

June 26, 2019

Melanie Bomier
 Water Resources Technician
 Carlton County Soil and Water District
 808 3rd Street
 Carlton, MN 55718-0029

RE: Nemadji Watershed One Water One Plan - Priority Concerns

Dear Melanie Bomier:

The Minnesota Pollution Control Agency (MPCA) is pleased to provide priority concerns for consideration in the development of the Nemadji River Watershed One Watershed One Plan (1W1P). The MPCA has contributed significant time and resources assisting our partners in addressing water quality issues in the Nemadji River Watershed. We would invite you to consider the following studies located at the web page listed below during 1W1P development. These include monitoring evaluations, evaluations of stresses to impaired streams, completed total maximum daily load (TMDL) reports and a final strategies document by subwatershed, which highlight activities to restore and improve or sustain the Nemadji River Watershed resources. Each of these documents have some discussion of priorities and implementation practices that would benefit restoration and protection of watershed resources. The most useful for your needs is likely the final strategies document. Documents are found here:

- <https://www.pca.state.mn.us/water/watersheds/nemadji-river>
- <https://www.pca.state.mn.us/water/tmdl/deer-creek-turbidity-tmdl-project>

Due to the highly sensitive nature of the Nemadji River Watershed geology (high percent of silt and clay on steep slopes), all activities that interact with that geology need careful consideration and assessment of impact to water resources. Fortunately, technical knowledge and tools have advanced to assist in better decision-making and project planning to lessen the impact to water resources. One tool the agency maintains is a list of Minnesota waters that do not meet water quality standards.

Per the draft 2018 Impaired Waters 303(d) list, generated from significant water monitoring and assessment of the chemical and biological conditions of streams and lakes, the Nemadji River Watershed includes these impaired waters:

Water body name	Year added to List	AUID	County	Affected designated use	Pollutant or stressor	Year TMDL plan approved
Clear Creek	2014	04010301-527	Carlton	Aquatic Life	Aquatic macroinvertebrate bioassessments	2017
Clear Creek	2014	04010301-527	Carlton	Aquatic Life	Fishes bioassessments	2017
Clear Creek	2014	04010301-527	Carlton	Aquatic Life	Turbidity	2017
Deer Creek	2014	04010301-531	Carlton	Aquatic Life	Fishes bioassessments	2017
Deer Creek	2004	04010301-531	Carlton	Aquatic Life	Turbidity	2013
Lac La Belle	2014	09-0011-00	Carlton	Aquatic Recreation	Nutrient/eutrophication biological indicators	2017

Water body name	Year added to List	AUID	County	Affected designated use	Pollutant or stressor	Year TMDL plan approved
Mud Creek	2014	04010301-537	Carlton	Aquatic Life	Fishes bioassessments	2017
Mud Creek	2014	04010301-537	Carlton	Aquatic Life	Turbidity	2017
Nemadji River	2004	04010301-757	Carlton	Aquatic Life	Turbidity	2017
Nemadji River	2004	04010301-758	Carlton	Aquatic Life	Turbidity	2017
Nemadji River	2014	04010301-758	Carlton	Aquatic Recreation	Escherichia coli	2017
Nemadji River, South Fork	2014	04010301-558	Carlton	Aquatic Life	Turbidity	2017
Nemadji River, South Fork	2014	04010301-558	Carlton	Aquatic Recreation	Escherichia coli	2017
Net	2014	58-0038-00	Carlton	Aquatic Recreation	Nutrient/eutrophication biological indicators	2017
Rock Creek	2008	04010301-573	Carlton	Aquatic Life	Turbidity	2017
Rock Creek	2014	04010301-508	Carlton	Aquatic Life	Aquatic macroinvertebrate bioassessments	2017
Rock Creek	2014	04010301-508	Carlton	Aquatic Life	Fishes bioassessments	2017
Skunk Creek	2014	04010301-502	Carlton	Aquatic Life	Turbidity	2017
Unnamed creek	2014	04010301-532	Carlton	Aquatic Life	Turbidity	2017
Unnamed creek (Elim Creek)	2014	04010301-501	Carlton	Aquatic Life	Fishes bioassessments	

Based on these impairments and discussions found in the supporting documents on the Nemadji River Watershed and Deer Creek TMDL websites, the following issues should be addressed for the plan. The issues and practices described below can also be used within a protection framework to continue to improve or sustain high quality waters in the watershed.

