

Applicant: Chris Long; City of Minnetonka
Consultant: Jake Newhall; WSB
Project: Outlet Pipe Reconstruction
Location: Glen Lake: Minnetonka
Rule(s): 2, 3, 5 and 6
Reviewer: BCO

General Background & Comments

The City of Minnetonka is proposing to reconstruct the pipe outlet from Glen Lake (Lake) to the wetland complex (Wetland) located upstream of T.H. 62. The existing outlet pipe is a 36-inch clay tile system that is broken and non-functional. Over the past several years, highwater levels within Glen Lake have been observed prompting the City to propose a replacement of the system. The Lake outflow discharges through an existing concrete box outlet structure (having a weir with a 3-foot by 1.5-foot orifice) and then a 36-inch pipe system to the downstream Wetland. There is a surface overflow on the south side of the Lake at elevation 904.7 M.S.L. For the 100-year, 24-hour storm event based on the District's XP-SWMM model, the orifice will pass approximately 20 cubic feet per second (c.f.s.) thru the outlet structure and pipe system with approximately 100 c.f.s flowing overland at the surface overflow. The proposed project does not include modifications to the outlet structure therefore maintaining the existing outflow capacity from the lake. The replacement pipe is proposed to be a 44-inch span reinforced concrete arch pipe (RCPA) - hydraulically equivalent to the existing 36-inch pipe. The project is located downstream of Glen Lake and proposes no work within the Lake or the floodplain of the Lake.

The 625-feet of replacement pipe will follow the same alignment as the 36-inch tile system to the Wetland complex. This wetland has not been identified as a Public Waters Wetland but is governed by the requirements of the Wetland Conservation Act (WCA). The City of Minnetonka is the local governmental unit (LGU) administering the requirements of WCA. Upon completion of the pipe installation, disturbed areas will be returned to existing conditions. At the system outlet, accumulated sediment, approximately 200 cubic yards, will be excavated and removed with riprap installed at the flared end section of the replacement pipe for energy dissipation.

As stated, the City of Minnetonka is the LGU administering the requirements of WCA. A wetland boundary determination has been completed and approved by the LGU. The WCA permit application submitted has identified activities within the Wetland as a no-loss with temporary impacts in accordance with MN Rule 8420.0415, Subpart H. After the pipe is installed, the area will be returned to existing conditions and revegetated with native seed

mixture 34-271. No fill below elevation 902.6 M.S.L.¹, the 100-year highwater elevation of the Wetland, is proposed.

The Minnesota Department of Natural Resources has indicated that the receiving Unnamed Stream (M-055-005-001-003), thru the Wetland, is a public watercourse and the MDR's jurisdiction is limited to the pipe outfall. The MDNR is waiving jurisdiction for work associated with the proposed pipe outfall as this activity will be authorized by under DNR General Permit #1997-6112 if permitted under the NMCWD rules.

The District's requirements for both stormwater management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area will be altered, Rule 5.2.1a and b, respectively. The land-disturbing activities will be for utility work (installation of the outlet pipe and outfall) within the linear corridor of the existing 36-inch tile system. The project creates no new or fully reconstructed impervious surface (i.e., less than one acre of new impervious), so under section 4.2.4, no stormwater management is required. The project is exempt from the requirements of the NMCWD Stormwater Management Rule.

The District's Waterbody Crossings and Structures Rule 6.0 applies to the project because of installation of the outlet and outfall into the wetland, Rule 6.2.

Exhibits

1. Permit Application dated June 11, 2021.
2. Plans dated June 28, 2021, prepared by WSB.
3. Permit Application Narrative dated June 28, 2021 prepared by WSB.
4. Glen Lake Outlet Wetland WCA Application dated August 4, 2021 prepared by WSB for the City of Minnetonka.
5. E-mail correspondence dated May 8, 2021 from the Minnesota Department of Natural Resources stating that the receiving Unnamed Stream (M-055-005-001-003) is a public watercourse and the MDR's jurisdiction is limited to the pipe outfall. The e-mail correspondence waives jurisdiction for work associated with the proposed pipe outfall as this activity will be authorized by under DNR General Permit #1997-6112 if permitted under the NMCWD rules

2.0 Floodplain Management and Drainage Alterations

Minnetonka will undertake land-altering activities below the 100-year frequency flood elevation of the Wetland complex upstream of T.H. 62. The installation of the reconstructed pipe system and outfall involves placement of riprap below the 100-year flood elevation of the wetland (902.6 M.S.L.) for energy dissipation at the outfall. Rule 2.2.1a states any alteration of fill of land below the 100-year flood elevation of Nine Mile Creek or another waterbody or any fill below the 100-year flood elevation of a constructed stormwater facility in the watershed requires a permit, except no permit under this rule is required for the installation of riprap to dissipate energy from the outflow into a waterbody as long as the design material are consistent with the standards in NMCWD Rule 7.0. The standards in Rule 7.2.2 states

¹ Minnetonka has not yet adopted the updated 100-year flood elevation.

activities in incidental wetlands or for utility improvements or repair that are subject of a no-loss or utility exemption from the relevant LGU do not require a permit under Rule 7. As previously stated, the City of Minnetonka being the LGU has determined the proposed work as a no-loss in accordance with MN Rule 8420.0415 – temporary impacts.

