

**Upper Deckers Creek
Watershed Dam No. 1
Rehabilitation Project
Preston County, West Virginia**



A roller compacted concrete spillway was constructed over the top of the dam during rehabilitation.

Upper Deckers Creek Dam No. 1 is located on the West Virginia University JW Ruby Research Farm in Reedsville, West Virginia. It was constructed in 1969 by the Monongahela Conservation District with the assistance of the NRCS Watershed Protection and Flood Prevention Program.

The dam provides multiple benefits to the community including flood control, improved water quality through sediment and erosion control, improved wildlife habitat and a dedicated rural raw water supply.

The dam was constructed as a significant hazard potential dam, but was later reclassified as a high hazard potential dam due to risks located downstream in the event of dam failure.

The dam was rehabilitated to maintain flood protection and to add a dedicated raw water supply volume for local communities.

Rehabilitation included installing a new principal spillway intake structure, extension of the principal spillway conduit and modification of the dam embankment to serve as an auxiliary spillway with the addition of an over-the-top roller compacted concrete (RCC) armored, stepped structural spillway.

A filtered drainage system was added, the downstream embankment slope was flattened for stability, and the existing auxiliary spillway was filled and abandoned.

**Hibernia Creek Watershed Dam
Rehabilitation Project
Chester County, Pennsylvania**



A concrete cut off wall was constructed in the spillway.

The Hibernia Dam, located on Birch Run just north of Wagontown, PA., was constructed in 1994 and provides flood control, water supply and recreation areas. The dam and reservoir are owned and operated by the Chester County Water Resources Authority (CCWRA).

The dam was constructed by the CCWRA with the assistance of the NRCS Watershed Protection and Flood Prevention Program.

Why Rehabilitate the Dam?

The dam was designed and constructed to meet the dam safety engineering standards in place at the time of construction. Since then advances in dam safety engineering have resulted in new engineering standards that are above and beyond those used for Hibernia Dam.

Rehabilitation included maintaining the axis of the dam at its present location; constructing a concrete cutoff wall at the crest of the auxiliary spillway; installing a filtered toe drain between the impact basin and the existing rock toe; and grading the mid-slope bench to improve drainage.

The project maintains the existing water supply which includes providing up to four million gallons per day of source water for public water supplies, improves the recreational and habitat values of Chambers Lake and adjacent riparian lands, and extends the dam's life and its benefits for another 50 years.

NRCS provided technical assistance and 65 percent of the cost and project sponsors provided easements and land rights for the project and 35 percent of the cost.

Watershed Rehabilitation Progress Report March 2021

The Watershed Program: Providing Multiple Benefits to Communities for 77 Years

Congress established the Watershed Program by enacting the Flood Control Act of 1944 (Public Law 78-534) and the Watershed Protection and Flood Prevention Act of 1954 (Public Law 83-566).

Under these authorizations, the USDA Natural Resources Conservation Service (NRCS) has assisted watershed project sponsors in the construction of more than 11,845 flood control dams in 1,271 watersheds in 47 States since 1948.

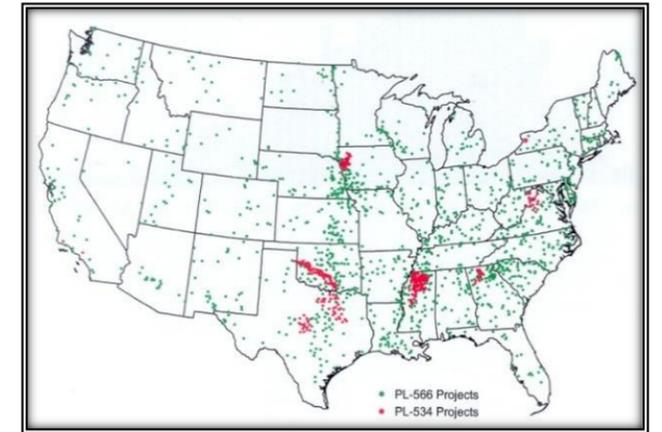
These projects provide an estimated \$2.2 billion in annual benefits in reduced flooding and erosion damages, recreation, water supplies and wildlife habitat.

