOR			X			X							x					replace IESF media? (City responsibility)
CR50 IESF	2023	April and Nov	Activate or winterize							X						x		x		x		Rake and weed filter media. replace IESF media in 2040?
Forest Lake outflow fish barrier	2021	July		.	.	.	.	.	.	.	.	.										as needed based on inspection
Hilo Ln IESF	2014	July			X			X			X								X			replace IESF media? Coordinate all maitennace with City
Moody Capstone Projects (3)	2024	June									X											as needed based on inspection
Moody Lake Aerator	2015	January thru March	Activate Aerator	.	.	.	.	.	.	.	.	.	X					X				service pumps and aerators
Moody Lake - Mattson Wetland	2017	May			X			X			X											as needed based on inspection
Moody Lake - Peterson Wetland	2020	May			X			X			X											unknown
North Shore Trail IESF							X			X										X		replace IESF media?
Penshorn IESF	2014?	June		X			X			X									X			replace IESF media?
Shields Lake Aerator	2020	January thru March	Activate Aerator	.	.	.	.	.	.	.	.	.				X					X	service pumps and aerators
Shields Lake - FHGC Stormwater Reuse Pond	2019	July				X			X			X				x			x	XX		(XX) excavate pond sediments, (x) riparian buffer maintenance
Sunrise River HWY 61 Wetland	2023	July								X												as needed based on inspection
Target IESF	?	July				X			X			X										all maintnenance done by Target
WJD6 Tributary Wetland	2024	July									X											as needed based on inspection

Figure 2: CLFLWD O&M Schedule from 2022-2030

Select Agree or Disagree if Applicable			
1	No signs of erosion present	○ Agree	○ Disagree
2	No signs of unwanted deposition	○ Agree	○ Disagree
3	No unwanted vegetation growth	○ Agree	○ Disagree
4	Vegetation is established to a satisfactory level	○ Agree	○ Disagree
5	All project infrastructure is intact and functional	○ Agree	○ Disagree
6	No major maintenance is needed	○ Agree	○ Disagree
7	No signs of tampering by humans or animals	○ Agree	○ Disagree
8	No signs of debris dumping	○ Agree	○ Disagree
9	Project functioning as designed	○ Agree	○ Disagree
10	Project conforms to designed specifications	○ Agree	○ Disagree
SCORE	*One Point per applicable "Agree"*	**0**	**of 0 max**

Figure 3: CLFLWD web data portal inspection report questionnaire section.

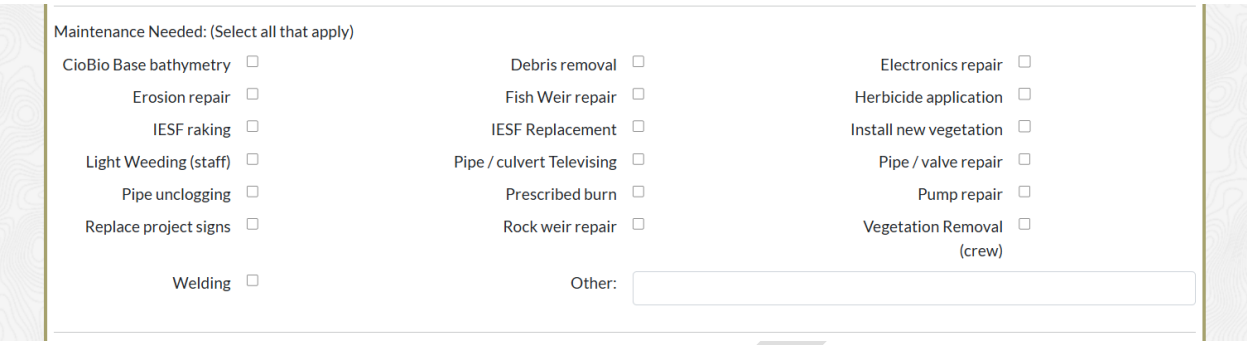

Figure 4: CLFLWD web data portal inspection report maintenance needed section.

