

Central Region Headquarters
1200 Warner Road
Saint Paul, MN 55106

March 28, 2024

Rebecca Oldenburg-Downing
c/o Middle St. Croix Water Management Organization
455 Hayward Avenue N
Oakdale, MN 55128

Re: Middle St. Croix Water Management Organization's Watershed Management Plan Update

Dear Rebecca Oldenburg-Downing,

This letter is in response to your notification soliciting input on Middle St. Croix Water Management Organization's (MSCWMO) Watershed Management Plan Update. This is an exciting time for MSCWMO as work begins on the 10-year update of the commission's Watershed Management Plan(s) (WMP). This process allows time to review and update past goals, strategies, and actions, and to think through watershed plans for the next ten years. To aid in this process, DNR has compiled this resource assessment letter to provide up-to-date information on DNR's priority issues for the watershed and useful data available through DNR that can help support watershed management organization planning, program management, and project development/design. The following narrative is divided into topics relevant to watershed resource management and included under each topic are DNR recommended actions. Continue to utilize information from State studies developed for the Watersheds including TMDLs and WRAPS to drive implementation programs and targeting.

Dan Scollan, the DNR East Metro Area Hydrologist, will be participating on the Technical Advisory Committee for MSCWMO Watershed Management Plan preparation process. If you have questions regarding the content of this letter or would like to discuss individual topics or recommendations further, please do not hesitate to contact him (daniel.scollan@state.mn.us; 651-259-5732). The DNR looks forward to working with MSCWMO on your next generation Watershed Management Plan and on future public waters projects.

Sincerely,



Megan Moore
South District Manager – Ecological and Water Resources

cc: Michelle Jordan, BWSR
Dan Lais, DNR
Jack Gleason, DNR
Dan Scollan, DNR
Abby Shea, MDH

Jeff Berg, MDA
Maureen Hoffman, Metropolitan Council
Jeff Risberg, MPCA
Katie Kowalczyk, MnDOT

General Watershed Management Strategies

DNR recommends that the following general watershed management strategies be a part of your watershed management plan (WMP):

- Keep water where it falls by protecting and restoring wetlands, ensuring water courses are connected to their floodplains, and managing stormwater runoff with rate control and volume reduction standards.
- Protect and create buffers of native perennial vegetation along watercourses and water bodies.
- Reduce the flow of water volume and nutrients through drainage systems.
- Design culverts and bridges to retain floodplain functions and bank stability on natural channels and other drainage systems.
- Support land use planning and practices that protect, restore, and enhance priority ecological resources.
- Maintain and enhance perennial vegetation including protection of working forest lands.
- Use water efficiently and implement conservation measures that further reduce water demand.

Integrated Water Resource Management

As the Middle St. Croix Water Management Organization begins the WMP update process, it's important that water resource issues and goals be addressed not as independent prescriptions, but as integrated activities strategically applied toward the improvement of the entire watershed system. DNR's Watershed Health Assessment Framework approach uses a five-component framework (hydrology, biology, connectivity, geomorphology, and water quality) to address the interdependent nature of ecological systems that operate within a watershed. Placing the goals and actions identified by the Committee into this framework may help to:

- Evaluate watershed goals and actions in the context of the five aspects of watershed health.
- Identify gaps between goals and actions.
- Prioritize chosen actions effectively.
- Examine the potential for unintended consequences.

Use the [Watershed Health Assessment Framework](#) interactive online map and [downloadable data sets](#) to help refine and organize the WMP within the context of a comprehensive watershed landscape.

Additional, specific recommendations by topical area follows:

Groundwater Sustainability

DNR continues to manage the state's groundwater resources to meet sustainability goals set out in Minnesota Statutes, section 103G.287. DNR recommends the MSCWMO's WMP contain some key objectives and actions in the plan, including:

- Increase communication about the risks of overuse and degradation of groundwater resources and promote water conservation.
- Maintain and enhance aquifer recharge.
- Maintain and enhance quality of water recharging aquifers.
- Explore opportunities for stormwater and rainwater harvest and use to reduce reliance on groundwater.
- Increase coordination of monitoring activities between organizations with water management responsibilities, including monitoring water level trends using water level measurements from member communities.
- Increase coordination of communication activities between organizations with water management responsibilities.

