

Small Watershed Rehabilitation



**Reconstruction
of Sergeant
Major Creek
Sites 1 and 2,
Washita
County,
Oklahoma**



photos: NRCS Oklahoma

Small Watershed Rehabilitation

Local watershed project sponsors, assisted by the USDA Natural Resources Conservation Service (NRCS), have constructed 2,098 upstream flood control dams in Oklahoma since 1948. Fifty-nine of these dams have exceeded their 50-year design life. By 2005, a total of 132 dams will have reached or exceeded their design life, and by 2010 that number climbs to 463 dams. By 2015, 1,090 dams, or more than half of all dams constructed in Oklahoma, will have reached or exceeded their design life. In April 1999, a rapid survey of rehabilitation needs of watershed dams in Oklahoma indicated that 190 dams were in need of rehabilitation at an estimated cost of \$52.7 million.

In August 1998, the Sergeant Major Creek Watershed was selected as a national pilot rehabilitation project. Two of the six dams in the watershed were rehabilitated with a design life of 100 years. Rehabilitation planning was completed in March 1999. Design for Site 2 was completed in April 1999, and construction was completed in April 2000 at a total cost of \$418,263. Design for Site 1 was completed in October 1999, and construction was completed in September 2000 at a total cost of \$317,410.

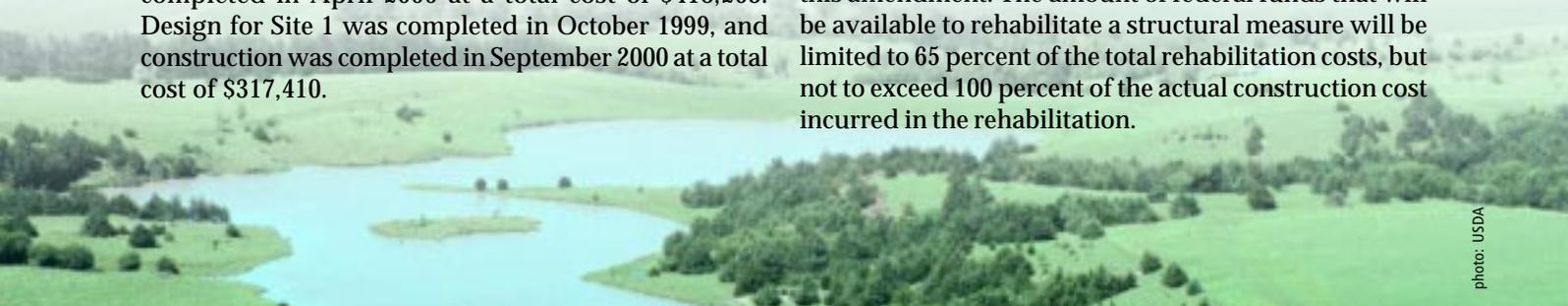
New Legislation

An amendment to the Watershed Protection and Flood Prevention Act of 1954, Public Law 83-566, was approved by the House of Representatives on April 4, 2000, and by the Senate on October 24, 2000. The amendment, also known as the "Small Watershed Rehabilitation Amendments of 2000", allows for the rehabilitation of a structural measure that impounds water, commonly known as a dam, which was constructed as part of a covered water resource project under PL-534, Pilot or RC&D Programs, and PL-566. President Clinton signed the amendment into law (PL-106-472) on November 9, 2000.

Rehabilitation Of Aging Flood Control Dams

The Small Watershed Rehabilitation Amendments of 2000 provides for the rehabilitation of structural measures near, at, or past their evaluated life expectancy.

All water resource projects implemented under PL-534, Pilot or RC&D Programs, or PL-566 are covered under this amendment. The amount of federal funds that will be available to rehabilitate a structural measure will be limited to 65 percent of the total rehabilitation costs, but not to exceed 100 percent of the actual construction cost incurred in the rehabilitation.



Rehabilitation may include:

- ☒ Protecting the integrity of the structural measure or prolonging the useful life of the structural measure beyond the original evaluated life expectancy
- ☒ Correcting damage to the structural measure from a catastrophic event
- ☒ Correcting the deterioration of structural components that are deteriorating at an abnormal rate
- ☒ Upgrading the structural measure to meet changed land use conditions in the watershed served by the structural measure or changed safety criteria applicable to the structural measure
- ☒ Decommissioning the structure

Sergeant Major Creek Watershed

In July 1998, a celebration was held in Cordell, Oklahoma, to mark the 50th anniversary of the nation’s first upstream flood control dam, Cloud Creek Site 1, in Washita County, Oklahoma. This celebration raised national attention the fact that many flood control dams in Oklahoma and across the nation would soon reach the end of their 50-year designed life and many would require rehabilitation.