Operations and Maintenance

Bone Lake Management District

All nine projects in the Bone Lake District were inspected in 2025 following O&M manual guidelines (see Tables 1 & 2 below). Many of the projects inspected were found to be functioning as designed with no major maintenance needs identified. However, several projects did require minor repair or maintenance above and beyond what would be considered routine.

The **Bone Lake Fish Barrier** outlet sustained minor damage resulting from ice heaves during the 2024/2025 winter. Staff obtained repair quotes that exceeded current O&M funding levels and as such pivoted to perform repairs in-house by reinforcing and stabilizing the structure. This consisted of attaching a new crossbeam to secure and reinforce the top panels of the weir structure. District staff were able to effectively repair the damage for less than $200 in materials and will carefully monitor this project moving forward to evaluate the repairs.

A minor electrical issue that repeatedly tripped the breaker unit at the **Moody Aerator** was identified through the annual inspection and testing of the system. Staff replaced the worn breaker and installed weatherproofing around the pump outlet cover for a fraction of the quoted repair costs.

The Bone Lake SE Drained Wetland (Edell) project has had ongoing issues with debris accumulating at the outlet structure due to beaver activity. Heavy equipment

was required for debris removal resulting in the District contracting with Edge Ecosystems Inc to remove excess beaver debris from outlet structure and restore designed pond levels. Beavers were trapped and removed by the landowner to ensure the longevity of this maintenance.

O&M water quality monitoring in the Bone Lake Management District indicated that most projects sampled in 2025 had expected orthophosphate levels. Elevated readings were noted for the two **Moody Lake Wetland** (Mattson & Peterson) projects, potentially reflecting a change in land management practices in these areas and/or the aging of these projects. Additional monitoring is needed to evaluate these findings and to determine future maintenance solutions; if any.

Bone Lake Visual Inspections & Assessment

Project Name	Visual Inspection	WQ Sample	Visual Inspection Assessment
Bone Lake Fish Barrier (Inlet & Outlet)	Yes	n/a	Ice heave damage observed at outlet
Bone Lake NE Legacy Load Wetland Project	Yes	Yes	Project functioning as intended.
Bone Lake SE Drained Wetland (Edell)	Yes	n/a	Outlet structure compromised by beaver activity
Bone Lake SE Drained Wetland (DCB)	Yes	Yes	Project functioning as intended.
Moody Lake Wetland Rehab (Mattson)	Yes	Yes	Minor culvert maintenance required due to beaver activity
Moody Lake Wetland Rehab (Peterson)	Yes	Yes	Project functioning as intended.
Melanie Trail Roadside BMP's	Yes	n/a	Project functioning as intended.
Moody Aerator	Yes	n/a	Minor electrical repair needed
Moody Capstone (Round Barn & Park)	Yes	n/a	Project functioning as intended.
Moody Capstone (Southern Wetland)	Yes	n/a	Project functioning as intended.

Table 1: Bone Lake Visual Inspections & Assessment

Bone Lake Project Maintenance

Project Name	Routine Maintenance	Non-Routine Maintenance
Bone Lake Fish Barrier (Inlet & Outlet)	Debris removal performed by District staff for inlet and outlet structures Bone Lake Inlet Spring: Install stop logs Fall: Remove stop logs	Ice heave damage required minor reinforcement of the barrier structure. Staff completed repairs in June for a cost of less than $200.
Bone Lake SE Drained Wetland (Edell)	Early Spring: debris & sediment removal from outlet structure by staff	Edge Ecosystems Inc was contracted to remove excess beaver debris from outlet to restore designed pond levels at a cost of $885.
Moody Lake Wetland Rehab (Mattson)	Debris removal performed by District staff at culvert structure between ponds.	
Moody Aerator		Circuit breakers repeatedly trigger upon testing. District staff were able to fix the issue with $54 in supplies.
Moody Capstone (Round Barn & Park)	Buffer vegetation maintenance performed by staff with the purpose of removing invasive species.	

Table 2: Bone Lake Management District Maintenance performed in 2025

Comfort Lake Management District

All four projects in the Comfort Lake District were inspected in 2025 (see Tables 3 & 4 below). Most projects inspected were found to be functioning as designed with no major maintenance needs identified. However, one project will likely require repair or maintenance above and beyond what would be considered routine.