Stormwater Management

The MSCWMO's land use is a mix of rural areas and developed impervious surfaces. To reduce the resultant impact of increased runoff and pollutant loading to water bodies requires improvements to existing urban stormwater management infrastructure.

MSCWMO plays an important role in urban stormwater management and DNR encourages the MSCWMO to continue to work with its partners to:

- Monitor and protect the water quality of the MSCWMO's water resources.
- Implement best management practices to reduce stormwater runoff.
- Investigate new stormwater management techniques.
- Promote green infrastructure such as rain gardens, permeable pavement, and swales.
- Address storm sewer infrastructure capacity and corresponding flooding problems.

One of the primary drivers of degraded water quality and habitat in rivers, streams, lakes and wetlands is nutrient and sediment-laden runoff from surrounding commercial, residential, and agricultural land uses. Minimum Impact Design Standards (MIDS) were developed by the Minnesota Pollution Control Agency to minimize stormwater runoff, minimize the amount of pollution reaching lakes, rivers, and streams, and to recharge groundwater. The development of MIDS is based on low impact development (LID), an approach to storm water management that mimics a site's natural hydrology as the landscape is developed. Continue to support the incorporation of MIDS (and the LID approach) into future development and redevelopment in the watershed.

Additionally, High Potential Zones for the federally endangered Rusty-patched Bumble Bee occur within the Middle St. Croix Water Management Organization. The Monarch Butterfly is also likely to be federally listed in the near future. Therefore, DNR encourages the use of BWSR-approved, weed-free, native seed mixes to the greatest degree possible in stormwater features and other landscaping in order to provide pollinator habitat, reduce runoff and erosion potential, and reduce the need for irrigation and fertilizer.

Septic Systems

Consider promoting homeowner education on the proper use and maintenance of septic systems to preserve their function. The University of Minnesota's Onsite Sewage Treatment Program designed a homeowner tool that allows users to create a custom guide for their septic system. The tool, known as H₂O&M, can be found at this [website](#).

Chloride

Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city applicator participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency. More information and resources can be found at [MPCA's Smart Salting training website](#). Many winter maintenance staff who have attended the Smart Salting training — both from cities and counties and from private companies — have used their knowledge to reduce salt use and save money for their organizations.

We encourage MSCWMO to request that project proposers who wish to significantly increase impervious surfaces develop a chloride management plan that outlines what BMP's and strategies will be used to reduce chloride use within the project area. We also encourage cities, counties, and watershed districts to consider how they may participate in the [Statewide Chloride Management Plan](#) and provide public outreach to reduce the overuse of chloride. Please consider metrics in your plan that includes encouraging member communities to consider adopting an ordinance regarding chloride use using the MPCA's chloride reduction model ordinance [MPCA's chloride reduction model ordinance](#).

Natural Shorelines

Since Minnesotans started developing around our lakes and rivers, our state has lost an estimated 40 – 50% of its natural shorelines. The [loss of natural shorelines](#) allows more naturally occurring phosphorus to flow directly into surface waters, increasing algae growth. An average suburban style lakeshore contributes seven to nine times more phosphorus per summer compared to a lot with a natural shoreline. This increase in phosphorus can result in the generation of 100 pounds of algae along the shore, compared to 15 pounds under natural shoreline conditions. On the other hand, natural shorelines help keep lakes clean for recreation and fishing. They stabilize shorelines, protecting property from wind and wave erosion, and they provide important wildlife habitat. Natural lakeshores also provide a place for relaxation and are central to Minnesota's identity as a good place to live.

We encourage MSCWMO to invest in education for lakeshore property owners and provide opportunities for natural shoreline restoration and enhancement. DNR's Natural Shorelines [webpage](#) contains links to a number of helpful resources, including DNR's [Score your Shore](#) and [Restore Your Shore](#) tools.

