

# Water quality is ditch fixes' No. 1 goal



**Left, Middle:** Nine side-inlet control structures were installed in fall 2016 where a lateral feeding County Ditch 8 runs parallel to a mile-long stretch of minimum-maintenance road. Crushed asphalt tops the road where culverts were installed. The road slices through long, linear wetlands. This is the April 7, 2020, view, showing a perforated, above-ground inlet pipe that provides another release for backed-up water in spots where water is meant to stand for a short time, allowing sediment to settle out. **Right:** The re-sloped streambank stabilization, pictured here after a high-water event in 2019, has functioned as intended. **Photo Credit:** Torin McCormack, RRWD

## Roseau River Watershed District’s Clean Water Fund project curbs rain-induced, perennial erosion; brings a 100-year-old system in line with modern ag practices

ROSEAU – It used to take a gully washer to bring farmers into the Roseau River Watershed District office.

Before a \$147,700 Clean Water Fund grant got them talking about fixing perennial problems on the 100-year-old County Ditch 8 system, District Administrator Tracy Halstengard would hear from landowners only when

heavy rains caused severe damage.

For some farmers, clearing out a sediment- and debris-filled ditch every year was routine. So was losing topsoil.

“What we want to help the landowners do is work on those annual, every-few-year events so they’re not being hit consistently,” Halstengard



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more than \$84,000 in repairs and maintenance. The Minnesota Board of Water and Soil Resources (BWSR) grant targeted trouble spots within the 18-square-mile subwatershed.

said in July 2017.

In the previous 10 years, landowners on the County Ditch 8 system had paid

Work started in 2016. Weather delayed the final project until August 2019.

“As we continue to promote projects that we’ve done with Clean Water Funds, the activity continues to grow. I don’t know if it’s specific to that project, but we’re working with landowners throughout the watershed to see if we can find good projects,” Halstengard said this spring.

County Ditch 8 projects involved eight landowners. Work involved a 325-foot-long bank stabilization on a stream



**Left, Middle:** This view depicts conditions of the lateral feeding County Ditch 8 and the minimum-maintenance road in 2017. Plans called for clearing cattails, other plants and trees from that lateral ditch once fixes were made farther up in the watershed. In the past, some landowners had cleared ditches or cut channels themselves. **Photo Credits:** Ann Wessel, BWSR **Right:** The stream that connects Roseau County Ditch 8 to the Roseau River threatened to undercut an 80-foot-long shed on private property. **Photo Credit:** RRWD

connecting the ditch to the Roseau River, 22 side-inlet control structures designed to stabilize field outlets, and two rock grade-stabilization structures designed to stop gully erosion and curb sediment entering the ditch.

BWSR estimated the entire project would keep 275 tons of sediment — the equivalent of 21 dump truck loads — out of the Roseau River annually.

The Clean Water Fund grant covered 75 percent of the \$184,625 total project cost. The work demonstrated how the district can help farmers.

“Instead of just putting tax money into cleaning, we can work with (landowners) ... to keep that topsoil on the landscape,” Halstengard said.

County Ditch 8 was built in 1911. Agriculture expanded and grew, but the ditch remained largely unchanged.

The ditch's headwaters sits amid a series of long, linear wetlands interspersed with strips of farmland. Glacial Lake Agassiz defined the topography.

“We have these ridges of slightly higher ground and these troughs that were basically the shallows of Lake Agassiz. The troughs became wetlands once the lake had subsided,” Torin McCormack, RRWD watershed specialist, said in July 2017 while enroute to view project sites.

## Site of side inlets

At the first stop, where nine side-inlet control structures were installed, a lateral ditch and mile-long, minimum-maintenance gravel road cut a perpendicular line through those wetlands. The road had washed out in the middle and had been cut in low, swampy spots. Fields were drained directly into the ditch.



*The vegetated drop structure, the only element of the County Ditch 8 project damaged since construction, is pictured here one month after repairs. Photo Credit: Torin McCormack, RRWD*

The road is the only access to 440 acres, most of it hunting land, Norbert Pastir owns with his son Perry. Pastir rented out the 85 scattered, tillable acres.

Driving through after a rain left ruts. McCormack said that led to one of two things:

“The next event would push that material into the ditch. Or sometimes they’d try and reshape it and start altering the ditch dimensions which caused more potential for soil loss. We wanted to stabilize it so it would stop that sediment contribution.”

Crushed asphalt now tops the road where side inlets were installed. The structures allow sediment to settle back onto the land, reducing the load downstream. The ditch will become more efficient as sources of inland sedimentation are fixed, and the overgrown willows and cattails are cleared.

## Grade stabilization

Roseau County Ditch 8 divides Tony Brateng’s fields east of Highway 89. Here, the county

ditch system ends where that east-west waterway empties into a smaller, tree-lined ditch that joins the Roseau River.

Brateng, who grows wheat, grass seed and soybeans, described the need for two rock grade-stabilization structures built in fall 2016.

“The water would back up and it wouldn’t let that spring runoff happen as fast,” Brateng said.

“Initially it was pretty wooded back there, so with northwest winds, it would drift in and create some pretty massive snowdrifts which, in the springtime, would take forever to dry out. The water would get forced down there and spiral and eat away at the banks and the integrity of the ditch,” Brateng said.

Contractors removed some trees, resloped the ditch banks, and lined the banks with fabric and rock. Rocks stabilized another spot where the creek was working its way into the field. Now, a sediment trap catches anything that’s carried

through the grass.

## Bank stabilization

Michelle Mekash had noticed plenty of erosion on her land south of town, where a stream connecting County Ditch 8 to the Roseau River threatened to undercut an 80-foot-long shed.

“It’s 6 acres plus, but it’s probably less than that now because all the banks have been washing in,” Mekash said of the site 3 miles south of town, a half-mile from the Roseau River.

“Pretty soon the shed is actually going to be in the creek,” she said in 2017 before work began.

The 325-foot bank stabilization was meant to cut the amount of sediment entering the Roseau River.

“They’re straight vertical walls, and they continue to fail over time into the channel and then wash away downstream,” McCormack said.

The stabilization has withstood several high-water events. The yard no longer is eroding into the stream.

Only one of the County Ditch 8 project sites has required repairs. It was damaged in a flood and fixed shortly thereafter.

One day, McCormack said he hoped landowners would come into the RRWD office unprompted.

“Ideally, it would be a steady stream of people coming in wanting to get enrolled in some conservation practice. Our big point is to try to help landowners start adopting these practices early,” McCormack said. The primary benefits are to water quality.”