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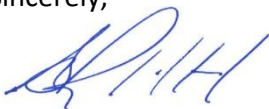
Thank you for inviting the Minnesota Department of Natural Resources (DNR) to provide input as you and other local partners begin developing a Comprehensive Watershed Management Plan for the Des Moines River Basin.

We recognize the challenge of creating a shared vision for a healthy, well-functioning watershed. Local water management and political jurisdictions can have differing perspectives, priorities and goals. The DNR can help provide technical support in the planning process.

Attached to this letter are DNR priority concerns for the Des Moines River watershed. Using sound technical science and governance strategies to sustain water resources is a top DNR priority that aligns well with the One Watershed One Plan (1W1P) effort. DNR field staff from multiple divisions helped identify agency-wide resource priorities for the watershed, emphasizing those that provide multiple benefits. We believe incorporating these priorities will enhance water quality, aquatic and upland habitats, species diversity, groundwater protection and recharge while also providing recreational benefits that will enhance the quality of life in the watershed. We can provide additional information about these priorities as you progress in developing the plan.

Our lead staff person for this 1W1P project is Tom Kresko, Area Hydrologist at the Windom Area DNR office. He can be reached by telephone at 507-832-6045, or by email at tom.kresko@state.mn.us. Please contact Tom if you have questions or would like more information about the attached priorities or the types of technical support we can provide. Feel free to contact me as well if you need additional support.

Sincerely,



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DNR South Region Director

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Minnesota DNR Priority Resources and Issues for the Des Moines River Basin

The Department of Natural Resources (DNR) recommends the Des Moines River 1W1P planning committee include the following priority concerns and opportunities, which reflect input from DNR staff representing the divisions of Fish and Wildlife, Ecological and Water Resources (including the Nongame Wildlife Program), Forestry, Parks and Trails, and Lands and Minerals. These include items that can be measured, mapped, and implemented realistically within the Des Moines River watershed. The DNR can provide additional data around each issue as you begin developing the watershed plan, including information to help target areas for protection and restoration.

Hydrology: Managing surface and subsurface drainage systems, restoring wetlands, increasing vegetative cover on the landscape, and implementing water storage projects are all ways to reduce flood damage, protect fish and wildlife habitat, maintain, or improve stream stability, support summer and winter stream base flows, filter sediment and nutrients, and improve groundwater recharge.

- **Improving hydrologic functions:** The natural hydrologic functions of streams, rivers and lakes in the Des Moines River basin have been affected by climate change as well as landscape modifications associated with economic development for agriculture, industry, transportation and growing communities. Changes to the landscape—from ditches and straightened streams to drain wetlands and other low-lying areas—play a major role in stream stability issues and water quality impairments that impact the entire watershed. The net increase in water results in more extensive flooding, less aquatic habitat and species diversity, and higher nutrient and sediment loads. These concerns can be addressed by projects designed to build environmental resiliency—for example, projects that promote cover crops, mitigate agricultural drainage improvements with water storage in wetlands and floodplains, vegetate and protect the floodways and floodplains, preserve remaining natural stream channels and support water management practices targeted to reduce impacts.
- **Wetland restoration, cover crops and water storage projects:** Lakes, wetlands, and rivers account for less than 9% of the watershed. This is a result of intensive land use and drainage of 80% of the original wetlands and shallow lakes. These changes are contributing to increases in runoff, suspended sediment, and channel widening, as well as increased discharge of water downstream, less water storage, and reduced groundwater recharge. The cities of Worthington, Currie, Windom, Jackson, and Lake Shetek area have all experienced more frequent and extensive flooding as result of changes in the watershed and increased episodic precipitation events. Wetland restoration, cover crops and water retention practices, specifically in the upper reaches of the watershed, are needed to mitigate excess annual discharge, seasonal shifts in flows, and flood events, as well as to enhance water quality and reduce erosion by holding and metering out the water over a longer duration.

Ground Water Sustainability: Long-term planning for groundwater protection and recharge is needed to maintain sustainable water supplies for drinking, natural resources, and business uses, considering interactions between groundwater and surface water. Communities and rural water suppliers are acutely

aware of quality and quantity issues. Several suppliers are currently addressing pollutants in their drinking water supply, are actively seeking, or have recently secured new sources of water or have dealt with significant supply issues. Much of the available groundwater is within shallow aquifers that are connected to surface water features.

- **Water supply planning:** Clean drinking water is a precious resource that we often take for granted. Increasing demand from domestic, agricultural, and industrial water users can strain water resources and municipal water supply systems. Water users can be educated on conservation measures and new technologies designed to reduce overall water use. Planning for sustainable water supply and implementation of water conservation measures are needed across the entire watershed.
- **Groundwater recharge in sensitive areas:** Groundwater resources supply about 75% of Minnesota's drinking water and nearly 90 percent of water used for agricultural irrigation. BMP's and sustainable land use practices are essential in groundwater recharge areas, specifically the surficial sands and gravels and outwash areas where the chance of groundwater contamination is highest. Protecting important groundwater recharge areas for the City of Windom and all three (3) of the water well fields in the Red Rock Rural Water System is critical--including more focused nutrient management strategies and emphasis on land use decisions that improve groundwater quality and quantity.

