

**Ecological and Water Resources
2115 Birchmont Beach Rd NE
Bemidji, MN 56601**

March 16, 2023

Dan Money
District Administrator
Two Rivers Watershed District
410 South 5th Street, Suite 112
Hallock, MN

Re: Preliminary Survey and Engineer's Report for Kittson County Ditch No. 7

Dear Dan Money,

On behalf of the Director of Ecological and Water Resources of the Minnesota Department of Natural Resources (MN DNR), I offer the following review of the Preliminary Survey and Engineer's Report for the Kittson County Ditch No. 7 Improvement project in accordance with Minnesota Statutes section 103E.255.

- The Preliminary Survey Report appears to be adequate as it contains all the required information; however, we have recommendations for the final engineering report below.
- Our review finds the project will not require Public Water Work Permitting or Permissions from the DNR.
- A soil survey is not needed.

Recommendations to improve completeness

Please update project maps to show locations of all public waters (basins, public waters wetlands, and watercourses) in relation to drainage improvements.

Mapped floodplain

The westernmost portion of the project area in Section 19 at the outlet of the ditch system is located within a FEMA mapped floodplain - AE zone. A floodplain permit may be needed from local authorities for work within the mapped floodplain.

Channel design

Please consider including grade control structures in higher slope sections at approximately 70+00 to 80+00 and 130+00 to 135+00 on the profile to prevent channel head cutting and erosion of the ditch bottom. Constructed rock riffles or boulder cross vanes are effective at preventing channel incision and maintaining constructed

profile elevations. Maintaining constructed ditch profile elevation over time is of particular importance at the pipeline crossings to maintain required cover depth over the pipes.

Please consider including a slightly deeper low-flow or inner berm channel (similar to the upstream ditch width) in the wider ditch bottom (approximately 40 ft width) near 130+00. This will help maintain channel stability, sediment transport, and higher water quality.

Water quality and altered hydrology

The project will result in increased peak flows from the County Ditch 7 drainage system into the Judicial Ditch 10 drainage system. Practices such as water storage and multipurpose drainage management within the watershed of County Ditch 7 should be considered as ways to minimize or mitigate for modeled changes in hydrology at the system outlet and downstream.

Please also consider the following recommendations:

- MN DNR recommends incorporating a native seed mix for vegetation restoration to benefit pollinators. The Board of Soil and Water Resources seed mix for Native Construction (32-241) or Pollinator Plot NW (38-441) may be good choices.
- Consider using 'bio-netting' or 'natural netting' type erosion control blankets (i.e., no products containing plastic mesh netting or other plastic components) to avoid small animal entanglement. These are listed as Category 3N or 4N in the 2016 & 2018 MNDOT Standards Specifications for Construction.

Thank you for the consideration of these comments. Please contact Environmental Assessment Ecologist Owen Baird (owen.baird@state.mn.us) with any concerns or questions.

Sincerely,



Nathan Kestner
Regional Manager, Ecological and Water Resources

CC: Stephanie Klamm, Area Hydrologist
Owen Baird, NW Region Environmental Assessment Ecologist
Randall Doneen, DNR Conservation Assistance and Regulation Section Manager
Tom Groshens, DNR NW Region North District Manager

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