

Barnitz Creek Watershed Dam No. 11 Rehabilitation Project Dewey County, Oklahoma

Fact Sheet
February 2016

History of the Dam:

Barnitz Creek Watershed Dam No. 11 is located nine miles southwest of Putnam, Oklahoma in Dewey County. The Dewey County Conservation District constructed the dam in 1953 by with the assistance of the Oklahoma Conservation Commission and the USDA Natural Resources Conservation Service (NRCS). The dam provides flood control for agricultural lands and protects State Highway 47 and a county road.



A boring and jacking operation was utilized to install a new principal spillway conduit during rehabilitation of the dam.

The dam is one of 76 dams in the Barnitz Creek Watershed Project (Dewey and Custer Counties). These dams provide over \$716,340 in average annual benefits providing flood protection for 225 farms and ranches and 25 bridges/roadways.

The Barnitz Creek Watershed Project Plan was developed in 1952 and encompassed 178,654 acres of mostly agricultural lands. The 3,614 acre flood plain in the watershed flooded an average of five times annually between 1923 and 1942. These floods destroyed crops, killed livestock, and eroded the land. Local landowners joined with local conservation districts from Dewey and Custer Counties to develop the watershed project with assistance from the Soil Conservation Service (now the NRCS). Assistance was provided by SCS through the USDA Flood Control Act (PL-76-534).

Why Rehabilitate the Dam?

The dam was originally designed as a low hazard dam with a 50-year design life. It was reclassified as a high hazard dam in 2005 because it did not meet current dam state safety criteria. The dam's age and its current high hazard safety criteria triggered its rehabilitation in 2015.

Rehabilitation Details:

The principal spillway pipe was replaced with a 30-inch diameter reinforced concrete conduit with a new concrete inlet structure. A riprap plunge basin was installed to dissipate energy at the outlet of the conduit. The existing elevation of the principal spillway crest was maintained resulting in no change in the surface area of the permanent pool. The top of dam was raised 3.8 feet. The auxiliary spillway was expanded from 100 feet wide to 125 feet. The auxiliary spillway crest elevation was raised 2.5 feet resulting in a five-acre increase in the flood pool area.

Project Cost:

The NRCS provided technical assistance and 65 percent of the project cost. Local project sponsors provided 35 percent of the cost through State appropriations to the Oklahoma Conservation Commission Watershed Rehabilitation Program. Rehabilitation of the dam cost \$4.7 million.

Benefits:

Rehabilitation of the dam extends the life of the dam for another 100 years. It is estimated that the dam will reduce flood damages by an average of \$62,200 annually, protecting agricultural lands and Highway 47 and a county road.

Partners:

- Dewey County Conservation District
- Oklahoma Conservation Commission
- Natural Resources Conservation Service

For More Information Contact:

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