Time Has Taken Its Toll on Dams

Many dams today are in a far different setting than when they were constructed. Population has increased; residential and commercial development has occurred upstream and downstream from the dams; land uses have changed; sediment pools have filled; and concrete and metal components have deteriorated.

Many dams do not meet current State dam safety standards that have more stringent requirements than when the dams were built.

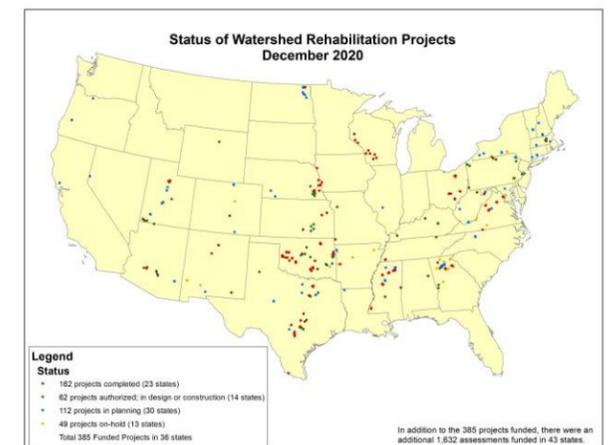
Many of these dams are also nearing the end of their planned service life of 50 years. Some of these dams need rehabilitating to ensure they remain safe, continue to function as designed and continue providing benefits. In some cases, additional new benefits such as adding water supply storage and recreation areas are a part of rehabilitation projects.



Flood control dams have been constructed in 1,271 watersheds in 47 States.

Status of Rehabilitation Projects

As of March 2021, there are 385 approved rehabilitation projects in 36 States. One hundred and sixty-two of these projects in 14 States have been completed; 62 projects in 14 States are being implemented (either in design or construction phase) and 112 projects in 30 States are in the planning stage.



Watershed Rehabilitation Amendments of 2000

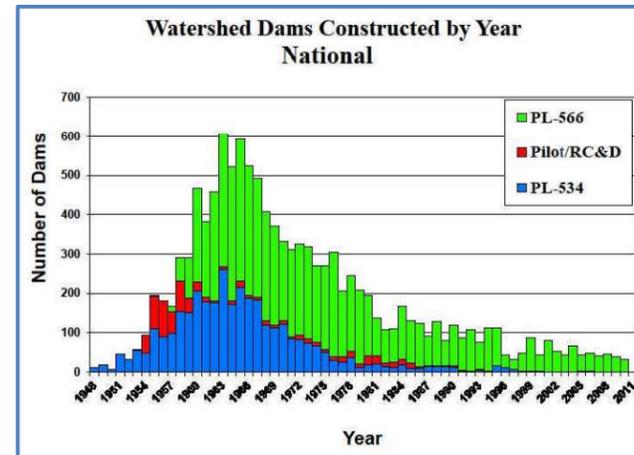
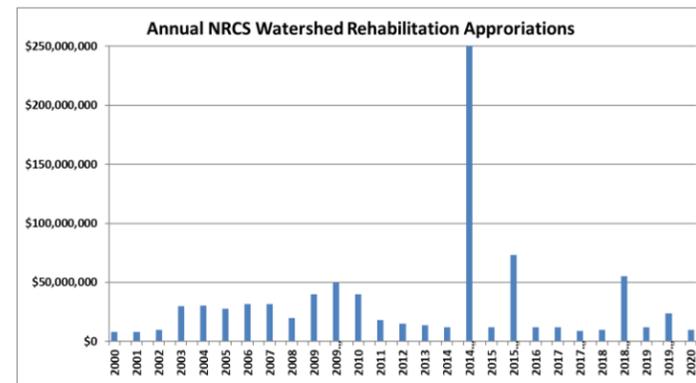
Congress passed the Watershed Rehabilitation Amendments of 2000 which amended the Watershed Protection and Flood Prevention Act (Public Law 83-566) to authorize the NRCS to provide technical and financial assistance to watershed project sponsors in rehabilitating their aging dams.