In accordance with Rule 2.2.1c a permit under Rule 2 is not required for maintenance or in-kind replacement of existing public infrastructure that does not decrease floodplain storage volume. The project does not propose a decrease in the flood storage of the wetland for the installation of the in-kind pipe system or the riprap at the outfall.

3.0 Wetlands Management

Minnetonka, as previously stated, is the Local Government Unit responsible for administering the Wetland Conservation Act in the city and is charged with applying WCA requirements to activity potentially draining or filling the Wetland at the outfall location. The city is pursuing a no-loss WCA exemption, MN Rule 8420.0415, subpart H, for temporary wetland impacts associated with the installation of the outfall pipe, riprap at the outfall and for the excavation of approximately 200 cubic yards of accumulated sediment at the outfall of the pipe system. Rule 3.2.2a states that the District's buffer requirements, section 3.4, does not apply to wetlands that are disturbed by utility improvements or repairs that are the subject of a no-loss or exemption determination from the relevant LGU.

5.0 Erosion and Sediment Control

The District's requirements for erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 5.2.1a and b, respectively.

The erosion control plan prepared includes installation of sediment control logs and floatation silt curtain. Native seed mixtures will be implemented for final stabilization measures.

If the overland flow from the Lake (approximately 100 c.f.s.) follows the reconstructed pipe alignment, restoration with a stabilization material (e.g., soil reinforcement mat) capable of handling the flow rate and velocity and minimizing the potential of erosion should be installed.

The contractor for the project will need to designate a contact who will remain liable to the District for performance under the District's Erosion and Sediment Control Rule 5.0 from the time the permitted activities commence until vegetative cover is established, in accordance with subsection 5.4.1e.

6.0 Waterbody Crossings and Structures

The District's Waterbody Crossings and Structures Rule 6.0 applies to the project because the outfall and associated work will involve construction in the bank of the wetland/creek.

Rule 6.3.1 states construction, improvement, repair, or removal of a waterbody crossing in contact with the bed or bank of a waterbody:

- a) *Must retain adequate hydraulic capacity and assure no net increase in the flood stage of the pertinent waterbody:*

As stated in the above discussion, the project does not propose changes, modifications or alterations of the outlet control structure which controls the outflow discharge from

Glen Lake. The 44-inch RCPA replacement pipe is to provide an in-kind capacity of the existing 36-inch clay tile system.

b) *Must retain adequate navigational capacity pursuant to any requirements of the waterbody's classification by the District:*

The wetland at the outfall of the conveyance system is not used for navigational purposes.

c) *Must not be reasonably likely to significantly adversely affect water quality, change the existing flowline/gradient, or cause increased scour, erosion, or sedimentation:*

This is addressed in the above discussion for Rule 6.3.1a.

Riprap installed at the outfall of the proposed pipe system will dissipate energy from outflow velocities as to not have a significantly adverse effect on water quality from erosion or scouring at the discharge point of the pipe system to the wetland.

d) *Must provide post-project wildlife passage along each bank and riparian area by means that:*

1. account for wildlife that are native to the area or may be present, and
2. conform to any requirements imposed by NMCWD's classification of the waterbody.

The project will not permanently change conditions that will deter wildlife (deer, racoons, turtles, birds) from using the area adjacent to the outfall discharge point of the pipe system. Construction activities may temporarily displace wildlife until completion of construction and the area is restored to pre-project conditions.

e) *Must represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives:*

The system to be installed is to replace an existing tile system that is "broken" and restricting flow downstream from Glen Lake. The 44-inch RCPA replacement system is to provide similar hydraulic capacity as the in-place 36-inch clay tile system. The outlet control structure at Glen Lake is not to be modified or reconstructed thereby not changing the outflow discharge from the Lake.

Rule 6.3.2 with criteria involving projects with directional boring or horizontal drilling does not apply to the project.

No directional boring or horizontal drilling is proposed.

Rule 6.3.3 states, removal of structures or other waterway obstructions:

- a) *Must maintain the original cross-section and bed conditions to the greatest extent practicable;*
- b) *Must achieve complete removal of the structure, including any footings or pilings that impede navigation; and*
- c) *Must not involve the removal of a water-level control device:*

The outlet control structure from Glen Lake will not be removed or modified by the project.

Rule 6.3.4 states, *No activity affecting the bed of a protected water may be conducted between April 1 and June 30 on public waterbodies:*

The work is to begin in September 2021 and be substantially completed by November 15, 2021. Work will not be undertaken between April 1st and June 30th to minimize impacts on fish spawning and migration.

11.0 Fees

Because the property owner is a public entity, no fees are charged.

Rules 3.0, 4.0 and 5.0 \$0

12.0 Financial Assurances

Because the property owner is a public entity, the District's financial assurance requirements do not apply.