Dense vegetation growth was observed on the **Broadway Ave Iron Enhanced Sand Filter** bed. This project was a 2014 joint effort between the CLFLWD / City of Forest

Lake. As it is located on City property, the City is responsible for all project maintenance. The design included an organic mulch component in the filter bed; a design element no longer recommended for iron-sand filters. The presence of dense vegetation growth may be due to this compost component or may be an indication of available phosphorus that is not being captured as project intends. Effectiveness monitoring indicates inconsistencies in the removal rates for this project, and as such, additional evaluation, including iron-sand testing, is recommended. If this additional monitoring indicates the iron-sand media is approaching the expected end of its lifespan, the District could work with the City of Forest Lake to apply for grant funds to replace the iron-sand media and restore the function of this project. The District has begun this discussion with the City and could apply for a Clean Water Fund grant as soon as late-March 2027.

Project effectiveness monitoring in the Comfort Lake management district indicated that most projects sampled in 2025 were within expected orthophosphate levels. Elevated readings were noted at the Broadway Ave Iron Enhanced Sand Filter. As noted before, this project may be reaching the end of its expected lifespan and will likely require non-routine maintenance in the future.

Comfort Lake Visual Inspection & Assessment

Project Name	Visual Inspection	WQ Sample	Visual Inspection Assessment
Bixby Park Stormwater Treatment Project	Yes	Yes	Project functioning as intended.
Broadway Ave Iron-Enhanced Sand Filter	Yes	Yes	Non-routine maintenance may be necessary, potential media replacement.
Target Store Retrofit	Yes	Yes	Project functioning as intended.
Sunrise River Highway 61 Wetland Enhancement	Yes	Yes	Project functioning as intended.

Table 3: Comfort Lake Visual Inspections & Assessment

Comfort Lake Project Maintenance

Project Name	Routine Maintenance	Non-Routine Maintenance
Bixby Park Stormwater Treatment Project	North & South Weirs Spring: Install stop logs Fall: Remove stop logs	

Table 4: Comfort Lake Management District Maintenance performed in 2025

Forest Lake Management District

Nine projects completed in the Comfort Lake District were inspected in 2025 (see Tables 5 & 6 below). All projects inspected were found to be functioning as designed with no major maintenance needs identified.

Within this management District, staff spent the most staff time, and a large proportion of the O&M budget, on maintenance of the **County Road 50 Iron Enhanced Sand Filter** Project. Periodic raking and weeding of the filter bed is needed to maintain proper infiltration rates. As such, Edge Ecosystems was contracted to complete additional maintenance of this project. Edge Ecosystems removed accumulated biofilm, removed weeds, and/or tilled the filter bed on three separate occasions to improve infiltration rates and remove accumulated sediments. Maintenance at this project will continue to be a large proportion of the O&M workload in future years.

Water quality monitoring results for the Forest Lake Management District indicated that all projects sampled in 2025 were functioning as designed with significant decreases in orthophosphate across all projects.

Foret Lake Visual Inspection & Assessment

Project Name	Visual Inspection	WQ Sample	Visual Inspection Assessment
3RD Lake Pond Wetland Treatment Basin	Yes	Yes	Project functioning as intended
Washington Judicial Ditch 6 Wetland Restoration	Yes	Yes	Project functioning as intended.

County Road 50 Iron Enhanced Sand Filter	Yes	Yes	Project functioning as intended.
Hilo Lane Stormwater Retrofit Project	Yes	Yes	Project functioning as intended
North Shore Trail Iron Enhanced Sand Filter	Yes	Yes	Project functioning as intended.
Shields Lake Stormwater Harvest & Irrigation Reuse	Yes	Yes	Project functioning as intended.
Forest Lake Weir	Yes	n/a	Project functioning as intended
Shields Lake Fish Barrier	Yes	n/a	Project functioning as intended.
Shields Lake Aerator	Yes	n/a	Project functioning as intended.

