

Root River SWCD project targets trout habitat, aims to curb flood damage and sedimentation



The Root River SWCD project in the Crooked Creek watershed drew from a Watershed-Based Implementation Funding grant. The Clean Water Fund supports WBIF.

CALEDONIA — A \$700,000 Root River Soil and Water Conservation District (SWCD) flood- and erosion-control project nearly 10 years in the making finished in November 2022 with support from Watershed-Based Implementation Funding (WBIF) from the Minnesota Board of Water and Soil Resources (BWSR).

The 28-foot-high earthen dam constructed in the 70-square-mile Crooked Creek watershed, which begins in Caledonia and flows east toward the Mississippi River, is designed to reduce flood damage, curb sediment-loading to Crooked Creek, protect roads and agricultural land, and improve wildlife habitat.

Severe flooding that resulted from a 12-inch, single-day rainfall in August 2007 made the project a priority for the Crooked Creek Watershed District (CCWD), which sought to expand water storage, reduce sediment and improve downstream trout habitat. The 2007 flood caused damage to infrastructure, residential areas and public lands totaling nearly \$26,200 in Crooked Creek Township and nearly \$13,200 in Mayville Township.

In 2016, another round of heavy flooding cut a half-mile-long gully in Winnebago Township that reached 12 feet deep at its deepest point.

The 2016 flooding damaged roads and culverts, wiped out agricultural crops, and deposited debris across farm fields, residential areas and public rights of way. Floodwaters carried thousands of tons of sediment into Crooked Creek, a designated trout stream with rainbow trout and brown trout. Settled sediment can clog pebbly streambeds where trout lay their eggs. Suspended sediment particles can block sunlight, killing important aquatic plants needed for a healthy habitat. Additionally, sediment absorbs warmth from the sun and increases the water temperature.

The project was a top priority in the Root River planning area's Comprehensive Watershed Management Plan developed under BWSR's One Watershed, One Plan program in 2016.

In November 2022, the SWCD finished work on the project within the Crooked Creek watershed. It involved two Winnebago Township landowners: Joe Hammel and Gary Klinski. Most of the project is on Klinski's land. The project will benefit downstream landowners.

While the site remains privately owned, the CCWD obtained an easement that allows access to maintain and inspect the structure.

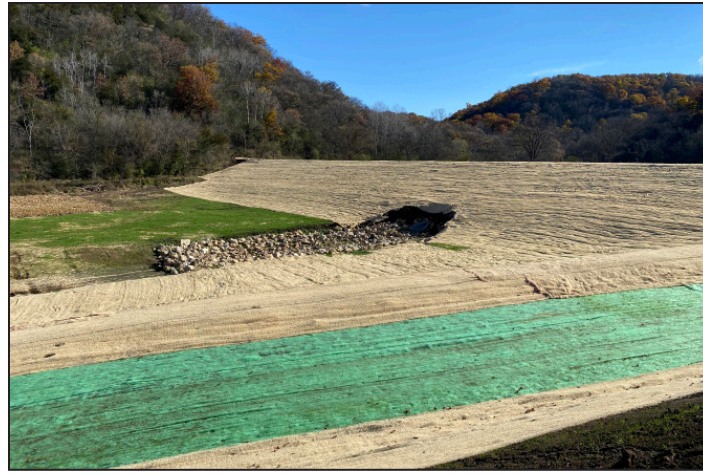
Left: Workers positioned an outlet pipe at the site of a flood- and erosion-control project in the Crooked Creek watershed near Caledonia in August 2021.

Middle: A worker tested the tensile strength of heat-sealed seams.

Right: A vacuum was used to check for leaks in the seams in September 2021.

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Root River SWCD

The pond created by the dam is designed to hold back a 50-year flood event — one that has a 2% chance of occurring in that location in any year. The structure is projected to reduce by 56% the outflow across a 1,010-acre area that includes cropland, pasture, forest and land enrolled in the federal Conservation Reserve Program. With about 110 acre-feet of storage, the structure helps to address the 10-year goals for the watershed in the [Root River Comprehensive Watershed Management Plan](#). The plan aims to curb sediment-loading by 5,393 tons a year, and provide 433 acre-feet of storage to handle two-year, 24-hour runoff events. The structure is expected to reduce sediment-loading by 1,226 tons per year.



*An earthen dam is designed to reduce flood damage and sediment-loading to Crooked Creek, a Mississippi River tributary in Houston County. The site in Winnebago Township is seen here in November 2021, shortly after it was seeded. **Photo Credit:** Adam Beilke, BWSR*

“It’s a big relief finally having it completed after all the years of working on it,” CCWD Treasurer Paul Fruechte said of the storage project.

The CCWD worked to identify funding sources for the project. Clean Water Funds available through Root

River WBIF covered \$435,000 of the cost. The CCWD contributed \$220,000, money generated by its general levy, to engineering and construction costs. Houston County contributed \$40,000 in federal American Rescue Plan funds.

The bulk of construction finished in summer 2021. The existing waterway continued to be used for about a year while the vegetation became established on the new structure. In November 2022 the SWCD removed a diversion, allowing the water to flow through the new waterway and connect to the outlet pipe.

The CCWD will reimburse the Root River SWCD for maintaining the structure. With an engineer from the USDA's Natural Resources Conservation Service, the CCWD inspects all structures within its boundaries once a year.

Root River SWCD staff members spearheaded the project, provided technical support, coordinated with the engineering firm, reviewed easements and obtained permits.



*Flood damage from a single-day event in 2016 washed out part of a township road, **left**, and, elsewhere in the watershed, **middle and right**, carved a gully a half-mile long and 2 feet to 12 feet deep. **Photo Credits:** Root River SWCD*