Project Update – Oak Glen Golf Course Stormwater Reuse for Irrigation

In October 2019, following completion of the Oak Glen Golf Course Stormwater Reuse Feasibility Study (EOR technical memo dated 7/5/2019) and a successful application to the MN BSWR for a Clean Water Fund, Projects and Practices Grant, the Brown’s Creek Board of Managers adopted Resolution 19-08 ordering the Oak Glen Golf Course Reuse Project. EOR began work on the design phase of this project in March 2020. This memo contains a summary of the work completed to-date on this project and the proposed timeline going forward.

Project Description

The reuse system will pump stormwater from the wetland north of Lake McKusick to the primary golf course irrigation pond at the Oak Glen County Club on the north side of McKusick Road. Pumped stormwater will be used to irrigate the golf course. The reuse system will decrease groundwater pumping by the golf course, reduced runoff thermal impact to Brown’s Creek, and phosphorus loading entering Brown’s Creek.

Data Collection Phase

EOR compiled and reviewed relevant asbuilt survey data including data for McKusick Road and buried utilities along the road corridor, the irrigation pond at Oak Glen Golf course, and outlet control structure in Lake McKusick and the wetland to the north. In April, EOR completed a bathymetric survey of the Lake McKusick wetland and collected additional site survey data to fill data gaps at the project location. A geotechnical investigation was also completed by American Engineering Testing (AET) in April in the locations of the proposed infrastructure. New data were used to develop the existing conditions plan and a preliminary design for the reuse system.

Engineering Design Progress

EOR is currently working on development of final construction plans for the project. Key components of the project design include:

- The project entails relatively little land disturbance (approximately 0.75 ac) and apart from the pump equipment pad, no increase in impervious surface is proposed.
- To avoid excessive costs in repairs and re-vegetation within the golf course and road closures and repaving, along with Washington County’s suggestion, the irrigation reuse storm pipe will be horizontally directional drilled under McKusick Road (County Road 64).
- The design includes a small area of excavation along the wetland shoreline to provide a sump for the pumping system, along with the pipe placement.
• At the 60% design phase, estimated construction cost are consistent with estimates provided by EOR in the Oak Glen Golf Course Stormwater Reuse Feasibility Study.

• The final design will also include a replacement outlet control structure at the north end of the Lake McKusick wetland. EOR is reviewing conditions that currently cause flooding on the adjacent golf course and may propose additional improvements to the outlet system configuration, if warranted. Any such change in the scope of the project will be brought to the board for discussion prior to application for permit approvals.

On June 10th, the BCWD administrator and EOR staff met via conference call with Washington County engineering staff to review 60% design plans and discuss permits required for directional drilling and wetland water level management. Per request of the County, EOR will submit a 100-year flood analysis to the county to demonstrate the project will not negatively impact water levels in county catch basins along McKusick Road. The 60% design construction plan set is attached to this memo for review.

Proposed Timeline for Completion

The projected timeline for completion of this project is as follows:

July-August 2020 – Secure ownership and maintenance agreements with Oak Glen Golf Club

August-September 2020 - Final design and permit approvals including:

• WCA Permit (Washington County)
• Right-of-Way Permit (Washington County)
• Water Appropriations Permit (DNR)
• Grading Permit (City of Stillwater)
• Shoreline Alteration, Erosion Control (BCWD)

September-October 2020 – Public bidding process

November 2020 – January 2021 – Construction phase

Spring 2021 – Site touch up work. Development of educations material and signage.
NOTES:

1. CONTRACTOR SHALL NOTIFY OGCC, CITY OF STILLWATER, AND WASHINGTON COUNTY A MINIMUM OF 48 HR PRIOR TO DIRECTIONAL DRILLING.

CONTRACTOR SHALL AVOID IMPACT TO GOLF COURSE TEES, FAIRWAYS, ANDGreens UNLESS AUTHORIZED BY ENGINEER (TYP.)

CONNECT ELECTRICAL AT EXISTING STRUCTURE

12" HDPE INLET W/ RODENT GUARD

10' HDPE OUTLET W/ RODENT GUARD

77' LF DIPS 10' HDPE DR11 (TRENCH INSTALLATION)

GATE VALVE & BOX
RIM: 853.0
INV: 848.0

LIFT STATION
RIM: 857.0
INV IN/OUT: 849.0
SLUMP: 843.0

303 LF 10" DIPS HDPE DR11 (HORIZ DIRECTIONAL DRILL)

GATE VALVE & BOX
RIM: 855.0
INV: 849.0

TRENCH 3 oz ELECTRICAL

ELECTRICAL CONTROL CABINET

CHECK VALVE STRUCTURE
RIM: 857.0
INV IN/OUT: 849.0

DIRECTIONAL DRILL UNDER ROAD

STAGING AREA

WETLAND

IRRIGATION POND

CONSTRUCTION LIMITS

MCKUSICK RD N  (COUNTY RD 64)