Table 5: Forest Lake Visual Inspections & Assessment

Forest Lake Project Maintenance

Project Name	Routine Maintenance	Non-Routine Maintenance
County Road 50 Iron Enhanced Sand Filter	District staff performed vegetation removal and raking of biofilm crust.	Edge Ecosystems was contracted to perform periodic maintenance which included vegetation maintenance & tilling of filter bed.
Forest Lake Weir	Replace two weir bolts. Removal of debris from weir.	

Table 6: Forest Lake Management District Maintenance performed in 2025

2025 Maintenance Overview

2025 O&M Summary

In 2025, routine maintenance and visual inspections were completed for all CLFLWD past projects as per the Comprehensive O&M manual's guidelines. Through the annual inspection and evaluation process, several non-routine maintenance issues were identified and addressed by District staff. Highlights from the 2025 maintenance efforts are presented below.

- The Bone Lake Fish Barrier (outlet) sustained minor ice heave damage during the past winter that was repaired/stabilized by Staff.
- Staff were also able to stretch the O&M budget by repairing a minor electrical issue with the Moody Aerator for a fraction of the quoted repair costs.
- Edge Ecosystems Inc. were contracted to complete two maintenance tasks that required the use of heavy machinery. Edge ecosystem removed beaver related debris from the outlet from the Edel Wetland Project and completed periodic maintenance of the sand filter bed at the County Road 50 Iron Enhance Sand Filter Project.

As part of the O&M evaluation process, water quality samples were collected by CLFLWD Staff at many of the projects to determine project effectiveness and further evaluate O&M needs. Results indicated that most of the projects are performing as intended. Elevated readings were noted at the two Moody Lake Wetland Projects and at the Broadway IESF project. Additional monitoring is needed to further evaluate these findings and to determine future maintenance solutions.

2026 O&M PLANS

Plans for 2026 include annual project inspections and as well as implementation of all routine project operation and maintenance tasks. Effectiveness monitoring will be performed by District staff following the CLFLWD O&M schedule (3-year project rotation). This includes 3 or more DIY water samples taken after a 0.75-inch precipitation event during a given year for scheduled projects. Additional water quality samples will be taken on the Moody Lake Wetland projects to further evaluate the elevated readings observed in 2025 and identify solutions. Staff will also investigate the Broadway Ave IESF project to determine if replacement of the iron-

sand media is needed. If so, staff will work to assist the City of Forest Lake to apply for an implementation grant for this effort.

As projects age and the District continues to develop and implement future projects, O&M will become a more prominent part of the District's annual work plan and budget. As such, in 2026, staff will strive to improve O&M efficiency and stretch the program budget. Staff will work to prioritize and streamline O&M project inspections, maintenance, and effectiveness monitoring, as well as seek additional funding opportunities. To this end, CLFLWD has received funding for the use of a Conservation Corps work crew to assist in the maintenance of the CR50 IESF project. Staff will work with this crew to maintain this facility, foregoing the need to contract out this work to a private company. The savings from this crew may be used to purchase equipment needed for future O&M efforts or to fund unforeseen project maintenance.

Future Funding Considerations

As mentioned above, District O&M needs will continue to increase as additional projects are implemented and past projects continue to age and approach the end of their expected lifespans. As such, staff anticipate there will be a need for an increase in the O&M budget and staffing levels moving forward. The District currently lacks the equipment and related infrastructure to undertake much of the needed project maintenance and has commonly had to contract out this work. The purchase of maintenance equipment would improve efficiency of staff maintenance efforts, reduce the need for contracting outside consultants, and help to reduce the overall O&M Program's expenditures. The purchase of equipment is especially relevant with the recent purchase of the 238-acre Bone Lake South Nature Area (BLSNA) and the upcoming construction of the Heath Ave Iron-Enhanced Sand Filter. Due to its size, the large BLSNA property will be hard to access and maintain without a small tractor and/or ATV. Similarly, past experiences with Iron-Enhanced Sand Filters indicates that frequent maintenance is required to keep them operating efficiently. An ATV with attachments (drag, leaf sweeper, etc.) would greatly improve maintenance efficiency of the sand filters, resulting in long-term savings.