Contact Dan Scollan, East Metro Area Hydrologist (daniel.scollan@state.mn.us; 651-259-5732) for public waters work permitting coordination on shoreline restoration projects.

Stream Bank Stabilization and Restoration

DNR's underlying philosophy regarding stream management is that streams are self-forming and self-maintaining systems. When they are artificially manipulated there can be negative impacts to channel stability. Alterations in pattern, dimension, or profile of a stream can lead to an increase in stream bank erosion, increased turbidity, embedded sediments, and a general reduction in biological productivity. DNR encourages the MSCWMO to consider these stream dynamics when planning stream stabilization or restoration projects.

Before attempting to stabilize streambanks, understanding whether the underlying cause is systemic or localized is needed. If localized, then traditional stabilization techniques can be employed. DNR highly recommends using wood for toe stabilization given its habitat value. Toe-wood sod mats have been installed successfully on other rivers within the state to stabilize stream banks, protect infrastructure and provide habitat. DNR can provide site specific guidance if there is interest. If the underlying cause is systemic (e.g., altered hydrology), then additional assessment work is needed and streambank stabilization may not be appropriate for all sites due to the increased likelihood of project failure.

For more information and coordination on streambank stabilization and restoration, please contact Nick Proulx (nick.proulx@state.mn.us; 651-259-5850), DNR Clean Water Specialist.

Contact Dan Scollan, East Metro Area Hydrologist (daniel.scollan@state.mn.us; 651-259-5732) for public waters work permitting coordination on these projects.

Geomorphic Approach to Road-Stream Crossings

Poorly designed culvert and bridge openings and the encroachment of road fill into streams and their floodplains impact a watercourse's natural processes and ecological functions. DNR encourages communities to apply the [Geomorphic Approach to Infrastructure Design at Road-Watercourse Intersections](#) to foster natural system processes and establish stable watercourses through time.

A stable channel will effectively manage its water and sediment delivered with minimal changes through time. Past design methods for road-stream crossings focused on water conveyance alone; commonly concentrating all flow through the channel which can cause detrimental impacts to the stability of the natural watercourse. Applying the Geomorphic Approach can provide ecological benefits including long-term channel stability, ecological connectivity (e.g., fish passage), and floodplain connectivity.

For more information on this approach and grant funding opportunities, please contact DNR's Geomorphic Approach Team at Geomorphicroach.dnr@state.mn.us and contact Dan Scollan, East Metro Area Hydrologist (daniel.scollan@state.mn.us; 651-259-5732) for public waters work permitting coordination on these projects.

Fisheries

Fisheries staff appreciate the MSCWMO's previous and continuing work to improve water quality and fisheries resources. For more information and coordination on fisheries management projects, please contact TJ DeBates (timothy.debates@state.mn.us; 651-259-5770), East Metro Area Fisheries Supervisor.

Aquatic Invasive Species

Aquatic invasive species (AIS) pose a significant threat to Minnesota's lakes and rivers and continue to be a high priority issue for DNR. Aquatic invasive plants such as Eurasian watermilfoil and curly-leaf pondweed form thick vegetative mats on the water surface, limiting recreational opportunities and often negatively affecting water quality. Both the control of existing AIS and the prevention of new infestations are important efforts in terms of AIS management.

In most cases, eradication of invasive aquatic plants is not an option. Therefore, herbicide treatments are generally used to target abundant beds of invasive plants that may create a recreational nuisance. In most cases, the use of herbicides on lakes classified as Natural Environment (NE) lakes is not appropriate, and mechanical means (e.g., commercial aquatic plant harvester) may be a management option.

The establishment of both aquatic and terrestrial invasive species is a major threat to the ecological functions of both wetland and upland plant communities. Include plans to combat invasive species and best management practices (BMPs) in watershed project plans and designs. Promote education of the public on the control and spread of invasive species – public awareness efforts targeting riparian property owners (lakeshore owners) are needed to increase overall compliance with AIS laws. DNR will continue to support local efforts to educate the public in AIS prevention and encourage local units of government to take a leadership role.

