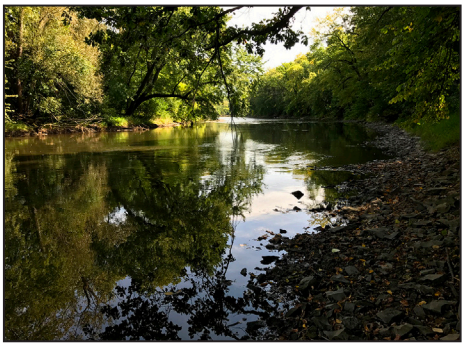


From left: Slabs of exposed bedrock edge the Cedar River at the bottom of a ravine on Jeffrey Pederson's land. Recreational use has increased since the river became a State Water Trail in 2012.Dwane Hull stood at the edge of his field where he'd replaced a culvert and berm years ago. The view from the ravine toward Hull's field illustrates a culvert on the brink of failure. **Photo Credits:** Ann Wessel, BWSR

Cedar River work advances

The most expensive of Cedar River Watershed District's $8.4 million CIP projects break ground in June. The first of 25 priority sites finished last season near Austin. All are designed to improve water quality, reduce flooding and retain topsoil.

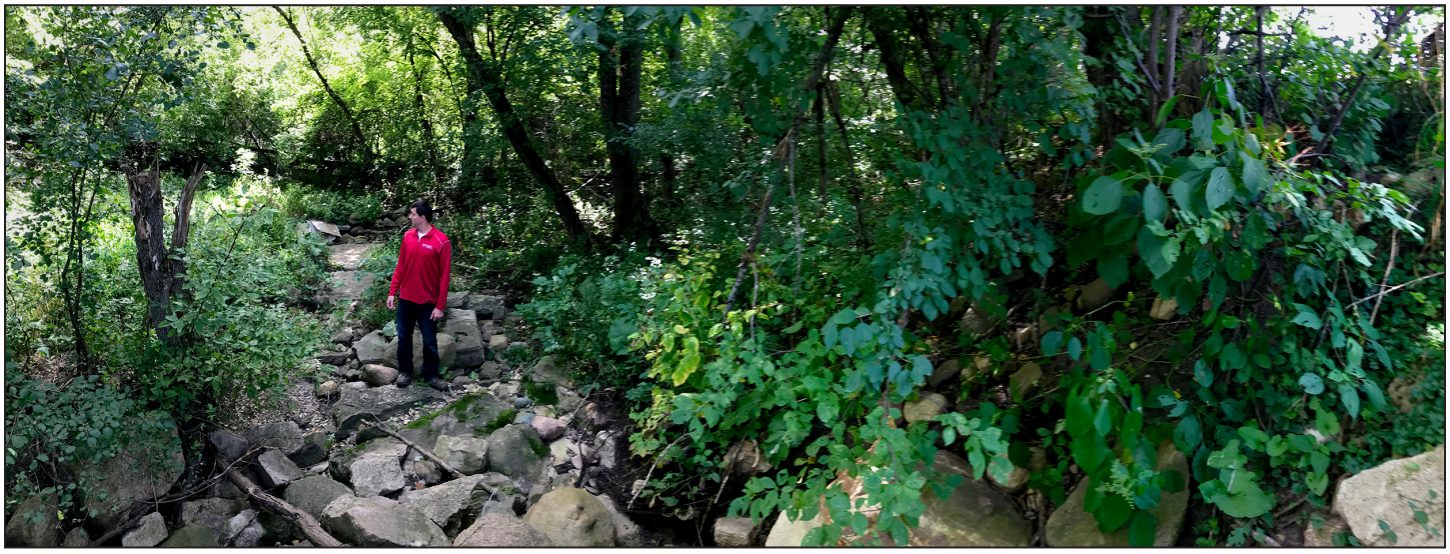
AUSTIN — Dwane Hull figured he was one downpour away from another culvert failure when the Cedar River Watershed District approached him about a replacement.

"If this were to go out, I just don't know if I could do it again," Hull, 67, said of the concrete culvert and earthen berm at the edge of his 160-acre field. "I'd have to hire it done."

> **"You only have soil that's here on this planet. There's no doubt in our minds that we are putting a lot of pressure on the soil."**
> – Dwane Hull, Mower County

Hull built the berm in 2002 to fix an expanding gully. He replaced it two years later after a hard rain destroyed the berm and blew the culvert into the woods.

The $80,000 replacement finished in fall 2017 is one of 25 priority projects in the Cedar River Watershed District's $8.4 million capital improvement plan. CIP projects are designed to detain runoff, stabilize ravines and reduce peak flooding by 20 percent.



Cody Fox, Cedar River Watershed District project manager, lent perspective to the gully leading from Hull's field south of Austin toward the Cedar River about 500 feet downstream. Fixing gullies will help to keep sediment out of the river and topsoil in the fields.

