Pickwick Dam Emergency Outlet Repair and Streambank Stabilization

Featured Project

A local-state-federal partnership of conservation agencies repaired an emergency spillway at the Pickwick Dam in 2009. The dam is located on Big Trout Creek southeast of Winona, and it was one of hundreds of sites that were damaged by extreme rainfall and flooding in southeast Minnesota in August 2007.

Yaggy Colby Associates was hired by Homer Township to provide engineering assistance to repair the damage. The firm designed a large plunge pool lined with riprap, supplemented by downstream rock riffles and channel riprap lining. The project provides substantial energy dissipation to prevent outlet channel erosion.

The Pickwick Mill and dam were originally constructed in 1854-56 at the site of a natural falls, and the mill operated continuously until 1978. The mill recently has been partially restored by Pickwick Mill, Inc. Water held back by the dam is being used to run the mill for demonstration, and the Mill Pond (Lake LaBelle) is used as a source of water by the local fire department. The emergency spillway was constructed in 1987 at the site of a dam breach in 1980 that also damaged the gated principal spillway. Two 10 feet by 10 feet concrete conduits were installed at that time, funded primarily by state funds through the DNR Flood Damage Reduction Program and the State Conservation Cost-Share Program, as well as local funds through the Winona Soil and Water Conservation District.

Before (top) and after photos of the Pickwick Dam Emergency Spillway Outlet.

Location: Pickwick, MN, Homer Township (Township 106, Range 6, Section 13), Winona County

Partners: The project was completed by the USDA Natural Resources Conservation Service, Minnesota Board of Water and Soil Resources (BWSR), Winona Soil and Water Conservation District (SWCD), and Homer Township, in coordination with the Minnesota DNR Dam Safety Unit and Pickwick Mill, Inc. Engineering assistance was provided by Yaggy Colby Associates.

BWSR Featured Project

Project Timeline: Project assessment and partner planning were completed in fall 2008. Funding was approved in January 2009. RFP was let and consultant selected in spring 2009. Consultant began work in April 2009, design and bid documents completed in June 2009. Construction began July 2009 and was completed in October 2009.

Project Costs / Funding Sources:

Engineering	$47,457.22
Construction	$248,177.98
Total Project Cost	$295,635.20

Federal Funding: USDA NRCS Emergency Watershed Protection (EWP) Program

Engineering	$19,817.22
Construction	$185,786.40

State Funding: BWSR SE Flood Relief State Cost-Share Program

Engineering	$27,640.00
Construction	$62,391.58
SWCD Technical Assistance	$6,931.70

The Pickwick Dam emergency spillway outlet (looking downstream) features a plunge pool with boulder riffles and riprap channel lining downstream to maintain a depth of 5 feet.

Keys to Success: Providing assistance to hire private engineering and construction companies to work on this project was the key to getting the project done on schedule and meeting the technical assistance requirements of state and federal funding sources. The large number of flood recovery projects that require engineering has created tremendous workload for engineering and technical staff for the local, state and federal conservation agencies. Homer Township was the local sponsor of the project and recipient of the state and federal funds, so the township was responsible for ensuring that the project meets the necessary technical standards. Terry Ragan, BWSR Project Engineer, assisted Homer Township throughout the process of soliciting and reviewing proposals from consulting engineering firms, reviewing design documents and coordinating with NRCS reviewers. BWSR also helped facilitate coordination with the DNR Dam Safety Unit and Winona County to address dam safety issues associated with construction of a new county bridge over the Pickwick Dam principal spillway concurrently with the emergency spillway outlet repairs. The same construction contractor, Minnowa Construction of Harmony, MN, was hired for the bridge project and the emergency outlet projects, which facilitated both projects being done at the same time.

BWSR roles: BWSR engineering staff worked with Homer Township and USDA NRCS to ensure accountability of public dollars by overseeing the engineering and construction of the emergency outlet repair project. BWSR staff assisted in coordinating the state and federal funding sources and related technical requirements to complete the repairs, so that the outlet will be able to withstand the high velocity of flows from future flooding events. Specific BWSR duties related to the Cost-Share Program are found in M.S. 103C.501 and MN Rules Chapter 8400. Rule waivers were provided for through Special Session in H.F. No. 1, Article 1, Sec. 6 and 16.

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