

Watershed-Based Implementation Funding at work in the metro area



Left: A moisture sensor in a Dakota County corn field helps producers make irrigation decisions. **Photo Credit:** Dakota County SWCD **Middle:** Scott WMO made winter smart salting kits available at community events as part of its efforts to curb chloride pollution. **Photo Credit:** Scott WMO **Right:** A stretch of West Chaska Creek is pictured before construction. Restoration work added 500 feet of shoreline plus native vegetation to reduce erosion and enhance wildlife habitat. **Photo Credit:** Carver County WMO



Watershed-Based Implementation Funding is funded solely by the Clean Water Fund. WBIF grants support watershed planning partnerships throughout Minnesota.

Local governments across the seven-county Twin Cities metropolitan area are pursuing high-priority water-quality improvement projects using Watershed-Based Implementation Funding (WBIF) from the Minnesota Board of Water and Soil Resources (BWSR).

WBIF offers an alternative to competitive grant awards. BWSR awards WBIF grants to partnerships with an approved comprehensive management plan developed under BWSR’s One Watershed, One Plan (1W1P) program and to metro-area partnerships with approved surface water and groundwater plans. With this approach, collaborating local governments pursue projects and programs based on a watershed’s highest priority needs and resource concerns.

“I think the biggest benefit with WBIF is consistency,” said Melissa Bokman, senior water resources planner for the Scott (County) Watershed Management

Organization (WMO). “Knowing that we have consistent funding coming in lets us do better planning and better targeting. The stability of the WBIF dollars is really helpful, especially when planning long-term.”

WBIF grants were first awarded to metro-area local governments in fall 2018. That initial round of funding dedicated \$5.6 million to local government units (LGUs) in the Twin Cities area. Since then, partnerships have received grant funding every two years: \$6 million in Fiscal Years (FY) 2020-21 and \$6.5 million in FY 2022-23. In August 2023, the BWSR Board approved an additional \$9 million for metro-area partnerships for FY 2024-25, which will be available to local governments starting July 1, 2024.

In the metro area, eligible local governments such as watershed districts, WMOs, soil and water conservation districts and counties come together using a [convene process](#) in watershed [planning areas](#) to decide on their

WBIF funding requests. In some cases, a partnership might select a single project, with one of the partner organizations receiving a grant to complete the work. In other cases, multiple projects and grantees might be selected.

Three metro-area local governments shared updates about projects they’ve accomplished using WBIF grants.

Carver County WMO

The Carver County Water Management Organization tapped part of a \$517,979 WBIF grant awarded in 2018 — and contributed a \$175,531 match — to tackle two high-priority projects.

“We’re able to be more aggressive in our water planning and our project list (with WBIF),” said Tim Sundby, water resources supervisor with the Carver County WMO. “We’re looking at updating that list every two years, whereas in the past, we’d be lucky to update it every five to 10 years.”

The WMO retrofitted a stormwater pond that outlets into Lake Bavaria with an iron-enhanced sand filter to reduce phosphorus loading to the lake. Lake Bavaria isn't currently impaired for nutrients, but it's trending toward impairment.

"It's one of the higher quality lakes in the county. It's a highly recreated lake for fishing and skiing, and there's invested lakeshore owners as well," Sundby said. "It's definitely one of our priority lakes."

The project cost \$95,000: the WBIF grant provided \$61,000, the Carver County WMO contributed \$22,000, and the city of Victoria contributed \$12,000. The retrofit project is estimated to reduce total phosphorus to Lake Bavaria by 8 pounds per year. One pound of phosphorus can feed up to 500 pounds of algae. Construction was completed in 2019.

A few miles south of Lake Bavaria, the Carver County WMO embarked upon another WBIF-supported [project to restore a 1,000-foot stretch of West Chaska Creek](#). The project added five meanders to the creek, restoring its natural sinuosity and adding 500 feet of shoreline. The site was planted with native vegetation to reduce streambank erosion and improve wildlife habitat. Remeandering the creek will help to slow water speeds, which decreases stress on the streambanks and reduces the amount of sediment carried downstream. The project is estimated to reduce sediment to West Chaska Creek by 4,400 pounds per year. The project also reconnects the reach of the creek to its floodplain. These improvements will



A project to restore a 1,000-foot stretch of West Chaska Creek was mostly complete as of fall 2023, with additional seeding of native vegetation and ongoing maintenance work planned. Photo Credit: Carver County WMO



The Dakota County SWCD established a weather station about a mile south of Hastings to provide data for an online irrigation scheduling tool. Photo Credit: Dakota County SWCD

help the creek to withstand heavier and more frequent rain events associated with climate change.

About \$435,000 has been spent on the project to date, including \$150,000 in WBIF grant funding from BWSR, \$157,000 from a competitive Clean Water Fund grant from BWSR and \$50,000 in grant funding from the Lower Minnesota River Watershed District. The Carver County WMO covered the balance.

Sundby said construction is largely complete, with

remaining work including maintenance and additional seeding of native vegetation.

