



# Providing protection

## Agencies receive funding to repair, upgrade dams

Scattered across Texas are almost 2,000 nondescript, earthen dams built on private land to protect property, roads, and bridges from flood damages. Some of these dams, called floodwater retarding structures and built mostly in rural areas during the 1950s to 1970s, are aging and need repairing. Others now protect urban areas that have developed downstream and need upgrading to meet more stringent safety standards.

With recent funding from Congress and the Texas Legislature, the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), and the Texas State Soil and Water Conservation Board (TSSWCB) can repair or upgrade some of these dams.

Through the American Recovery and Reinvestment Act of 2009, the Texas office of NRCS received about \$20 million to repair 20 dams, said Steven Bednarz, the agency's assistant state conservationist for water resources for Texas. The office also received \$4.8 million to "rehabilitate" or redesign and upgrade two existing dams—Calaveras Creek Dam No. 6 in Bexar County and Plum Creek Dam No. 5 in Hays County.

In addition to these federal funds, the Texas Legislature recently appropriated \$15 million to TSSWCB for the operation, maintenance, and structural repairs of these dams. The funds will be used as grants to local soil and water conservation districts, said John Foster, TSSWCB statewide programs manager. The state board is setting up two grant programs—one for operation and maintenance, the other for repairs—through which the districts,

along with local partners, can apply for grant funds, he said.

Construction of the dams began through four federal authorizations passed between 1944 and 1981. Land rights were acquired from landowners, and local agencies constructed the dams with federal money from NRCS (formerly the Soil Conservation Service). Local sponsors—including cities, counties, local soil and water conservation districts, water control and improvement districts, and other organizations—were responsible for needed operation and maintenance as well as repairs and enhancements, Foster said.

When built, the dams were given low, significant, or high hazard ratings, depending on the potential damage or loss of life should failure occur, said Richard Egg, TSSWCB statewide programs engineer. Most were built as low hazard dams in rural areas.

"Many dams originally constructed as low hazard are now being reclassified as high hazard because of population growth and urban development downstream," Egg said.

With the change in classification, the dams need rehabilitation to meet more stringent design criteria to prevent potential failure during major storms, he said.

During 2008, NRCS surveyed the conditions of the nearly 2,000 watershed structures. Bednarz said the survey found that about 120 dams need repair at an estimated cost of \$53 million, with maintenance needs for all dams totaling about \$11 million. Of the 343 dams currently classified as high hazard,

about 240 need to be rehabilitated to meet the high hazard design criteria at an estimated cost of \$350 million.

Although the dams were built to protect agricultural lands and property, rural roads, and small towns from flood damage, said agency officials, through the years they have provided other benefits.

The dams protect urban homes and businesses, preserve the storage capacity of downstream water supply reservoirs by reducing sediment flow, and improve water quality by keeping nutrients from entering streams, Bednarz said.

In addition, 5,800 bridges are protected, as are numerous county, state, and federal highways throughout the state.

“(The dams) provide \$4.1 billion in capital-

ized benefits and more than \$118 million in average annual benefits,” Bednarz said.


Egg said the Texas Department of Transportation considers these structures and their protective benefits when it designs roads and bridges, and therefore can construct a less costly design.

Without these dams, stormwater infrastructures of cities downstream would also have to be built to a higher standard to handle increased flood waters, Foster said.

“A lot is riding on these structures being maintained and doing their job,” he said.

## State Water Legislation

For more information about water bills passed by the 81st Texas Legislature, visit the Texas Water Conservation Association’s Legislative News Web page at <http://www.twca.org/1n.html> or read in “The Cross Section,” a monthly publication of the High Plains Underground Water Conservation District No. 1 at <http://www.hpwd.com/CrossSection/06-2009%20Cross%20Section.pdf>.

For additional information, visit the Texas NRCS Watershed Web site at: <http://www.tx.nrcs.usda.gov/programs/watersheds/index.html>. 

The earthen dam or floodwater retarding structure is one of 20 that is being repaired using American Recovery and Reinvestment Act (ARRA) funds.