



Battling Floodwaters and Erosion in Nicollet County

September 2014 Snapshots

Heavy rains over the past few years have taken their toll on Nicollet County's local roadways. A typical June for the county involves less than five inches of total rainfall. This June the county was deluged, with rainfall totals measuring from 8 to over 14 inches across the county, most of which fell over a six day period in the middle of the month.

Nicollet County residents experienced heavy rainfalls in 2010 and 2012, too, extreme weather events whose impact was felt on farm fields, in basements, along stream and river banks, and in washed out and mud-covered roads. The damage extended to the Minnesota River, as all of the soil and other material that was picked up in the heavy rains washed into its waters.



Highway 169 in St. Peter, flooded from the June 2014 rain events. (Photo from MnDOT)

As debris and soil got washed onto roadways, the number of traffic disruptions increased. Recognizing the need to take action, the Minnesota Department of Transportation (MnDOT) office in Mankato approached the Nicollet Soil and Water Conservation District (SWCD) in 1997 and again in 2012 to see what might be done to help address the situation. Working together, the agencies determined that to successfully keep soil off the road and on the land, they needed to look to upland areas along state highways. MnDOT and the Minnesota Board of Water and Soil Resources (BWSR) reached an interagency agreement to use BWSR's cost-share program to make this happen. We allocate funds to local conservation districts, who in turn work with landowners to install best management practices such as water damming and pooling systems.



The Krohn grade stabilization structure during construction.

Nicollet SWCD received \$150,000 in 1997 to help seven landowners install 25 conservation practices that keep 657 tons of sediment in place each year. In 2012, the district received another \$385,000 to continue its work. Local landowners worked with Nicollet to identify vulnerable areas of their property that were also areas of concern for MnDOT. Chris Krohn, a landowner in Belgrade Township, installed a grade stabilization structure that captures runoff from an estimated 59 acres of his fields. This structure consists of an embankment that holds back water, preventing soil from eroding at the edge of the field and down a ravine in the process. This helps reduce the amount of pollutants entering local waterways to the tune of 1,070 pounds of phosphorus and 933 tons of sediment each year.

The conservation district added a large buffer around the structure to treat additional runoff, increasing its effectiveness. Designed to last 30 years, the structure has continued to perform up to expectations, even during increasingly common high intensity rainfalls. The end result is a positive not just for the landowner and



The Krohn grade stabilization structure during mulching, November 2012.

MnDOT, but for everyone who relies on those roads for transportation.

There is still more work to be done, but progress is being made. Another site on State Highway 99 has been designed and is currently waiting for construction to be completed. MnDOT's Rolin Sinn credits the hard work and landowner relationships of Nicollet SWCD District Manager Kevin Ostermann for the program's continued success. Working together, these kinds of partnerships between landowners, local government and state agencies will continue work to ease the impacts of heavy rainfalls – on the land, on the water, and on the roadways of Nicollet County.