To avoid the accidental spread of AIS during routine watershed activities, DNR recommends developing plans for work that involve visits to multiple lakes, such as water quality sampling. Plans should include 1) a thorough documentation of the presence of AIS in MSCWMO lakes, including infestations like curly-leaf pondweed that may not be widely reported, 2) consideration of the order in which lakes are visited, and 3) decontamination procedures. Please contact April Londo (april.londo@state.mn.us; 651-259-5861) for information on AIS infestations in MSCWMO lakes, and Christine Hokkala-Kuhns (christine.hokkala-kuhns@state.mn.us; 320-223-7845) for information on decontamination procedures.

For more information on the AIS Program, contact April Londo (april.londo@state.mn.us; 651-259-5861), invasive species specialist.

Conservation Partners Legacy Grant Program

The Conservation Partners Legacy (CPL) Grant Program funds conservation projects that restore, enhance, or protect forests, wetlands, prairies and habitat for fish, game, and wildlife. The types of projects funded under this grant program include prairie restoration, river restoration, lake habitat enhancement, wildlife habitat restoration, floodplain forest restoration, bluff prairie restoration, fish barrier installation, buckthorn removal, fish passage restoration, and others.

Participate in the [Conservation Partners Legacy \(CPL\) Grant Program](#) where possible. To learn more about this grant program, contact the CPL Grant Program coordinator (LSCPLGrants.DNR@state.mn.us; 651-259-5233).

Consideration of plant communities, rare species, and special features

Information on the biology, distribution, ecology, habitat use, conservation, and management of rare species of interest is available in the [DNR's Rare Species Guide](#). The locations of state-listed species maintained in the Rare Features Database are considered sensitive information and is protected under the Minnesota Data Practices Act. This information is only available through a Natural Heritage Information System (NHIS) data request or by license agreement and should be used for internal planning purposes only.

Minnesota's Endangered Species Statute (Minnesota Statutes, section 84.0895) and associated Rules (Minnesota Rules, part 6212.1800 to 6212.2300 and 6134) prohibit the take of threatened or endangered species without a permit. Please note that the only way to screen a project for impacts to state-listed species that are protected by law is (1) to query the NHIS database by submitting a review request to [Minnesota Conservation Explorer](#) (MCE) or (2) to use a private NHIS license agreement to understand how the project may impact protected state-listed species and rare features. If rare features are identified within one mile of a project using a private license, the project should be submitted for review through MCE for further coordination with DNR. If protected species are identified within a mile, the project will be manually reviewed by Natural Heritage review staff who will follow up with next steps.

A Natural Heritage review is only considered current for 12 months because the NHIS database is continually updated as new information becomes available and will include current records and surveys. You can visit the online [Minnesota Conservation Explorer](#) tool to explore public data available for conservation planning, to request an automated Natural Heritage Review, and, for authorized users, to access nonpublic data.

DNR recommends using assessment data of watershed characteristics and natural resource features when completing long-range watershed planning efforts. The assessment of watershed characteristics and natural resource features is valuable for evaluating landscape functions and guiding land management decisions. These assessments provide important information on a landscape's integrity and its ability to provide benefits to ecosystems. For example, assessment data can be used to examine how projects will improve or affect flora and fauna, determine the cumulative impacts of land use, make regional scale land use decisions, and to balance land use development and natural resource protection.

The presence of rare species can be an indication of the health of a watershed, and plant and animal diversity help landscapes to maintain important watershed functions. DNR recommends that the MSCWMO's WMP include goals and policies to address how rare species and habitat will be protected.

We encourage MSCWMO to require an NHIS review as early in the planning stage of projects as possible in order to allow sufficient time for review and coordination with DNR. If the proposer waits until WCA TEP review to consider potential impacts to rare species, it is often late in the planning stages and could cause significant delays to the project.

