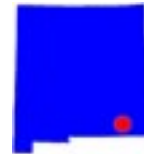


# Keeping Dams Safe

## Protecting People, Property and Natural Resources

### Hackberry Draw Watershed A Pilot Rehabilitation Project

### New Mexico



**T**he Hackberry Draw Watershed Project Dams Number 1 and 2 are two of four flood control dams in New Mexico to be included in national pilot rehabilitation projects. These dams will be rehabilitated to ensure they remain safe and continue to protect people, property and natural resources in the watershed.

Experience and information gained from these pilot projects will be valuable as other dams across the nation are rehabilitated.

#### **Situation:**

The dams are safe and in good working condition, however land use changes have occurred downstream, including increased urban development. The dams built in the 1960's do not meet current safety standards.



Hackberry Dam No. 2. View from auxiliary spillway showing protected area and homes downstream.

#### **Why Action is Needed:**

Dams need to be brought up to current safety standards to protect lives and property downstream. These two dams provide flood protection for over 2,000 people, roads, and other structures.

#### **Local Watershed Project Sponsors:**

Carlsbad Soil and Water Conservation District  
and Hackberry Watershed District.

#### **Rehabilitation Planning Process:**

Local watershed sponsors and the USDA Natural Resources Conservation Service have completed surveys of the dams and their downstream channel. They have developed a flood plain map for 100-year and breach inundation storms.

Several alternatives were considered including taking no action, removal of the dams and relocation of homes. Rehabilitation of the dams was the least expensive and determined by the sponsors to be the best alternative.

#### **Action:**

Dams 1 and 2 will be upgraded. NRCS is preparing a design for upgrading the dams that will meet current state and federal safety standards and will extend the life of the dams for another 100 years. Two options are being considered.

Option one would raise the top of Dam No. 1 by 5 feet, Dam No. 2 by 3 feet and the top of Floodwater Diversion 1 by 1.5 feet; replace the concrete inlet towers; line the principal spillway pipes; and stabilize the roadway of Highway 24 to allow it to serve as an auxiliary spillway for Dam No. 1.

Option two would include hardening the auxiliary spillways and downstream face of Dams 1 and 2 with soil cement and raising the top of Floodwater Diversion 1 by 5 feet.

- ◆ Rehabilitation Project Estimated Cost: \$1,540,000
- ◆ Funding: Sixty-five percent of the project construction cost and technical assistance will be provided by the USDA Natural Resources Conservation Service through the 2000 Agricultural Appropriation Act. This Act authorized and funded pilot rehabilitation projects in Wisconsin, New Mexico, Ohio and Mississippi. Local sponsors are responsible for 35 percent of the costs, and the landrights and easements.

## Keeping Dams Safe

### Hackberry Draw Watershed:

- ◆ Size: 13,760 acres
- ◆ Number of dams: 2
- ◆ Primary Project Purpose: Reduce flooding and trap sediment.
- ◆ Provides \$28,700 in annual agricultural benefits and \$27,000 in nonagricultural benefits

### The Watershed Project Protects:

- ◆ 2,350 individuals
- ◆ 1,250 homes and businesses
- ◆ 2 public facilities,
- ◆ 75 miles of roads
- ◆ 5 bridges or culverts
- ◆ 40 farms.

The dams also reduces sediment deposition by over 2,260 tons per year.

### History of the Watershed:

The dams were built through the Watershed Protection and Flood Control Act of 1953 (PL 83-566) by the USDA Natural Resources Conservation Service, assisting the Carlsbad Soil and Water Conservation District. The Hackberry Watershed District was formed by referendum to assist with the project. The district assumed operation and maintenance for the dams after construction.

### National Rehabilitation Needs

Since 1948 over 11,000 small flood control dams have been built in 2,000 watersheds in 47 states.



Location of dams over 30 years old.

Many of these earlier constructed dams were designed for a 50-year life expectancy. Over one-half of the dams are 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 receiving USDA funds and assistance in 2001 to rehabilitate over 1,400 dams.

### New Mexico Rehabilitation Needs

New Mexico has 32 small watershed projects with 71 flood control dams and 41 miles of diversions that were constructed since 1957.

- ◆ Twenty dams will reach or surpass their design life by 2010 and many will need rehabilitation to extend their life and benefits.
- ◆ Eight dams currently need attention to address structural deterioration, excess sediment accumulation and other problems.
- ◆ Nine dams need to be upgraded to meet current state dam safety laws. There has been significant downstream development and improvements since construction of these dams.
- ◆ At stake is the protection of 40,000 people, property, agricultural production and water quality.
- ◆ The dams provide \$9 million in annual benefits.

For additional information about this rehabilitation project contact the USDA Natural Resources Conservation Service office, 6200 Jefferson St. NE, Albuquerque, New Mexico 87109-3734. Phone: (505) 761-4430.

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](http://www.nrcs.usda.gov)). Click on Aging Watersheds.

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