The Chief of NRCS selected Oklahoma to establish a national pilot project on rehabilitation of aging flood control dams. The Sergeant Major Creek Watershed was selected for this pilot project in August 1998. Oklahoma was allocated \$750,000 to rehabilitate two of the six dams in the watershed. This pilot project identified barriers to planning and design, methods of rehabilitating older dams, opportunities to address other resource needs, and paved the way for a four-state rehabilitation pilot program.

April 2000, the reconstruction of Sergeant Major Creek Site 2 was completed and a dedication was held in the Town of Cheyenne, Oklahoma. In September 2000, the reconstruction of Site 1 was completed. Rehabilitation designs for both dams met all current NRCS and Oklahoma State Dam Safety criteria. The designs called for installing new principal spillways consisting of reinforced concrete conduit pipe with standard inlet towers and impact basins. The principal spillway elevations were raised to provide sediment storage for the next 100 years. The embankments were raised to provide adequate detention storage to meet current hydrologic and hydraulic criteria, and the emergency spillways were redesigned to meet hydraulic capacity requirements. Foundation drains were installed at the downstream toes of the existing embankments. Site 2 was upgraded to class “C” high hazard criteria because of a highway and homes located downstream of the dam, and additional storage

was added for the purpose of providing water for rural fire protection (sponsor’s cost).

In addition, six grade stabilization structures and seventeen level block diversions were planned above the structures to reduce sediment coming into the sediment pools of the structures.

Rehabilitation Accomplishments

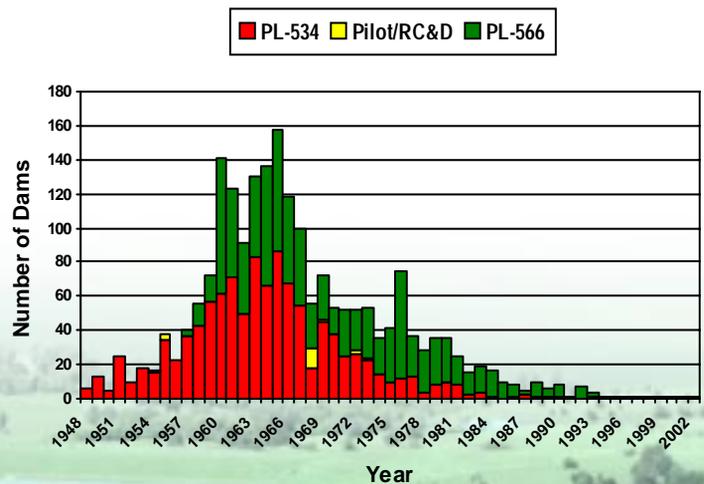
A Supplemental Watershed Plan - Environmental Assessment (EA) for rehabilitation has been completed in the Sandstone Creek Watershed in Roger Mills County. The world’s first completed upstream flood control project was also the first rehabilitation project to be funded under PL-106-472. The reconstruction of dams 12 and 17A will begin in 2003.

A Rehabilitation Watershed Plan - Environmental Impact Statement (EIS) has been completed and approved for funding for the six flood control dams in the Double Creek Watershed, Washington County, Oklahoma. The alternative selected calls for upgrading the dams to class “C” high hazard criteria to protect homes, businesses, and schools downstream. Construction on sites 1 and 4 will begin in 2003.

Current Rehabilitation Planning

Oklahoma Natural Resources Conservation Service is currently planning a rehabilitation project on Cavalry Creek Watershed Site 6 in Washita County. Oklahoma anticipates awarding the agency’s first Indefinite Quantities Contract for rehabilitation planning in early 2003, which may cover several unspecified planning projects. Three Architect & Engineering (A&E) contracts for site specific rehabilitation projects will also be developed for planning and design of dams in the Sallisaw Creek, Cobb Creek, and Caney Coon Creek Watersheds in 2003.

Oklahoma Dams



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