



POLK COUNTY DITCH 99 OUTLET STABILIZATION PROJECT

A geomorphological study of the Red Lake River Watershed found that near-channel gully erosion, particularly along smaller natural watercourses and ditch systems, is a source of excess sediment in the Red Lake River. Watercourse outlets often lack grade control between the last road crossing (culvert) and the river, which makes the channels vulnerable to uncontrolled erosion when combined with steep slopes, weak soils, seepage, and other factors.

Polk County Ditch 99 (CD 99) is located near the east edge of the city of Crookston. The ditch collects drainage from the northeast corner of the city and agricultural land to the north and east. The Red Lake River One Watershed One Plan (1W1P) identified the Red Lake River between Thief River Falls and Crookston as one of the priority areas for reducing sediment loading. Annual work plans for 1W1P Watershed-Based Implementation Funding (WBIF) specifically identified the glaring erosion problem at the outlet of CD 99 as a priority ditch outlet stabilization project.

The project was successfully coordinated among staff from Polk County, the West Polk Soil and Water Conservation District, landowners, and the Red Lake Watershed District. HDR Engineering was hired to plan and design the project. Well monitoring was conducted from the summer of 2022 until the summer of 2023 to understand water levels in the project area. The landowners were kept in the loop throughout the process. Plans were completed in May 2023 and bids were opened on June 16, 2023.



Contributions from multiple funding sources were necessary to complete the project on time. Much of the initial survey data collection work was conducted by Polk County. The design work from HDR Engineering was funded by Red Lake River WBIF. Construction costs were funded by:

1. Red Lake Watershed District
2. Small Watersheds Focus 319 Grant (From the Environmental Protection Agency)
3. Red River Watershed Management Board Base Water Quality funding
4. Polk County (ditch funds)
5. Federal Emergency Management Agency (FEMA)



Construction was completed in October 2023. Rip rap along the channel bottom, raising of the channel along residential property, and rock chutes to handle grade drops, key trenches, re-sloping, and side water inlets were incorporated into the design.

The project stabilized 1,050 feet of channel that had been contributing to excess sediment in the Red Lake River at an estimated rate of 704 tons/year. In addition to the water quality benefits, the county was able to protect their new 265th Street Southwest culvert from erosion, a home and yard along the west side of the channel were protected, and the homeowner's safety concerns about the steep gully were addressed.



By stabilizing 1,050 feet of actively eroding channel, this project reduces sediment loading to downstream waters by an estimated 704 tons/year.



PROJECT MANAGER	KERRIE BERG	
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CHECKED BY	R. KNIGHT	
PROJECT NUMBER	10340254	
ISSUE	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 DATE: 5/11/2023 LICENSE # 57334
 Kerrie Berg
 KERRIE BERG

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