DNR data layers have been developed that are helpful in watershed planning. These are free and available to the public from the [Minnesota Geospatial Commons](#). Some key data layers include:

- DNR managed lands such as Scientific and Natural Areas, Wildlife Management Areas, and Aquatic Management Areas
- DNR native plant communities
- Karst features
- Minnesota Biological Survey (MBS) Sites of Biodiversity Significance
- Central Region Regionally Significant Ecological Areas (CRRSEA) – The purpose of this data is to inform regional scale land use decisions, especially as it relates to balancing development and natural resource protection.
- Regionally Significant Ecological Areas and Regional Ecological Corridors – Identifies potential habitat movement corridors that may be important for wildlife connections.

DNR encourages the use of site-appropriate native plants for shoreline stabilization, buffers, and erosion control for all watershed projects. These species provide important soil stabilization and erosion control functions, require less water and fertilizer, have the greatest chance of establishment success, and contribute to biodiversity of landscape vegetation. Query the DNR's [Your Shore Native Plant Encyclopedia](#) for a list of plants tailored to specific site characteristics. DNR recommends the establishment of native, deep-rooted grassland and herbaceous plant communities in the place of shallow-rooted, mowed turf grasses on watershed and highway projects as a means to support native insect pollinator communities and other wildlife. Interest in pollinators has grown since the term Colony Collapse Disorder appeared in 2006. This phrase refers to the puzzling disappearance of honey bees from their hives. While this disorder does not affect native pollinators, many of the challenges that face honey bees also affect native insects, including pesticide use, habitat loss, pathogens, parasites, climate change, and invasive species. DNR has developed a [Best Management Practices Guide](#) for restoring and enhancing native plant community habitat for native insect pollinators.

Forest Management Considerations

Importance of forested riparian areas to water resources cannot be understated. Forested riparian areas provide an array of goods and services for plant diversity, wildlife and fish habitat, nutrient, sediment, and water interception, storage, and transformation and recreational opportunities. Keeping riparian areas intact so that the functions and roles of terrestrial and aquatic ecosystems can continue to provide these services is imperative. We recommend keeping forested riparian areas forested, which does not necessarily preclude forest management activities. If riparian forests are managed in the MSCWMO's area, we highly recommend consulting and using the [Minnesota Forest Resource Council's Voluntary Site-Level Forest Management Guidelines for Landowners, Loggers, and Resource Managers](#) to protect these valuable ecosystems into the future.

Emerald ash borer (EAB) will continue to impact communities in the MSCWMO area within the next 10-year watershed plan cycle. Communities should plan for EAB impacts and take action now to reduce the sudden financial burden that comes with EAB. More information is available from the [University of Minnesota Extension website](#). The Minnesota Department of Health's [interactive mapping website](#) shows the status of EAB in Minnesota. The MSCWMO area is within the "Generally Infested Area" and all of Washington County is within the quarantine area. To minimize pesticide exposure in the environment and to save people's money, we do not recommend applying insecticides to save ash trees until the symptoms of EAB infestation are within about ¼ - ½ mile of any given location. Ash trees can still be saved from EAB if they are lightly infested (they must still have over 50% of their normal number of leaves that are normally sized). Ideally, ash trees should be treated when they are 100% healthy and not infested at all, so there is some risk of waiting until EAB infestation symptoms are visible within a ½ mile. In natural areas, forested wetlands with ash dominant in the canopy will experience a more drastic change in plant community composition and hydrology than upland communities with a minor ash component.

The Forest Stewardship Program at the DNR provides private landowners with at least 20 acres of forested land (or land that will have trees) professional forest management advice from a qualified DNR forester or private land forestry consultant. For a fee, landowners will consult with a forester to talk about their goals for forest management. The forester will write a forest management plan and the land will be eligible for property tax relief programs and state cost-share assistance for management work. For more information on the DNR's professional forest management assistance for private landowners, please visit [DNR's Forest Stewardship Program webpage](#).

Communities interested in caring for and managing their urban and community forests can find helpful information at [DNR's Community Forestry webpage](#). The page includes information and links about grant programs, DNR Arbor Month, and best management practices to prevent spreading invasive species and conserving wooded areas.