

Project Name | Settlers Glen Iron Enhanced Sand Filter

Date | 1/6/2023

To / Contact info | BCWD Board of Managers

Cc / Contact info | Karen Kill, District Administrator

From / Contact info | Ryan Fleming, PE

Regarding | 2023 Scope of Services

Background

The Settlers Glen Iron-Enhanced Sand Filter has been in operation since 2014. The on-going operation and maintenance of the project involves remote desktop monitoring and alteration of the pump settings based on stream stage and weather conditions, site visits to monitor operation, vegetation, sediment accumulation, erosion, and filter surface condition. EOR also coordinates with the WCD for filter surface maintenance, outflow monitoring, and sampling.

Update

In addition to routine monitoring and maintenance, we anticipate the following maintenance activities in 2023.

1. Pump & lift station performance inspection – This is recommended every other year due to the light duty required for the project (based on pumping frequency, duration, and relatively clean water). EOR's cost estimate includes scheduling and coordinating with the contractor, the inspection by a pump and controls specialist has typically been contracted directly by the District at an approximate cost of \$800 (this is not included in EOR's scope below).
2. Filter media sampling & analysis – In 2022, the four effluent samples exceeded 60 to 70 micrograms per liter which may indicate that the iron is approaching the end of its phosphorus binding capacity. EOR will collect four to five samples along the filter bed and analyze the laboratory results for total phosphorus and total iron. A summary memorandum outlining the findings and next steps will be provided.
3. Pump Harvest Pond Maintenance – Sediment deposition has reduced the capacity of the pump harvest pond to an average water depth of one foot. Sediment was removed to restore the pond to design contours in February 2019. Since then, erosion has caused widening and downcutting of the upstream tributary resulting in deposition wherever the flow slows down, such as the pump harvest pond and in McKusick Lake. Tributary stabilization measures were installed in 2021, however the deposited sediment remains. EOR prepared a plan set and specifications as well as sent a request for contractor quotes in December of 2022 with contractor selection anticipated in January 2023. In 2023 EOR will complete the permitting process with the MnDNR, USACE, and WCA, conduct construction administration, field observation, and project close-out with the selected contractor.
4. Annual Report - An end of season performance evaluation from the sampling results will be provided as well as updating the project operation and maintenance manual based on the activities throughout the year (pump on/off or variable speed drive setting alterations, additional maintenance performed outside of the norm, etc.). Per Board direction in 2022, additional lifecycle cost and total estimated project benefit will be included in the 2022 annual report.

Scope

The following table outlines the cost and hours anticipated for the 2023 season.

Task	Description	Hours	Cost
0. Routine System Status Monitoring & Maintenance	Remote desktop monitoring & pump setting adjustments Monthly site visits, mileage, and documentation. Filter surface maintenance coordination, addressing ongoing operation needs.	36	\$6,250
1. List Station Inspection	Schedule and coordinate inspection by contractor (contractor fees estimated at \$800 are separate)	4	\$675
2. Filter Media Sampling	Collect 4-5 samples along filter, laboratory analysis, results review, and summary memorandum.	23	\$4,200
3. Pump Harvest Pond Maintenance	Permitting, construction administration, field observation, project close-out.	67	\$11,400
4. Performance Report, O&M Manual Update	Review of 2021 monitoring data, system performance evaluation, and reporting. Update project Operation & Maintenance Manual	36	\$5,600
Total		166	\$28,125

*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.

Requested Action

Consider approval of this scope of services for an estimated cost of \$28,125 from account 948-0000.