Capital Improvement Project

Rosemount/Flint Hills Ravine Restoration Project

Stormwater flowing through a culvert eroded a deep ravine into a steep bluff, contributing sediment to Spring Lake. A grade-control structure, a pond, an infiltration area and re-vegetation reduced sediment runoff.

Completed cooperatively by:

- City of Rosemount
- Flint Hills Resources
- VRWJPO
- Dakota SWCD
- Dakota County Parks Department
- Minnesota Dept. of Transportation

A grant from the Clean Water Fund, one of four funds established by the Clean Water, Land & Legacy Amendment, supported this project. Clean Water Stories can be found on the Minnesota Board of Water and Soil Resources website.

Reducing sediment erosion to the Mississippi River

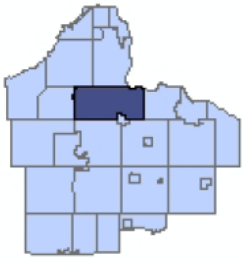
Water from an area near the interchange at U.S. Hwy 52 and Minnesota Hwy 55 was flowing through a culvert under a Union Pacific Railroad line and spilling onto a steep bluff face at the head of a ravine on property owned by Flint Hills Resources. The stormwater runoff accelerated erosion and ravine development and contributed sediment to Spring Lake and the Mississippi River.

Dakota County, Dakota Soil and Water Conservation District (SWCD), the City of Rosemount, the Minnesota Department of Transportation (MNDOT), Flint Hills Resources, and the Vermillion River Watershed Joint Powers Organization (VRWJPO) identified a solution: a grade control structure to convey water from the top of the bluff to the bottom, eliminating further erosion of the bluff face.

A pond located at the bottom of the structure dissipates energy, settles sediments, and promotes additional water retention. A weir structure on the upstream end of the culvert will help retain and provide for the infiltration of stormwater.

Sediment reduction to Spring Lake and the Lower Mississippi River is estimated at 82 tons/year.

The project included a grade-control structure to take water from the top of the bluff to the bottom, where it flows into a pond designed to dissipate energy, settle sediments, and promote water retention.



City of Rosemount, Minn., within the Vermillion River Watershed.

Vermillion River watershed *reflecting life*

Vermillion River Watershed Joint Powers Organization
14955 Galaxie Avenue
Apple Valley, MN 55124
www.vermillionriverwatershed.org
952-891-7000

The Vermillion River is a vital natural resource that is important to public health and recreation, as well as preserving unique wildlife habitats. It flows from New Market Township in Scott County, through residential and agricultural areas in central Dakota County, and cascades into a 100-foot ravine before it enters the Mississippi River near the Cities of Hastings and Red Wing, Minnesota. Throughout its journey, the river reflects urban and rural life within its 335-square mile watershed.

Problem:

- Water from an area near the interchange of U.S. Hwy. 52 and Minn. Hwy. 55, flowing through a culvert under the Union Pacific Railroad, spilled onto a steep bluff face at the head of a ravine. This accelerated the head cut and ravine development and caused severe erosion and sediment transport to Spring Lake and the Mississippi River.

Actions:

- Installed a grade-control structure that takes water from the top of the bluff to the bottom, eliminating flow from cutting into the ravine and transporting sediments downstream.
- Installed a weir at the upstream end of the culvert to retain and provide for the infiltration of stormwater.
- Installed a pond to dissipate energy at the bottom of the grade-control structure, settle additional sediments, and promote water retention.

Benefits:

- Improving water quality by preventing an estimated 82 tons per year of sediment from flowing into Spring Lake and the Lower Mississippi River. The Lower Mississippi River is impaired for turbidity (suspended solids), and the project reduces sediment loading to the River.
- Stabilizing the bluff area where the Mississippi River Regional Trail, a paved biking trail, will be placed.

Costs and contributions:

- Clean Water Fund: $175,440 grant
- City of Rosemount: Engineering and construction management
- Vermillion River Watershed Joint Powers Organization: $13,044 cost share
- Dakota County Parks: $13,044 local match
- Minnesota Department of Transportation: $18,942
- Flint Hills Resources: $32,391 project land value match
- Dakota County Soil and Water Conservation District: Technical assistance

Total project costs: $252,861

Project completed July 2014

12/2016