Rain check: State funding aims to increase floodwater storage

CLEAN WATER LAND & LEGACY AMENDMENT

Some projects supported by BWSR's Water Quality and Storage Grant Program also tap Clean Water Fund grants.

New funding will help the Minnesota Board of Water and Soil Resources (BWSR) support water storage projects that make landscapes more resilient as Minnesota experiences increasingly heavy and frequent rains.

BWSR's Water Quality and Storage Grant Program received $17 million in general funds from the state Legislature this year. BWSR created the program in 2021 to offer financial assistance to local governments to control water rates and volumes.

The program is part of a suite of legislation passed in recent years to mitigate negative environmental impacts caused by climate change. Increasingly frequent and intense rains have created a need for additional water storage. The program's goal is to protect infrastructure, reduce erosion and improve water quality by temporarily holding water on the landscape after heavy rains or runoff events.

Weaver

"BWSR's programs implement water storage in many different ways," said BWSR Chief Engineer Rita Weaver. "Water can be stored through soil health practices and water is stored through structural projects. This program focuses more on those structural storage practices like grade stabilizations (small dams) and retention basins."

Since the program launched, BWSR has awarded six grants to four organizations: Area II Minnesota River Basin Projects (Area II), the Bois de Sioux Watershed District, the Lyon County Soil & Water Conservation District (SWCD) and the Le Sueur County SWCD. Grants require

An Area II grade stabilization structure (a small dam) in Redwood County's Springdale Township was constructed in 2021. BWSR Water Quality and Storage Grant Program funds will help Area II implement grade stabilization structure projects in two other townships within its nine-county region.
Photo Credit: Bolton & Menk Inc.

a 25% match from the recipient.

The program prioritizes projects in the Minnesota and Lower Mississippi river basins. Both areas contain topography with steep elevation changes that make flooding and erosion pressing concerns. Five of the funded projects are within the Minnesota River basin.

The Bois de Sioux Watershed District received the largest grant: $1 million from BWSR will combine with $7.7 million in leveraged funds to construct a gated impoundment along the Mustinka River at Traverse County Road 13. The project anticipates increased flood storage capacity of 19,000 acre-feet (1 acre-foot is equal to the volume of water contained on 1 acre of land at a depth of 1 foot). Other funding sources for the project include Clean Water Funds from BWSR; an Environment and Natural Resources Trust Fund grant, as recommended by the Legislative-Citizen Commission on Minnesota Resources; an Outdoor Heritage Fund grant, as recommended by the Lessard-Sams Outdoor Heritage Council; and a grant from the Red River Watershed Management Board.

The Le Sueur County SWCD plans to use its $408,187 water storage grant plus $102,047 in matching funds to increase the storage capacity of an existing wetland. The project is slated to involve four landowners, converting degraded wetlands and farmland and creating 150 acre-feet of water storage. Estimates show the project would reduce phosphorus by 274 pounds and sediment by 44.9 tons per year.

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— Kerry Netzke, executive director, Area II Minnesota River Basin Projects

The Lyon County SWCD will also pursue wetland modifications, plus a grade stabilization structure to add storage capacity. A $340,940 BWSR water storage grant plus $85,235 in matching funds will help reduce erosion and flooding impacts. The project is estimated to reduce phosphorus by 172 pounds per year and sediment by 172 tons per year, plus add 47 acre-feet of water storage.

“Our partners play an important role in finding projects,” Weaver said of participating local governments. “They identify areas with flooding or water-quality issues and then work with landowners to come up with ideas for storage.”

Area II — a Marshall-based joint powers organization comprised of nine southwestern Minnesota counties — received three of the six grants. Executive Director Kerry Netzke said the Water Quality and Storage Grant Program is a good fit for the type of projects Area II typically pursues.

“We kind of specialize in structural projects — we provide financial and technical assistance to get these projects on the ground,” Netzke said. “There’s many ways to do water storage, but they all involve some temporary impoundment of floodwater.”

A planned grade stabilization structure in Lyon County’s Custer Township would add 30.4 acre-feet of flood storage capable of holding water on the landscape for 18 hours. The project would remove an estimated 213 tons of sediment per year and reduce flows to a downstream ravine by 46%. Work is slated to begin this fall and finish by late December. BWSR’s Water Quality and Storage Grant Program will contribute $94,723 toward the project. Area II and a landowner associated with the project will contribute a $31,577 match.

“People downstream will benefit from reduced flows,” Netzke said. “By reducing the flows, we’re going to reduce damage to properties and streambanks.”

In Redwood County, Area II will use a $140,214 BWSR water storage grant paired with a $46,737 local match to install terraces and a grade stabilization structure to address gully erosion. Redwood SWCD staff will assist with engineering work associated with the terraces on the north side of the Redwood River. These terraces fill and empty quickly, holding approximately 46 acre-feet of water for about an hour. The terraces would reduce sediment by approximately 1,935 tons per year. Directly downstream on the south side of the Redwood River, a small grade stabilization structure would be designed to store 10 acre-feet of water for 18 hours, removing 125 tons of sediment per year. Sediment reductions would benefit the Redwood River and Lake Redwood. Work on this project is slated to begin this fall or in spring 2024.

Area II’s third grant would target a culvert replacement in Lincoln County at the intersection of two township roads, where steep and sloughing banks are creating public safety concerns. The project involves a dry dam that would reduce flows by 25% and hold 96 acre-feet of water for 36 hours. Annual sediment reductions are estimated at 971 pounds. BWSR’s contribution totals $586,813. Local partners contributing to the $195,605 match include Area II, Alta Vista Township and the Yellow Medicine River Watershed District. Construction is expected to begin in fall 2024 or spring 2025.

Netzke said each of the planned projects would yield multiple benefits.

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More BWSR Water Quality and Storage Grant Program grants will be available to local governments in early 2024.