The purpose of rehabilitation is to extend the service life of the dams and bring them into compliance with applicable safety and performance standards or to decommission the dams so they no longer pose a threat to life and property.

NRCS provides technical assistance and 65 percent cost share on approved rehabilitation projects. Funding for projects comes from Congressional appropriations.

Funds for rehabilitation are authorized in the Farm Bills and are appropriated annually by Congress. Discretionary and Commodity Credit Corporation (CCC) funding has been authorized. The 2014 Farm Bill authorized \$250 million in CCC funds.

Congress appropriated \$10 million in discretionary funding for fiscal year 2020 and \$25 million in Farm Bill funding was made available for the Watershed Rehabilitation Program.



Many of the 11,845 flood control dams were built in the 1960s-70s and now are 50 to 60 plus years old. Most were designed for a 50-year service life.

Local Sources of Cost-Share Funds

Local watershed project sponsors provide 35 percent of the cost of a rehabilitation project and obtain needed land rights and permits. The source of these funds varies from state to state.

Some of the methods that states utilized to obtain funding for rehabilitation include:

- Bonds,
- County budgets
- State park division
- State appropriations
- Municipal taxing authority
- Watershed taxing authority
- In-kind technical services

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Included in this publication are examples of rehabilitation projects in four states. Fact sheets with more details on these and other rehabilitation projects are available on the National Watershed Coalition website: www.watershedcoalition.org

Upper Big Nemaha Dam No. 25-C Rehabilitation Project Gage County, Nebraska

The Upper Big Nemaha Watershed Dam No. 25-C, known locally as Doctors Lake, was constructed in 1974 by the Gage County Soil and Water Conservation District with the assistance of the NRCS Watershed Protection and Flood Prevention Program.

The Nemaha Natural Resources District now has operation and maintenance responsibilities for this dam.

The dam was rehabilitated to current safety standards for a high hazard dam.

Home construction around the lake did not allow for raising the height of the dam which is often used in rehabilitation projects.



A new concrete spillway was constructed through the center of the dam which will increase the maximum flow.

To achieve the necessary improvements to meet the current safety standards a new concrete spillway was constructed through the center of the dam which will increase the maximum flow through the dam from 6,000 cubic feet per second to over 15,000 cubic feet per second.

The normal water level in the reservoir will remain the same as in the past. Over 1,300 cubic yards of concrete was used to build the new spillway. Grading and rock riprap on the front slope of the dam were also included in the project.

Richland Creek Watershed Dam No. 2A Rehabilitation Project Rankin County, Mississippi

Richland Creek Watershed Dam No. 2A is one of three flood control dams constructed in the Richland Creek Watershed.

The dam, located two miles east of Brandon Mississippi, was constructed in 1983 with assistance of the NRCS Watershed Protection and Flood Prevention Program.

The original objective of the dam was to reduce flood damages in the upper headwaters of Richland Creek. The dam was rehabilitated to maintain that objective and upgrade it to meet current hydrologic criteria.



A new outlet channel and impact basin was constructed as part of the rehabilitation project.

A dam assessment completed in October 2012 recommended a change in the hazard class for this dam from low to high hazard based on the potential flooding of three downstream single family houses and an elementary school if the dam was to fail.

The Richland Creek Watershed and Drainage District requested rehabilitation assistance from NRCS and rehabilitation construction was completed in August 2020. The top of the dam was raised four feet, the auxiliary spillway was widened by 100 feet, a new outlet channel and impact basin were constructed and a chimney drain was added to the dam.