Sureties for the project are: \$0

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review. Rules 3, 4 and 5 are met.
2. The Department of Natural Resources has indicated in e-mail correspondence dated May 8, 2021 their regulatory authority is limited to the outfall of the pipe system. The DNR has, however, waived jurisdiction over the work in public waters (Unnamed Stream M-055-005-001-003) to the NMCWD, such that the applicant may proceed with the installation of the outfall and associated stabilization under General Permit #1997-6112, so long as the city complies with the conditions of the general permit. The City of Minnetonka is the LGU administering WCA.

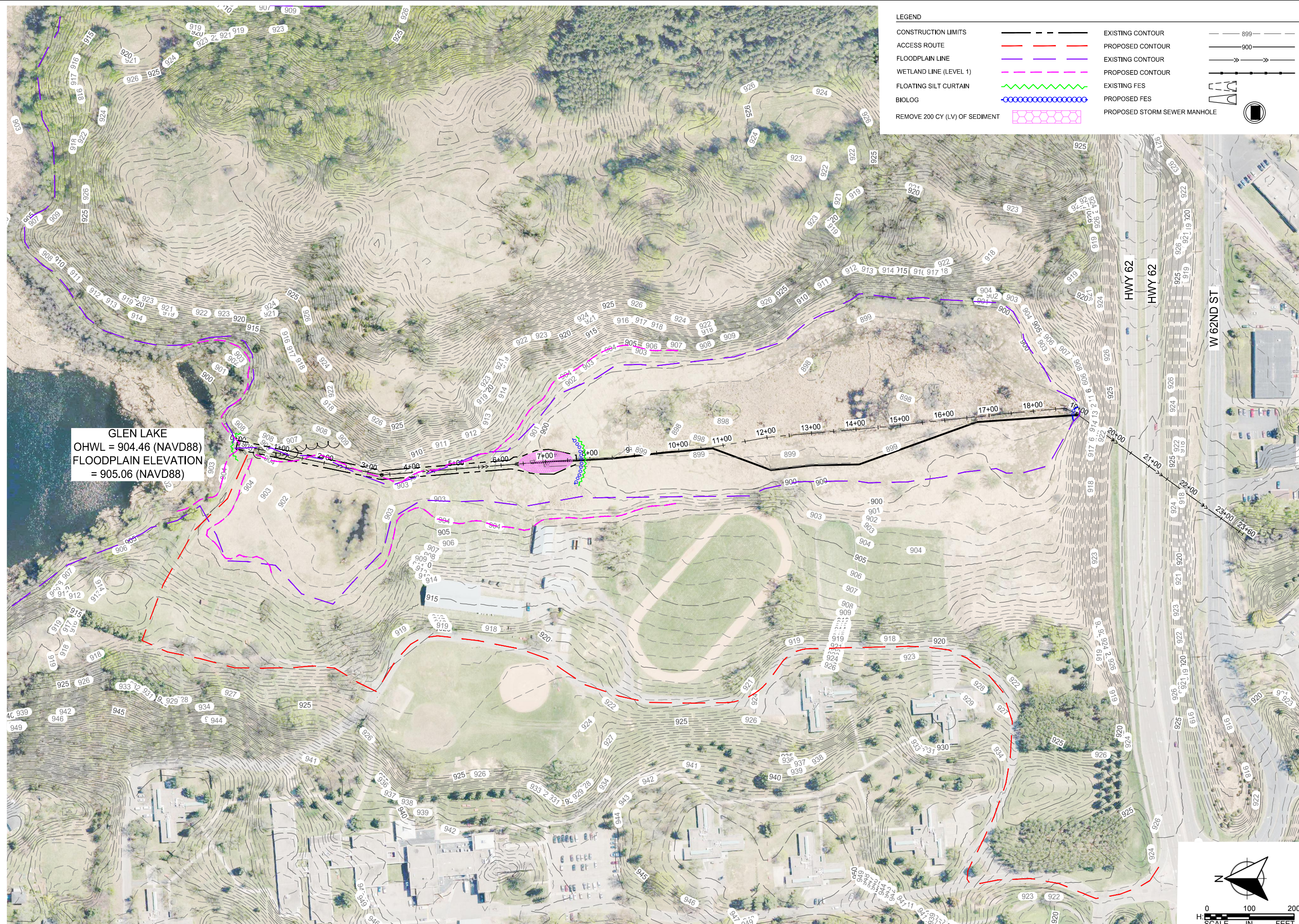
Recommendation

Approval, contingent upon:

1. General Conditions
2. Submittal of any relevant final WCA determinations.
3. The applicant providing a name and contact information from the contractor responsible for the erosion and sediment control at the site. NMCWD must be notified if the responsible individual changes during the permit term.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. If it is determined that the overland flow from the Lake (approximately 100 c.f.s.) follows the reconstructed pipe alignment, restoration with a stabilization material (e.g., soil reinforcement mat) capable of handling the flow rate and velocity and minimizing the potential of erosion should be installed



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