

# Keeping Dams Safe

## Protecting People, Property and Natural Resources

### Alma-Mill Creek Watershed A Pilot Rehabilitation Project

### Wisconsin



**T**hree small flood control dams in the Alma-Mill Creek Watershed were selected and funded in 2000 as part of a national pilot rehabilitation project. These dams will be rehabilitated to ensure they remain safe and continue to provide protection for people, property, and natural resources.

The experience and information gained in these pilot projects will be used as other dams across the nation are rehabilitated.

#### **Situation:**

Three of the six dams in the watershed project need rehabilitation to remain safe and to continue to provide protection for property and natural resources in the watershed. The principal spillway conduits of dams 2, 3, and 5 have deteriorated. Sediment has greatly reduced flood storage in Dams 3 and 5.

#### **Why Action is Needed:**

These dams provide gully erosion and flood control. They reduce the amount of sediment that is deposited downstream and reduce damages to roads, bridges and agricultural lands during heavy rainstorms. Dams 2 and 3 are in the upper reaches of Mill Creek, which drains into the Buffalo River that flows into the Mississippi River. Mill Creek is a Class II trout stream. Dam 5 is in a drainage way to Fimian Creek, that has nearly one mile of Class II trout stream.

If the dams failed, sediment and floodwaters would degrade the wetlands downstream. This would include Rieck's Lake in the Upper Mississippi River Wildlife Refuge. This lake provides habitat for Tundra swans that stop at the lake in the fall. Trumpeter swans, an endangered species, also stop over at Rieck's lake.



The Alma-Mill Creek Watershed dams trap sediment and prevent it from reaching Rieck's Lake, a significant habitat for Tundra Swans. The dams also protect rural roads, bridges and agricultural lands and help maintain trout streams.

#### **Action:**

The principal spillway conduits of dams 2, 3, and 5 will be repaired and the embankments reconstructed to meet dam safety requirements. Sediment will be removed from dams 3 and 5 to restore flood control and sediment storage. A floodplain-zoning ordinance will be enacted as part of the plan to restrict future development in the floodplain.

- ◆ Rehabilitation Costs: \$333,000
- ◆ Funding: Sixty-five percent of the project construction cost and technical assistance will be provided by USDA Natural Resources Conservation Service through the 2000 Agricultural Appropriations Act. This act authorized pilot rehabilitation projects in Wisconsin, New Mexico, Ohio and Mississippi. Local sponsors are responsible for 35 percent of the cost, landrights, and easements.

**Watershed Project Sponsor:**  
Buffalo County Land Conservation Committee.

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### Rehabilitation Planning Process

Several alternatives were considered by local sponsors including taking no action, removal of the dams, and rehabilitating the dam. Public meetings were held to obtain local input.

NRCS assisted with an environmental assessment and developed a supplement to the watershed work plan.

The alternative selected will extend the life of the dams for another 50 years.

### Alma-Mill Creek Watershed

- ◆ Size: 10, 957 acres
- ◆ Number of dams: 6
- ◆ Primary Project Purpose: stabilize gullies in the main tributaries and provide watershed protection and flood control for rural areas.

The dams were built through the Watershed Protection and Flood Prevention Act (PL 83-566) by the USDA Natural Resources Conservation Service, assisting local project sponsors.

### National Rehabilitation Needs



Location of dams that are over 30 years old.

- ◆ Since 1948 over 11,000 small flood control dams have been built in 2,000 watersheds in 47 states.
- ◆ Many of these earlier constructed dams were designed for a 50-year life expectancy. Over one-half of the dams are over 30 years old.
- ◆ Today many of these older dams need rehabilitation. Concrete and metal used in the principal spillways have deteriorated and in some situations public safety and health are at risk.
- ◆ Over 400 watershed project sponsors in 36 states indicated an interest in USDA funds and assistance in 2001 to rehabilitate over 1,400 dams.

### Wisconsin Watershed Program

Eighty-seven small flood control dams have been built in Wisconsin through the Watershed Protection and Flood Control Act of 1953 (Public Law 83-566). Most of these dams were built from the mid-1950's through the 1980's.

Small flood control dams are important to Wisconsin in many ways. They provide flood control for prime farmland, highways, and communities and conserve natural resources. They are an integral part of communities and benefit peoples' lives every day.

### Rehabilitation Needs

- ◆ Over 13 thirteen dams in the state have deteriorating components including pipe separations or cracked concrete pipe supports.
- ◆ Over 20 dams are known to be built in rock formations that have fractured bedrock, a condition that led to a failure of a dam in 1978.
- ◆ Increased hazards have been created downstream from over 20 dams due to home development in or near the flood plain.
- ◆ Structural components like slide gates and principal spillway pipes have deteriorated.
- ◆ Sedimentation has reduced flood storage in some structures.

For additional information about this rehabilitation project contact the USDA Natural Resources Conservation Service office, 6515 Watts Road, Suite 200, Madison, Wisconsin, 53719, (608) 276-8732.

Information about pilot rehabilitation projects in other states and about other issues related to aging watershed dams is available at the NRCS national web site ([www.nrcs.usda.gov](http://www.nrcs.usda.gov)). Click on Aging Watersheds.

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