



# Renewing Texas Infrastructure

## 2012 Texas Infrastructure Report Card

### Texas Section – American Society of Civil Engineers



## Dam Fact Sheet

### Key Infrastructure Facts: Existing Condition and Performance

- 82 dams have failed in Texas in the last twenty years (an average of four a year). In 2010, four dams failed and 19 dams were overtopped but not breached. In 2011, one dam had a slope failure which resulted in the lake being drained. In the first three months of 2012, one dam failed and one dam was overtopped but did not fail.
- There are 7,126 nonfederal dams listed in the Inventory of Dams in Texas.
- There are 1,046 high hazard dams (probable loss of life if dam fails), 725 significant hazard dams (possible loss of life), and 5,355 low hazard dams (no loss of life expected).
- Over 75% of the high hazard dams were built before 1975.
- A high percentage of the high hazard dams do not have a maintenance and inspection program.
- About 90 percent of the high hazard dams have uncontrolled spillways (i.e. no gates to regulate flow from the dam).
- According to the Natural Resources Conservation Service (NRCS), of the 2042 dams built in Texas since 1948 under the Small Watershed Programs:
  - 972 will exceed their life expectancy (50 years) by 2015, and 204 currently need repair due to ageing at a cost of \$48 million.
  - 259 high hazard dams need to be rehabilitated to meet current safety criteria at an estimated cost of \$380 million.

### Anticipated Growth and Other Future Needs

- Most owners have limited funds and cannot afford large rehabilitation costs.
- New, large dams are not being built at this time. Construction projects are primarily subdivision dams.
- Many developers are purchasing property with small livestock dams and developing property around the lakes and downstream of the dams, creating additional risk.
- The State of Texas does not regulate development in high hazard areas immediately adjacent to or downstream of dams.
- As the dams continue to age, maintenance and inspection programs will become even more critical.
- Continued growth to rural areas is resulting in changes to hazard classification for dams. This will result in changes in requirements for the dams, possibly causing the need for rehabilitation of the structures.
- Many dam owners and operators do not receive training on their responsibilities for dam safety. Over the last two years, the Dam Safety Program has conducted 8 workshops for owners with 671 people registered.

# Adequacy of Current Funding and Need for Expanded Funding

- In 2003, the Association of State Dam Safety Officials estimated the rehabilitation cost for Texas' non-federal high-hazard dams at \$711 million.
- Funding for the rehabilitation or repair of hazardous dams must be obtained by the owner. The State does not fund these projects.
- The state budget for the Dam Safety Program administered by TCEQ for fiscal year 2012 is \$2,076,633.77. An additional \$555,174.84 in grant funding was received from FEMA. No federal or state funds have been allocated for repair/rehabilitation of dams in 2012.
- The Dam Safety Program in Texas is funded for 27 staff persons. In 2011, the staff members completed the following tasks:
  - Reviewed 33 structural plans and change orders
  - Inspected 535 dams
  - Reviewed 426 Emergency Action Plans
  - Reviewed other reports submitted by dam owners or their consultants
- The Audit Report finds that although improvements have been made since 2003, the current rate of inspection is well below the best practices standard, which recommends that high hazard dams be inspected annually and significant high hazard dams be inspected once every two years. At the rate of inspections achieved in 2007, an additional 1,098 inspections would need to be completed to achieve this target.
- Funding for the Dam Safety Program must be increased in order to perform inspections and identify hazardous conditions as quickly as possible.

## Sources

- *An Audit Report on the Dam Safety Program at the Commission on Environmental Quality*, May 2008, State Auditor's Office, Report No. 08-032.
- *National Inventory of Dams*, U.S. Army Corps of Engineers
- *Watershed Program Facts and Figures for Texas*; March 2012, Natural Resources Conservation Service.
- Association of State Dam Safety Officials, [www.damsafety.org](http://www.damsafety.org).
- Interviews and data from the Dam Safety Program, Texas Commission on Environmental Quality, March 2012 ([www.tceq.state.tx.us](http://www.tceq.state.tx.us))