

GELDAKER RIVERBANK STABILIZATION RAMSEY, MN



Riverbank Stabilization



Project Summary

The Geldaker property along the Mississippi River in Ramsey was severely eroding, caused by bank undercutting as a result of intense river flows. The excessive erosion, averaging a foot per year, threatened the property and associated structures, contributed sediment and nutrients to the river, and eliminated wildlife habitat. The Anoka Conservation District (ACD) worked with Houston Engineering to design a stabilization project which focused on stabilizing the toe of the riverbank slope. The design included assorted rip rap, erosion stabilization blankets, and percussion anchors intended to protect the shore during high flows. Native grass buffers were also included at the top of the bank to reduce pollutant loading and erosion from overland sources. The project is estimated to reduce sediment input to the Mississippi River by 120,000 lbs (60 tons) annually. Funding was provided by the Lower Rum River Watershed Management Organization (LRRWMO) water quality cost share, Agricultural (Ag.) Preserves cost share, Nonpoint Engineering Assistance Program (NPEAP), ACD in-kind dollars, and landowner contributions.



Completed project in the summer of 2014.

Project Specs

Date Installed August 2014
 Shoreline Length Restored 100 ft
 Restoration Type Hard Armoring
 Sediment Reduction 60 tons

Project Cost

Administration \$4,085.50
 Design and Construction Oversight \$9,721.51
Construction \$30,278.49
 Total Project Cost \$44,085.50

Project Funding

LRRWMO Cost Share \$1,431.20
 Ag. Preserves Cost Share ... \$5,746.68
 NPEAP Funds \$9,721.51
 Landowner Contributions. \$23,100.61
ACD in-kind dollars* \$4,085.50
 Total Project Funding \$44,085.50

* Based on ACD fee schedule rates

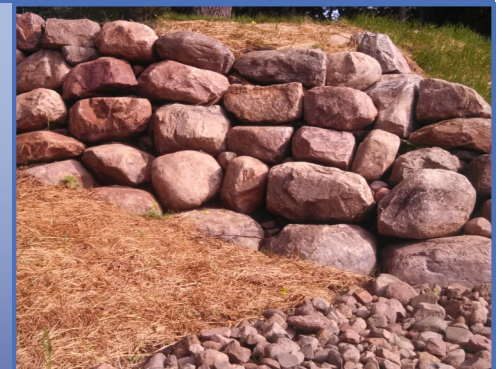
Installation Process



Pre-stabilization conditions consisted of a severe, actively eroding cutbank along 100 ft. of the landowner's shoreline. Bare soil and exposed tree roots were clearly visible.



Designs from Houston Engineering specified hard armoring was required to stabilize the toe of the slope. Rip rap was overlaid on geotextile fabric to provide a bank structure that prohibits further erosion.



Stabilization mats (on left) with percussion anchors were used to further protect shoreline access around rip rap. A native grass buffer was also planted at the top of the banks to reduce overland erosion.