Surface Water Quality: We need to work together to address water quality goals established in Watershed Restoration and Protection Strategies or WRAPS (see the Des Moines WRAPS report at <https://www.pca.state.mn.us/water/watersheds/des-moines-river-headwaters>). The goals established in the WRAPS and TMDLs work to address current and future water quality impairments, groundwater contamination, improve fish habitat in lakes and streams, and promote watershed's resilience to withstand climate change, invasive species, and other stressors.

Restoration of lakes in the Watershed: The Des Moines River WRAPS Report identifies most lakes as impaired for aquatic recreation--including popular lakes such as Shetek, Heron, Sarah, East and West Graham, Talcot, Lime, Currant, Clear, and Lake Yankton. DNR has identified Shetek and Talcot lakes as priority sites for dam removal and/or modification projects since the aging structures were not designed for today's hydrologic conditions or for aquatic organism passage. Fulda Lake and the surrounding watershed have seen great improvements in water clarity, fish diversity and public use. This restoration project serves as a good example of a cooperative lake restoration project in the area.

Restoration of streams in the watershed: The MPCA WRAPS report for the Des Moines River basin listed only one stream reach that was meeting water quality standards for supporting aquatic recreation.

- Roughly 53% of streams in the Des Moines Headwaters watershed, 75% of streams in the Upper Des Moines, and 80% of streams in the East Fork Des Moines, have been channelized or impounded. Channelized streams have limited floodplain access, are often unstable and provide poor fish and wildlife habitat. Changes in land and water management is needed to improve these alteration trends. In 2016 DNR published a watershed characterization report summarizing watershed and stream conditions, floodplain connectivity, and hydrology to assist in watershed planning efforts (<https://wrl.mnpals.net/islandora/object/WRLrepository%3A2501>). DNR also completed a supplemental Evaluation of Hydrologic Change (EHC) for the Des Moines River

Headwaters. The EHC results still need to be interpreted and include additional local input to be more relevant and meaningful in this planning process.

- **Restoring perennial vegetation in riparian areas:** Perennial vegetation is critical in riparian areas. Deep rooted native plants and floodplain connectivity will slow the flow of water, increase water retention, reduce erosion, filter sediment and nutrients, stabilize banks, provide wildlife habitat, and connect habitat corridors.
- **Agriculture and Conservation Best Management Practices (BMP's):** Prime agricultural land should be preserved for agricultural use, but the watershed would benefit from conservation BMP's in targeted areas. All exposed soils should be protected by cover crops, and support residue to hold water and reduce runoff. Additional cover crop opportunities and initiatives are needed to support the multiple benefits of this practice to protect the land, soil, surface water, and ground water resources.
- **Streambank Erosion:** Streambank erosion is found throughout the watershed, but portions of Lime Creek, Okabena and Jack Creeks, and the Des Moines River exhibit substantial erosion, and Beaver Creek in Murray County exhibits extraordinarily notable bank erosion and detachment from the floodplain. The erosion is a result of stream bed aggradation and changes in precipitation patterns but, most significantly, it is also a symptom of hydrologic changes within the watershed.

Habitat/Social/Economics: Protecting, restoring, and enhancing habitat and public recreation opportunities in and around lakes, streams, wetlands, riparian zones, and grasslands in ways that promote clean water and prevent invasive species is essential. This watershed has abundant natural resources unique to Minnesota, however protecting, restoring, enhancing habitat and additional public recreation opportunities need consideration and mindful land use planning and zoning.

- **Protect and connect rare and natural features:** The watershed is home to many documented Species of Greatest Conservation Need (SGCN) like the Blanding's turtle, Dakota skipper, Poweshiek skipperling, and prairie bush clover and other endangered and threatened species. Many of these are grassland dependent species that require the protection and connection of large contiguous grassland areas such as the Heron Lake complex of protected lands, Talcot Lake Wildlife Management Area (WMA), Big Slough WMA, Badger Lakes WMA, and Lake Maria WMA.
- **Recreational opportunities:** Significant recreational opportunities exist in the watershed like the Casey Jones State Trail, Lake Shetek State Park, and Kilen Woods State Park. Additional opportunities for public use could include the development of a state water trail on the Des Moines River which is a publicly driven process that could enhance the use of this resource for outdoor recreation including canoeing, fishing, camping, and bird watching in areas throughout the Des Moines River valley.
- **Calcareous Fens:** There have been nine calcareous fens currently identified in the Des Moines River watershed. They represent one of the most unique and rare habitats in Minnesota. Calcareous fens support rare plant communities that exist only in fens because the constant supply of calcium rich groundwater. Fens require protection from disturbance by livestock or people, herbicide spraying or impacts to the groundwater source supplying the fen.

- **Trout Stream:** Scheldorf Creek is one of the only designated trout streams in the Des Moines watershed. Adding additional access easements for fishing would improve fishing opportunities on this stream. The protection of groundwater resources is critical for maintaining the cool and sustained groundwater that supplies baseflow to this trout stream.
- **Aggregate and mineral resources:** Most of the sand and gravel pits in the watershed are concentrated in the Des Moines River valley. Understanding the risks and rewards of these valuable aggregate resources in proximity to sensitive features is critical. DNR supports planning by local units of government for environmentally sound mining and access to aggregate and other natural construction materials for building and maintaining roads and other infrastructure.

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