

Watershed Rehabilitation Program Watershed Protection and Flood Control Act of 1954

The watershed dams built through Public Law 83-566, the Watershed Protection and Flood Control Act of 1954, are important to Wisconsin in many ways. These dams were built from the mid-1950's through the 1980's. These 87 dams are an integral part of many Wisconsin communities and benefit people's lives every day. They provide flood control to prime farmland, highways, communities and residences and conserve natural resources.

Wisconsin was chosen in 2000 as a pilot state to rehabilitate several aging watershed dams. All of the dams in this summary report were selected to be repaired under the national Pilot Dam Rehabilitation Program.

Experience and information gained from these projects are being used as other dams are rehabilitated across the nation.

Rehabilitation of these dams extends their lives another 50 or 100 years, depending upon the original planned life of the structure. All of these dams were built with the primary purpose of flood control downstream of the structures and some of them provide opportunities for recreation as well.

Before construction can begin on any project, the community must have passed laws to prevent development in the floodplain downstream of the dams.



Watershed Rehabilitation Projects Completed in Wisconsin as of August 2006

Watershed Locations



Sixty-five percent of the project construction cost and one hundred percent of the technical assistance was provided by the USDA Natural Resources Conservation Service. The remaining cost of repair work was provided by the project sponsor, the county Land Conservation Department and the Wisconsin Department of Natural Resources.

| <i>Rehabilitation Project</i> | <i>Year completed</i> | <i>Construction Cost</i> |
|-----------------------------------|-----------------------|--------------------------|
| Alma Mill Creek 2, 3 and 5 | 2003 | \$260,000 |
| Bad Axe 24 | 2003 | \$415,646 |
| Plum Creek 19 | 2003 | \$93,850 |
| Glen Hills 2 | 2003 | \$133,393 |
| Plain-Honey Creek 3 | 2004 | \$1,927,000 |
| Twin Parks 10 | 2004 | \$72,500 |
| Mill Creek 10 | 2004 | \$139,000 |
| Otter Creek 9 | 2005 | \$216,500 |
| West Fork Kickapoo Pilot Klinkner | 2006 | \$1,300,000 |
| TOTAL COST | | \$4,557,889 |

Alma Mill Creek Watershed Structures 2,3 and 5

Buffalo County



Removal of sediment from Alma Mill Creek structure No. 3.



Dams in the Alma Mill Creek Watershed prevent tons of sediment from reaching Rieck's Lake, important habitat for migrating tundra swans.

Considerable sedimentation occurred behind these dams over the years, reducing the ability of the structures to provide storage for floodwater. Separation at joints in the main pipe carrying water through the structure was likely to cause failure of one of the dams if left unchecked. Rehabilitation included repair of the pipe and removal of sediment, restoring floodwater and sediment storage capacity to the dams. Removal of sediment allows more space for trapping of sediment. Sedimentation has an adverse effect on sago pondweed, a favorite food source of tundra swans.

Bad Axe Watershed Structure No. 24

Vernon County



Grout is injected through boreholes to slow water movement beneath and around the dam.

From May 31st to June 1st, 2000, the watershed received 6.75 inches of rain in 36 hours, causing a partial failure of the structure. Part of the rock in the hillside adjacent to the dam was eroded internally. To repair the rock, grout, a mixture of cement, water and clay, was injected through boreholes into voids in the rock. The grout curtain reduces water flow through rock in the dam's foundation. As a result of rehabilitation, the dam will continue to provide flood protection to cropland, infrastructure and trout habitat downstream of the dam.

Plum Creek Watershed

Structure No. 19

Pierce County



Sediment accumulated behind the dam, reducing its floodwater storage capacity. In addition, separation of the joints in the main pipe carrying water through the dam was occurring. The pipe was repaired and the sediment removed, ensuring that the dam will continue to provide flood protection and prevent gully erosion. Watershed surveys in the 1940's found no game fish in Plum Creek. Today, portions of Plum Creek are rated as a Class II trout stream, due in part to conservation practices applied in the Plum Creek Watershed.

Glen Hills Watershed

Dam No. 2

St. Croix County



A home located in the floodplain downstream of the dam was relocated out of the floodplain, reducing the risk to its inhabitants.

Home after relocation



Plain Honey Creek Watershed Dam No. 3

Iowa County



Repair of the main pipe carrying water through the dam was completed, the inlet structure was modified to allow more flexibility to balance the needs of coldwater fish downstream of the dam with warm water species in the lake. Also, sediment was removed from the lake to allow more sediment storage capacity. The swimming beach was renovated.

Twin Parks Watershed Structure No. 10

Iowa County



This dam was raised slightly to be in compliance with new federal dam safety standards. Also, the main pipe carrying water through the dam was repaired to prevent damage to the dam.

Mill Creek Watershed

Structure No. 10

Richland County



Rehabilitated plunge pool.

Two homes downstream of the dam were found to be in the breach inundation area of the dam. Through the dam rehabilitation program, these two homes were “floodproofed” which protects them from high flows should the dam fail. Also, sediment was removed from behind the dam and the plunge pool where water exits the dam was renovated. Water inlet structures of the dam (riser and drawdown pipe) were replaced.

Otter Creek Watershed

Structure No. 9

Iowa County



Flood wall installed to protect home in case of dam breach.

One home downstream of the structure was found to be in the breach inundation area of the dam. If the dam should fail, this home would be inundated with at least two feet of water. Through the dam rehabilitation program, this home was protected from flooding and the inlet to the main pipe carrying water through the dam was modified to allow more flexibility to balance the needs of coldwater fish downstream of the dam with warm water species in the lake.

West Fork Kickapoo Watershed Pilot Structure - Klinkner Dam

Vernon County



Four homes and a school were found to be in the breach inundation area of the dam, making them susceptible to flooding should the dam fail. Through the dam rehabilitation program the school and residences were protected by upgrading the dam to meet the criteria for a high hazard structure. An engineering design innovation greatly reduced the cost for this project. Concrete block mats secured to the top and downstream face of the dam eliminated the need to increase the height of the dam.

During high flows when the dam is overtopped, concrete blocks connected with cables protect the down stream face of the dam.

For additional information about these rehabilitation projects contact the USDA Natural Resources Conservation Service, 8030 Excelsior Drive, Suite 200, Madison, Wisconsin, 53717 (608) 662-4422.

Information about pilot rehabilitation projects in other states and about other issues relating to aging watershed dams is available at the NRCS national website (www.nrcs.usda.gov). Click on Programs then Watershed Rehabilitation.

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