

Upland storage: A study in resiliency



From left: BWSR Chief Engineer Rita Weaver, Mower SWCD Project Manager Cody Fox, BWSR Executive Director John Jaschke and Cedar River Watershed District board member Kevin Kiser discuss the Dobbins Creek project known as Dexter Dam 2 on Sept. 23 in Dexter Township near Austin. The project keeps an estimated 194 pounds of phosphorus and 126 tons of total suspended solids out of downstream waters each year. It is one of 11 similar structures throughout the Dobbins Creek watershed. The structure includes a unique outlet that can reduce the flows from 2- to 5-inch rains by 80% to 90%.

Photo Credits: Ann Wessel, BWSR

A Climate Week event in Mower County highlighted the sort of projects the Legislature had in mind when it required BWSR to develop a water storage and treatment program, and then allocated \$2 million. The intent is to mitigate the effects of climate change, protect infrastructure and improve water quality.



The 2,000-foot-long berm is built across a ditch where photos from the 1930s show a shallow wetland once stood. The culvert connecting the inflow and outflow sides of the berm is sized to allow water to back up on a permanent grass easement, and then slowly meter out. A large rain event could take two or three days to fully drain. The grassed-in ditch is hard to see in this drought year. At center, from left, are Mower SWCD Green Corps member Jensen Bigelow, Kiser, Austin Daily Herald reporter Eric Johnson, Mower SWCD Water Plan and Outreach Coordinator Tim Ruzek, Jaschke, Fox and Weaver.



Top: Mower SWCD and BWSR staff visit with a landowner and Austin Daily Herald journalists after the Climate Week event at the dam, which functions along a 2,000-foot-long embankment with an extremely high-flow reduction outlet and a low-flow pipe. By temporarily retaining water after heavy rains, the structure reduces downstream flood damage and improves water quality. This site handles drainage from 1,240 acres. **Bottom:** The basin outlet is seen from the top of the embankment. **Photo Credits:** Ann Wessel, BWSR



A Clean Water Fund targeted watershed grant from BWSR was among the funding sources for Dexter Dam 2 and other Dobbins Creek projects.

AUSTIN — Dobbins Creek was more of a trickle than a torrent in late September when Mower Soil & Water Conservation District (SWCD) staff showcased a dam built to handle runoff from 1,240 acres.

But Dobbins Creek is among the flashiest of southern Minnesota streams, even in a drought year. Its fast-rising, fast-flowing waters have eroded farm fields, flooded roads and homes, and flushed pollutants into the Cedar River — sometimes surging through in as little as six hours.

“Fortunately, floods don’t come around every day. But when they do, that’s when people are really going to notice these upstream projects,” Mower SWCD Project Manager Cody Fox said during a Sept. 23 Climate Week event at the site. “When we get the next heavy rain, whenever that will be, this will be here to withstand it and people will notice downstream.”

The Dexter Township dam and its controlled outlets — one of 11



such projects within the Dobbins Creek watershed — temporarily retain the water on grassed easements or flowage easements on cropland, and then slowly release it over 24 to 72 hours. Sediment (and the pollutants it carries) settles out. Streambanks are spared destabilizing scouring.

Together, Dobbins Creek projects completed to date have reduced the flow on 100-year rain events by 10%, exceeding the project goal by 2%. Mower SWCD has now set its sights on a 20% flow reduction goal for Dobbins Creek watershed.

“ Although it seems fairly flat, we’ve got a lot of water issues with quantity and quality, and the quality and quantity issues are mainly because when we get these large rain events, the water runs off fairly quickly. ”

— Cody Fox, Mower SWCD project manager

“We’re improving water quality. We’re reducing flood risk downstream to houses, cropland, roads,” Fox said during the event co-hosted by the Minnesota Board of Water and Soil Resources (BWSR) and the SWCD.

As a changing climate brings increasingly frequent and heavy rains, upland water storage is



Mower SWCD staff photographed the basin outlet after a late-August rainstorm. Staff notes the project is intended to meter out runoff, allowing sediment to settle out and reducing peak flows that can scour downstream banks. This project will slowly release water over one to three days vs. six to eight hours. **Photo Credits:** Mower SWCD

one solution that could play out in more places across Minnesota.

“Anytime we add storage to the landscape, we see benefits,” said BWSR Chief Engineer Rita Weaver, adding that lower flows downstream cause less erosion and carry less sediment. “The nice thing that we can do with this project is also calculate how much sediment removal we can expect. So we’ll know the benefit.”

The Minnesota Legislature this year appropriated \$2 million to BWSR, and passed a law requiring the agency to develop a program offering financial assistance to local governments to control water rates and volumes. The intent is to protect infrastructure, improve water quality and mitigate the impacts of climate change. This year the Legislature allocated an additional \$1.35 million for BWSR to develop a program focused on cover crops and other soil health practices that mitigate the negative effects of climate change.

“It’s a worldwide challenge that we’re all up against,” BWSR Executive Director John Jaschke said during the event. “We see this as being a really important, not starting point, but acceleration point for doing these kinds of projects all over Minnesota, particularly in agricultural



A different perspective helps to show the size and scale of the project.

Photo Credit: Ann Wessel, BWSR

parts of Minnesota where you have altered landscapes from ditching and tiling.”

About a dozen people turned out for the event, including staff from BWSR, Mower SWCD and the Austin Daily Herald, plus a landowner.

Kevin Kiser praised SWCD staff members’ handling of a smaller-scale easement on his parents’ nearby farm, which is held in a trust.

“They’re very professional,”

Kiser said. “They do what they say. It’s just a good group of people to work with. I think everybody involved here should be proud of these projects and how it’s going to help businesses in the area, agriculture, farmers.”

Austin businesses including Hormel Foods, which relies heavily on truck traffic, benefit from projects that prevent roads from flooding, Kiser added. The general manager at Freeborn County Co-op Oil

in Albert Lea, Kiser also serves as a Cedar River Watershed District board manager. Dobbins Creek flows to the Cedar River and, eventually, the Mississippi River.

Kiser said his father agreed the project was a good fit.

“It seemed like a good project to take on and be a steward of the land,” Kiser said later in an interview.

From atop the 2,000-foot-long embankment in Dexter Township, a bird’s eye view of the structure and the surrounding landscape unfolded. The project is situated about 10 miles outside Austin, within 1.5 miles from the top of the Dobbins Creek watershed.

A \$1.5 million [targeted watershed demonstration grant](#) from BWSR supported the Dobbins Creek projects. Other funding sources included the Hormel Foundation, the Cedar River Watershed District and the Minnesota Department of Natural Resources.

Mower SWCD staff worked with willing landowners.

“It’s not for everywhere. But we’re trying to select areas through different plans that we had developed, and find the right places to do these projects where we can make the biggest impact,” Fox said.