Above: *A failing culvert at the edge of Pederson's corn field was on the brink of washing out in September 2017. It was replaced, and the channel was stabilized. The ravine leads to the Cedar River.* **Below:** *The view of the culvert from the ravine looking toward the corn field shows the path runoff followed to Cedar Creek south of Austin.*

To date, the CRWD has received $3.2 million from the Hormel Foundation, $1.7 million in state bonding and $1.1 million from Minnesota Board of Water and Soil Resources Clean Water Fund grants. The CRWD will levy up to $1 million as a match toward the overall initiative.

CLEAN WATER LAND & LEGACY AMENDMENT

At the edge of Hull's field, which lies about 500 feet from the Cedar River, crews installed a new culvert and larger berm. The structure will detain runoff from the 400-acre drainage area for up to 24 hours, and then slowly meter it out. It's built to withstand a 100-year flood.

"Our goal is slow (the runoff) down enough to allow sediment to drop out before it gets to the river, but also quickly enough to minimize risk to the crop field immediately adjacent to the structure," said Cody Fox, CRWD project manager.

Hull signed a flowage easement and will maintain the vegetation within the grass easement.

"It's going to put this thing back into place — forever," Hull said last September before construction began.

"You only have soil that's here on this planet. There's no doubt in our minds that we are putting a lot of pressure on the soil," said Hull, who had previously enrolled land in the Conservation Reserve Program. "I've had erosion in some spots that you could drive a car down into. It can get bad real quick. I've taken care of them, filled them in, put grass in, and protected it from getting any worse."

Hull's wasn't the only structure on the brink of failing.

On a neighboring property, a rusted, perforated culvert was beyond repair.

> **"Now you add extra heavy rain events. You've got more runoff because of more intensive row-cropping. So all those things together, you've got a lot more water running in areas that you didn't before."**
>
> – Cody Fox,
> Cedar River Watershed District

"If we had a large rain right now, it would probably blow out," Fox said during a September visit.

The culvert was replaced, the channel stabilized. Here, at the bottom of a deep ravine, slabs of exposed bedrock lay along the river.

"It's down to the bedrock, which means it's probably not going to get a whole lot deeper. But it also tells you: 'Where did that soil go?' It's gone," Fox said.

Farther upstream on the same property, an uncontrolled gully was cutting back toward a corn field. There, a dike was built and trees were removed to allow bank-stabilizing grass to grow.

Last season, four of the 25 targeted projects were completed. Two more are scheduled to start in June; engineers are designing four more for 2018 construction.

The June projects — $521,700 to build two stormwater detention structures at the top of the Dobbins Creek watershed southeast of Brownsdale — are the largest in the CIP.

Dobbins Creek flows through Jay C. Hormel Nature Center on its way to the Cedar River. The project is estimated to reduce peak flows by more than 80 percent, keep 134 tons of sediment and 218 pounds of phosphorus out of the creek annually, diminish downstream flooding and streambank erosion.

Although the average grade is only 1 to 3 percent, changes in agriculture and weather have contributed to faster runoff across Mower County.

"In all three of these sites, there's a natural channel for the water," Fox said of the adjacent sites along the Cedar River south of Austin.

"However, if you look back years and years ago, they used to have small grains and the fields were split up much differently," Fox said. "There used to be a lot more hay and grass in the rotations, so you used to have a lot less runoff. You didn't have as many issues with erosion because it was slowed down, and you had more infiltration of the water. Now you add extra heavy rain events. You've got more runoff because of more intensive row-cropping. So all those things together, you've got a lot more water running in areas that you didn't before."

Most of the 25 priority sites lie upstream in the 435-square-mile watershed. The big-picture goal is to avoid scenarios unfolding in the Dobbins Creek watershed, which flows into Austin's East Side Lake. There, the creek has eroded backyards.

"If we slow the water down, we will prevent a lot of that. With the dam itself, we're catching sediment on the land, keeping it where it's supposed to be – upstream rather than in the (Cedar River). We're also preventing excessive erosion in the channel itself," Fox said. "And then you're preventing flooding downstream, taking some of the velocity out of the water on the larger storm events, which will also minimize streambank issues downstream."

Top: *Fox and Hull talked in September about the culvert and berm replacement planned on Hull's property, which drains 400 acres. The new structure, built in fall 2017, will detain runoff and then slowly meter it out.*
Left: *Jerusalem artichoke blooms along the Cedar River in the ravine facing Pederson's corn field.*

Even as watershed work continues, CRWD staff is hearing paddlers and anglers' anecdotal evidence that water quality in the Cedar River is improving. The river has received more attention since it became a State Water Trail in 2012.

The CRWD promotes the river with events and photo contests. An Adopt-a-River effort has removed more than 1,100 tires from the paddling route.

"It's really a beautiful wooded corridor that's great for paddling for all ages. There's no major rapids. It's not deep or too fast-flowing," said Tim Ruzek, CRWD educator/water plan coordinator.

Anglers pursue smallmouth and largemouth bass and northerns. One angler reported catching a trout. While it likely escaped from a rearing pond, Fox said the catch was still significant.

"Just the fact that they got out and they're still living is quite a success story to us," Fox said of the species that requires clear, cold water.

The Minnesota Board of Water and Soil Resources' mission is to improve and protect Minnesota's water and soil resources by working in partnership with local organizations and private landowners. Website: www.bwsr.state.mn.us.