Livestock/hobby farm animal management

While the animal herds are typically small, direct access to streams can cause loss of habitat, increase nutrients and fine sediment transport or bank collapse which in turn impacts stream substrate invertebrates. Bacteria associated with field runoff or again, animals in streams can also be an issue related to bacterial input. A few locations in the watershed show high numbers of bacteria. Implementation should include continual outreach and management assistance to rural landowners for animal husbandry best management practices, and maintenance of high-quality buffers with limited or more controlled access for animals.

Altered hydrology and associated issues of flow/connectivity and de-stabilized stream channels

Issues include loss of upland land cover like older age forest stands, ditching, poorly designed or maintained crossings, loss of wetlands, poorly managed forest harvests and loss of, or poorly managed riparian buffers along streams. Loss of these components that manage hydrology lead to changes in the delivery and rate of water through the stream network, which eventually destabilizes the system and creates more erosional problems with sediment transport. Massive slumps and eroded near channel areas are one outcome. Carried with the sediment are nutrients such that the nutrient cycle is also disrupted. For example, more phosphorus attached to sediment can, in turn, fuel algal growth at an increased rate. Loss of connected water systems may occur with poorly placed culverts and may be

severe enough in some instances to make a perennial stream an intermittent stream with associated fish habitat problems. This is especially important with changing climate conditions.

Prior analytical and project work in the Nemadji River Watershed has identified some areas for targeted work with landowners and the type of issue of significance, e.g. culvert inventories, agriculture/animal management inventories, open lands and reforestation inventories, slump inventories and near channel erosional evaluations etc. Work should continue to complete the projects identified by these inventories and effort made to continuously maintain opportunities for partnership building with landowners via field day events or special tours of project areas etc. In the case of one impairment, Elim Creek fish bioassessment, a culvert replacement may well remove the impairment. Ongoing monitoring of the issue identified and post-project evaluation is also important.

Riparian/shoreline vegetation management

Healthy riparian/shoreline vegetation benefits fish production, growth and life cycle needs. It also serves water quality by trapping and recycling nutrients and preventing erosion. Continue evaluations to target problem watersheds or activities by landowners (e.g. highly developed lakeshores), evaluate pre and post best management practice (BMP) projects to increase knowledge about successful recovery of sites, continue projects that highlight values of unique healthy riparian areas (e.g. conservation for wild rice dominated shorelines).

Septic system inspections and upgrades where needed

Poorly functioning systems can contribute bacteria and nutrients to water resources. Excess phosphorus is a problem for one impaired lake, and there is at least one other lake that should be on a phosphorus "diet" to maintain longer sustained health. Bacteria issues are found on a few streams in the Nemadji River Watershed. Loan monies are available from state programs to assist county funding programs for landowners. Federal funding programs via Natural Resources Conservation Service, for example, can be used to target agricultural related issues. The programs can be administered for zero interest and have a 10 year pay back. Another option may be shared systems to reduce the cost even further to landowners.

Emerging Issues of Concern – chloride

As an emerging issues, a risk assessment to Nemadji River Watershed water resources and follow-up monitoring would be prudent as future work. Professional staff should also engage in smart salt training and use of evaluative tools to review potential chloride use reduction efforts.

Thank you for the opportunity to provide comments as we begin the 1W1P process for the Nemadji River Watershed. The MPCA staff look forward to contributing throughout the process.

Sincerely,

Karen Evens

This document has been electronically signed.

Karen Evens
Environmental Consultant
Watershed Division

KE:jdf

cc: Katrina Kessler, Assistant Commissioner, MPCA