"We'll see a lot of ecological benefits with this project," Sundby said. "Phosphorus and nitrogen will be reduced with more interaction with native vegetation within the floodplain. We're reducing the energy of the stream in high flows, so sediment loads are going to go down. We're able to store some of the flood volume in the restored section, and that will reduce the sediment load downstream going to the

Minnesota River. It's turning into a wildlife corridor as well."

Dakota County SWCD

The Dakota County Soil & Water Conservation District (SWCD) used parts of two WBIF grants to develop tools to help farmers calculate the best times to schedule irrigation activities, including the establishment of a weather station and development of a web-based [Irrigation Management Assistant \(IMA\) tool](#).

Dakota County farmland tends to be heavily irrigated due to the area's coarse-textured soils. Before embarking on the project, Dakota County SWCD staff reached out to SWCDs in West Central Minnesota, which is also heavily irrigated. SWCDs from this region shared resources and tools that were working for them. The Dakota County SWCD then held a focus group with local irrigators to find out what resources would be helpful to them. Those conversations identified a need for an automated tool that uses local data to help producers make decisions about ideal timing for irrigation scheduling. Scheduling irrigation activities at the right time can minimize the loss of nutrients in crop fields, manage water in the crop root zone, maximize water uptake, improve water conservation and save farmers money.

The first step in the process was establishing an agricultural weather station roughly a mile south of Hastings to provide data for the IMA tool about rainfall and evapotranspiration. Next, the online IMA tool itself was developed and marketed to area producers via direct mailings and one-on-one

meetings. The tool is free and accessible to anyone.

Dakota County SWCD Senior Resource Conservationist Ashley Gallagher said that improving irrigation scheduling offers benefits for groundwater quality. If a field receives too much water from rainfall or irrigation, water can permeate beneath the crops' root zone, which can result in nitrate leaching into groundwater sources. Gallagher said University of Minnesota research is showing an estimated 60% reduction in nitrate leaching when irrigators use the IMA tool.

"There are a lot of Dakota County residents who use groundwater as their drinking water supply," said Curt Coudron, project management supervisor with the Dakota County SWCD. "This project gives producers another tool to keep nitrates where they can be used by crops, reduce nitrate leaching into groundwater, and protect local sources of drinking water."

The approximately \$59,000 in project costs were funded by the following sources: \$11,000 in WBIF funding from the 2018 grant, \$43,000 from the FY 2020-21 WBIF grants for the Vermillion and Cannon rivers planning areas, and \$5,000 from Dakota County's groundwater department.

Since the IMA tool launched in spring 2022, the University of Minnesota has taken over hosting the tool. According to Gallagher, the University of Minnesota aims to eventually deploy the tool statewide to benefit more irrigators.



Cost-share funding from Scott WMO helped the city of Shakopee purchase a brine maker, shown above. Using liquid brine can make application more precise and efficient than using traditional de-icing salt.
Photo Credit: City of Shakopee

Scott WMO

The Scott WMO used \$84,900 from a \$315,000 WBIF grant awarded in 2018 to curb chloride pollution in county lakes, rivers and streams. The Scott WMO contributed a \$155,794 match to the overall WBIF grant activities.

Several major waterways in Scott County are impaired for excess chloride, including Sand Creek and the Credit River. A large contributor to chloride pollution is the de-icing salt that residents, businesses and local governments use to melt ice on roads, sidewalks and other areas to reduce accidents and slip-and-fall injuries.

"In high concentrations, chloride can be very toxic to fish and other aquatic organisms," Bokman said. "It only takes 1 teaspoon of chloride to permanently pollute 5 gallons of water. It's very destructive. It kills plants, it's corrosive to concrete and

related infrastructure, and it can impact human health if it enters groundwater. There are both human and environmental impacts associated with excess chloride."

The Scott WMO took a threefold approach to address the issue. First, the WMO hosted 12 in-person training sessions in 2018 and 2019 in collaboration with Fortin Consulting to teach public works employees, private business owners and property managers techniques for reducing chloride use when applying de-icing salt. Bokman said more than 100 people attended.

Bokman said the trainings allowed WMO staff to learn about the challenges private applicators face when trying to reduce chloride use. One challenge shared was the need for chloride reduction equipment.

"It's good for us to hear about

those barriers to try to figure out solutions that can help reduce chloride," Bokman said.

Second, the Scott WMO offered cost-share funding to local governments and small businesses to help them purchase chloride reduction equipment. Two small businesses were awarded \$3,000 each in cost-share funds to purchase more environmentally friendly salting equipment. The Scott WMO put \$15,000 toward a \$60,000 equipment purchase for the city of Savage, and the city of Shakopee received \$9,600 toward purchasing a brine maker. Using a liquid brine (chloride dissolved in water) mixture can make application more precise and efficient than using traditional solid sodium chloride (salt), where granules can be scattered beyond the roads and sidewalks to vegetated areas.

The third part of the Scott WMO's chloride reduction efforts focused on outreach and education. The Scott WMO hosted smart salting webinars for homeowners in 2020 and distributed a homeowners' guide to winter maintenance for county residents. The Scott WMO partnered with the Scott SWCD to raise awareness about smart salting techniques at six community events over the past several years. At these events, Scott WMO and Scott SWCD staff offered salt reduction kits for residents that included a cup to help them properly measure salt.