memo



5/8/2025

Date

Project Name	Settlers Glen Iron Enhanced Sand Filter
To / Contact info	BCWD Board of Managers
Cc / Contact info	Karen Kill, District Administrator
From / Contact info	John Sarafolean; Ryan Fleming, PE / EOR
Regarding	2025 Maintenance & Operations Scope of Services

Background

The purpose of this memorandum is to outline maintenance and reporting tasks for operation of the Settlers Glen Iron Enhanced Sand Filter (IESF) in 2025. This was the first application of its kind using stream stage to control a pump that charges the filter (Stormwater "Pump-and-Treat"). The District has been operating and monitoring the project performance since installation in 2014.

A major change is that beavers have settled in the tributary that the pump draws water from (Pump harvest pond). Their activity is enhancing wetland hydrology, restoring the historic sedge meadow by raising water levels and removing early succession tree species so attempts are being made to coexist. Beavers built a 100-foot dam at the harvest pond outlet in 2024, raising water levels and inundating pump system flow meter components. To mitigate this, a Clemson beaver leveler was installed in fall 2024. In 2025, beavers built additional dams downstream, further raising water levels along the tributary, making continued efforts to co-exist necessary.

2025 Scope of Services

Task 1 - System Status: Remote and in-person pump operation, inspections, and reporting

- **On-going operation and maintenance** of the project involves remote desktop monitoring and adjustment of the pump settings based on stream stage and weather conditions, site visits to check operation, vegetation, sediment accumulation, erosion, beaver activity, Clemson leveler operation, and filter surface condition.
- EOR will coordinate with a contractor to conduct the **lift station performance inspection** in 2025. It is recommended that a qualified technician inspect the pump station every two years, based on the mild conditions for the type of pump installed at the IESF (Intermittent pump duty cycle and relatively low abrasiveness of the water being pumped). The pump system was thoroughly inspected in 2023 by Tri-State Pump and Control, Inc., therefore it is due to be inspected in 2025. Contractor costs to perform the inspection is not included in EOR's scope (estimated at \$1,000 and will be invoiced directly to BCWD).

Task 2 – Site Maintenance: Filter maintenance, Clemson Leveler Installation, Outfall Maintenance

• The **filter surface** should be aerated and raked monthly during the growing season to loosen the upper portion of the sand and encourage movement of water into, rather than across, the filter. EOR will coordinate with Washington Conservation District seasonal BMP maintenance staff to continue to conduct this maintenance.

- EOR will install two additional **Clemson levelers** in the additional beaver dams to keep the water level from rising above the pump components, but preserving the benefits of the beaver dams on the surrounding wetlands. All levelers will be inspected and maintained throughout the year.
- EOR will install **additional armor at the filter outfall** where the stream has widened and eroded the bank with class 1 riprap. The stream location where the filter drain tile discharges widened significantly over the past year and began destabilizing the area around the outfall. This work was to be completed last year, but the pipe outlet was inundated for most of the year due to beaver dam influence. With the planned Clemson leveler work, it is expected that the water level will return to normal, exposing this area, making access possible for installation.

Scope

The following table outlines the cost and hours anticipated for the 2025 season.

	Task	Description	Hours	Cost
1.	System	Remote desktop monitoring & pump setting adjustments,	47	\$8,458
	Status	Monthly site visits, special Clemson leveler/beaver visits,		
		mileage, system operation, and documentation		
2.	Site	Filter surface maintenance coordination, lift station	39	\$7,986
	Maintenance	inspection contractor coordination, riprap armor		
		placement at outfall, Clemson leveler installation		
3.	Performance	Review of 2025 monitoring data, system performance	50	\$8,620
	Report, O&M	evaluation, and reporting. Update project Operation &		
	Manual Update	Maintenance Manual		
Total		136	\$25,064	

*Given the weather-dependent nature of the work, the costs are estimates only. Additional project needs will be brought to the attention of the District Administrator and outlined in a separate scope of work. Vegetation maintenance of this project is included in a separate, District-wide vegetation maintenance scope. Contractor fee for lift station inspection is not included in this scope.

Requested Action

Consider approval of this scope of services for an estimated cost of \$25,064 from account 948-0000.