

Keeping Dams Safe

Protecting People, Property and Natural Resources

Sergeant Major Creek Watershed A Pilot Rehabilitation Project

Two flood control dams in the Sergeant Major Creek Watershed were rehabilitated and upgraded to meet current safety standards as the nation's first pilot rehabilitation project. The project located in Roger Mills County, Oklahoma, was completed in the Fall of 2000.

The pilot project resulted from growing concerns about the condition of aging watershed dams across the nation and the need to find alternative solutions to deal with problems such as deteriorating concrete and metal components of the principal spillways, and siltation.

Situation:

Both Dam 1 and 2 were determined to be unsafe. They had deteriorated metal and concrete components in the principal spillways. The principal spillway pipe in Dam No. 2 had cracks and water was coming into the pipe from the center of the dam. Both structures had collected a considerable amount of silt resulting in lost flood storage.

Why Action Was Needed:

The watershed project is a vital part of the community and surrounding rural area. The dams provide flood protection for the town of Cheyenne, a state highway, rural roads and agricultural lands.



The dams provide flood protection for the town of Cheyenne and agricultural lands, and they have allowed the streambanks to stabilize reducing erosion.

Watershed Project Sponsor:
Upper Washita Conservation District.

Oklahoma



Action:

Similar work was done on both dams.

- ◆ The old principal spillway pipes were plugged for abandonment and new pipes and concrete towers were installed.
- ◆ Foundation drains were installed in the back of the dams to stabilize the embankment.
- ◆ The earthen spillways were enlarged.
- ◆ The height of Dam No. 2 was increased to provide additional downstream protection and safety to protect a state highway.
- ◆ Rehabilitation extended the life expectancy of the dams for another 100 years.
- ◆ Rehabilitation Costs: \$325,998 for Dam No. 1 and \$431,822 for Dam No. 2.
- ◆ Funding: The USDA Natural Resources Conservation Service provided funding through authorization in the 1998 USDA Appropriations Act. The watershed project sponsor provided necessary easements and landrights.



Sergeant Major Dam No. 2 before rehabilitation.



Sergeant Major Dam No. 2 after rehabilitation.

Keeping Dams Safe

The Sergeant Major Creek Watershed is located in Roger Mills County in western Oklahoma. The dams in the watershed project protect the Town of Cheyenne (population 950), agricultural land and the Washita Battlefield National Historic Site.

Sergeant Major Creek drains into the Washita River just north of Cheyenne. The Washita River Upstream Flood Control Program was one of the original 11 pilot flood control watershed projects established by Congress in 1944.

The project consists of six flood control dams built under Public Law 78-534 (Flood Control Act of 1944). Dams 1 and 2 were built in 1948 and 1949. The other four dams were constructed between 1949 and 1963. Site 4 is the sole water supply for the town of Cheyenne.

Locally-Led Process

The Upper Washita Conservation District, watershed project sponsor, provided the leadership in conducting a new resource assessment and identifying priority resource and community needs in the watershed. The district organized a work group of landowners, city representatives, and other citizens to assist with this process.

Goals and objectives were established for the watershed which included the rehabilitation of Dams No. 1 and 2; improving rangeland and wildlife conditions in the watershed; rehabilitating older conservation practices; protecting the quality of the city water supply, which comes from Dam No. 4; and the installation of a dry fire hydrant for rural fire protection.

A supplement to the original work plan was prepared and an environmental assessment was conducted as part of the planning process. Several alternatives were considered for Dams 1 and 2, including their removal. New landrights were obtained and new operation and maintenance agreements were signed.

For additional information about this rehabilitation project contact the USDA Natural Resources Conservation Service office, 100 USDA, Suite 206, Stillwater, Oklahoma 74074, (405) 742-1204.

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). Click on Aging Watersheds.



Dedication ceremonies were held at Sergeant Major Creek Watershed Dam No. 2 on April 14, 2000, to celebrate the nation's first pilot rehabilitation project.

National Rehabilitation Needs

- ◆ Since 1948 over 11,000 small flood control dams have been built in 2,000 watersheds in 47 states. The first small flood control dam built in the nation was in Washita County, Oklahoma in 1948.
- ◆ Many of these earlier constructed dams were designed for a 50-year life expectancy. Over one-half of the dams are already 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 assistance and funds in 2001 to rehabilitate over 1,400 dams.

Oklahoma's Rehabilitation Needs

- ◆ Oklahoma has 2,097 small flood control dams.
- ◆ Over 1,700 of these dams, in 81 watershed projects, were designed for a 50-year life span.
- ◆ More than one-half of the dams are over 35 years old.
- ◆ 100 dams will reach the end of their life span in the next five years, with many needing rehabilitation.

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