



Ecological and Water Resources

2115 Birchmont Beach Rd NE

Bemidji, MN 56601

July 13, 2021

Todd Larson

Stevens County Drainage Authority

1762 State Highway 9

Morris, MN 56267

Re: Commissioner's Advisory Report for Preliminary Survey Report for the Stevens County Ditch 16 Improvement

Dear Todd Larson,

On behalf of the Director of Ecological and Water Resources of the Minnesota Department of Natural Resources (MDNR), I offer the following comments on the Preliminary Engineers Report for Traverse County Ditch 16 improvements in accordance with Minnesota Statutes section 103E.255.

1. 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.
2. A soil survey is not needed.

Recommendations to improve completeness

- Expand upon the project purpose, describing the need for the improvement project rather than maintenance. Explain why is an improvement project needed at this time (i.e. multi-year crop damage due to flooding, road closures due to flooding, or other structural damages)? Describe the location, frequency, duration, and extent of damages due to flooding.
- Provide additional information on the character of the outlet and potential impacts to wetlands, and downstream water quality and biotic life, and consistency with watershed planning efforts. Recommendations for how to provide this information are outlined below.
- Clarify the design of potential storage areas, tiling through and around wetlands, and what will occur with the existing mainline ditch.

- The preliminary report alternatives provide little detail on the potential design for all listed storage options. Please note that both on-channel and off-channel storage may require a Minnesota Dam Safety Permit depending on design. The final advisory report should show details on proposed structures including their design height and proposed acre-feet of water storage. For more information about Dam Safety Permits see the [MN DNR Dam Safety webpage](#) or contact Jason Boyle at 651-259-5715.

Water Quality and Altered Hydrology

Altered hydrology is a stated stressor in the Pomme De Terre 1 Watershed 1 Plan (1W1P) report. The proposed drainage improvement project is immediately upstream of Muddy Creek, which is newly listed as impaired for *E.coli*. The current proposal would increase drainage at the outlet by approximately six times its current condition. This is the fourth drainage improvement project MDNR has reviewed in the Muddy Creek HUC-10 Watershed (the others were CD 5, 18, and 25). Downstream flooding, increased streambank and streambed erosion, and a decrease in water quality is likely to occur as a result of increasing discharge from improving multiple drainage systems within the same watershed. MDNR recommends that the Drainage Authority include the following in the final engineer's report:

- Discussion of cumulative effects to the hydrology of Muddy Creek from this improvement (CD 16) in combination with CD 5, CD 18, CD 25. DNR is not only interested in peak flows and cubic feet per second, but also on the total volume of water draining off the landscape.
- Incorporation of water quality improvement practices to not only offset impacts from the proposed improvement, but also contribute to the overall improvement of the Pomme De Terre watershed hydrology as outlined in the 1W1P. Potential practices such as filter strips, wetland restorations, sediment control basins, buried rock tile inlets should be incorporated into the Final Engineer's report.
- Include total volume run-off for events with existing versus the proposed improvement with hydrographs.
- The report does not indicate the existing mainline ditch would be filled-in, and it also appears may connect with the proposed drain tile. Leaving this ditch open and abandoning it for landowner control presents a high likelihood that the mainline ditch would be maintained by landowners. Because the open ditch is likely to be maintained by landowners, MDNR recommends including the drainage from this open ditch into hydrological modeling if it is not physically disconnected from the overall CD 16 drainage system.
- DNR notes the suggested area for water storage is small in size and unlikely to provide a substantial offset the increase in drainage efficiency from the proposed project.

- For additional water quality and wildlife habitat, MDNR recommends use of Minnesota Board and Soil and Water Conservation (BWSR) [native seed mixes](#). Appropriate BWSR mixes include Mesic Prairie Northwest (35-441) or Wet Prairie (34-262).

Effects of proposed drainage on wetlands

- Immediately downstream of the outlet is a public water wetland (75010200). The drainage improvement is likely to result in degradation changes through increased discharge into the basin (potentially raising the water levels) as well as increased sedimentation and decrease of water quality. Please describe potential changes in water levels and sedimentation that may occur in this basin as a result of the proposed improvement project. Describe any practices proposed to prevent impacts to this public water wetland.
- Tiling is proposed through several wetland areas of the project. MDNR recommends avoidance of tile through wetlands as much as possible and further investigation into potential wetland restoration opportunities. Non-perforated tile should be extended beyond wetland boundaries to prevent lateral drainage effects. We encourage close coordination with the Wetland Conservation Act Local Government Unit (Stevens County SWCD) and Technical Evaluation Panel to ensure compliance with state and federal wetland regulations.

Thank you for the consideration of these comments. Please contact Environmental Assessment Ecologist Jaimé Thibodeaux (jaimethibodeaux@state.mn.us) with any concerns or questions.

Sincerely,



Nathan Kestner
Regional Manager, Ecological and Water Resources

CC: Emily Siira, Area Hydrologist
Jaimé Thibodeaux, NW Environmental Assessment Ecologist

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Links:

Minnesota DNR Dam Safety

https://www.dnr.state.mn.us/waters/surfacewater_section/damsafety/permit_guidelines.html

BWSR Native Seed Mixes

<http://bwsr.state.mn.us/seed-mixes>