



Association of State Dam Safety Officials  
450 Old Vine Street, 2nd Floor  
Lexington, Kentucky 40507  
Phone: (859) 257-5140  
Fax: (859) 323-1958  
[www.damsafety.org](http://www.damsafety.org)

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**Testimony of the  
ASSOCIATION OF STATE DAM SAFETY OFFICIALS  
To the Subcommittee on Homeland Security  
Committee on Appropriations  
U.S. House of Representatives  
On Appropriations for the  
Federal Emergency Management Agency  
For the Fiscal Year 2011**

The Association of State Dam Safety Officials (ASDSO) is pleased to offer testimony on the President's proposed FY 2011 budget for the Department of Homeland Security.

**ASDSO respectfully requests that the Subcommittee fully fund the National Dam Safety Program at \$11 million in FY 2011. ASDSO further requests that there be a line item in the DHS budget that clearly identifies the funds be used to carry out mandates authorized in the National Dam Safety and Security Act of 2006.**

The Association of State Dam Safety Officials is a national organization of more than 2,200 state, federal and local dam safety professionals and private sector individuals dedicated to improving dam safety through research, education and technology transfer. ASDSO represents the 50 state dam safety programs, as the state dam safety officials are the governing body of the Association. Our goal is simply to save lives, prevent property damage and to maintain the many benefits of dams by preventing dam failures.

During the 1970s this country suffered devastating dam failures that caused tragic loss of life and enormous property damage; and focused national attention on the catastrophic consequences of dam failures. Those historic failures and recent dam failures serve as a constant reminder that dams must always be properly constructed, properly designed and properly operated and maintained to provide vital benefits and prevent failures.

Today our focus is not only on the safety of dams related to maintenance issues, led by FEMA's national dam safety program, but on security as the nation faces a significant challenge to protect our infrastructure from terrorist attacks. Protection of U.S. dams is a major concern and focus of national strategic planning efforts within the Department of Homeland Security, led by the Infrastructure Protection Office, Dam Sector.

**National Dam Safety Program**

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The National Dam Safety Program Act of 1996 (PL 104-303) created the first national program that focused on improving the safety of the nation's dams. Congress reauthorized the program through the National Dam Safety and Security Act of 2006 (PL 109-460) and made modest increases in the authorized funds. This small yet critical program provides much needed assistance to the state dam safety programs in the form of grant assistance, training and research; and through facilitating the exchange of technical information between federal dam safety partners and the states. The program provides \$38.7 million over five years in grant assistance to states based on the relative number of dams in each state. The grants may be utilized to best suit the individual state's needs. In addition, the National Dam Safety Program provides \$3.25 million over five years to be used for training of state dam safety engineers and \$9 million over five years for research. These research funds are used to identify more effective methods of evaluating the safety of dams and more efficient techniques to repair dams.

There are over 84,000 dams in the United States, but the responsibility of assuring their safety falls largely on the shoulders of the states, as they regulate 89% of the country's dams. Because of limited staff and funding, most states are overwhelmed by that challenge. Currently states have identified over 4,000 dams as being deficient, or unsafe, and the number is expected to increase as dams age and downstream development continues. Unsafe means that they have identified deficiencies that make the dam more susceptible to failure, which may be triggered by a large storm event, an earthquake or simply through inadequate maintenance or outdated protection standards.

There are over 13,000 (2009 data) dams classified as high hazard potential meaning that the consequences of the dam's failure will likely include loss of human life and significant downstream property damage. According to the National Inventory of Dams, approximately 30% of the high hazard potential dams have not been inspected in the last five years. High hazard potential dams should be inspected every year.

ASCE's 2009 Report Card for America's Infrastructure gave Dams in the United States a grade of "D." By the year 2020, more than 85 percent of all dams in the United States will be more than 50 years old, the typical useful lifespan.

Downstream development within the dam failure flood zone places more people at risk. When homes are built in the dam failure flood zone below a low hazard dam, (low hazard: failure is not expected to cause loss of life or significant property damage) the dam no longer meets dam safety criteria as the potential consequences of a failure now include loss of life.

### **Federal Leadership Role**

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There is a clear need for continued federal leadership to provide assistance in support of dam safety. This country suffered several large and tragic dam failures in the 1970s that focused attention on dams and prompted Congress to pass national dam safety legislation. In 1972, the Buffalo Creek Dam in West Virginia failed and killed 125 individuals; in 1976 the Teton Dam failure in Idaho caused \$1 billion in damages and 14 deaths; the Kelly Barnes Dam in Toccoa Falls, Georgia failed in 1977 killing 39 Bible college students; also in 1977 40 people died from

the failure of the Laurel Run Dam in Pennsylvania; and in 1996 the 38 foot tall Meadow Pond Dam in Alton, New Hampshire failed killing one woman and causing \$8 million in damage.

However, the failure of the Silver Lake Dam in Michigan in May 2003 again demonstrated the enormous potential damages that dam failures can produce. This dam failure caused more than \$100 million in damages including \$10 million in damages to utilities, \$4 million to the environment, \$3 million to roads and bridges and flooded 20 homes and businesses. In addition, the Silver Lake Dam failure flooded a major power plant, which in turn caused the closure of two iron mines, putting 1,100 miners temporarily out of work.

In March 2006, the Kaloko Reservoir dam burst in Hawaii on the island of Kaua’I releasing more than 300 million gallons of water killing seven people and washing was a number of farm buildings and houses.

In March 2004, the Big Bay Lake Dam in Mississippi failed destroying 48 homes, damaging 53 homes, 2 churches, three businesses and a fire station and washing out a bridge. This dam, which cost \$2.5 million to construct, has caused many millions in damages, will require downstream homeowners and businesses to rebuild, caused significant loss of property values around the lake and has resulted in \$100 million lawsuit filed against the dam owner on behalf of the homeowners.

Dam failures do not respect state boundaries, as a dam failure in one state may cause loss of life and property damage in an adjacent state. Including recovery costs from the President’s disaster relief fund and the Flood Insurance Program, the cost of one small dam failure can easily exceed the annual costs of the National Dam Safety Program. Full funding of the National Dam Safety Program is an investment in public safety that will be repaid many times over in fewer dam failures, reduced federal expenditures for dam failure recovery and, most importantly, fewer lives lost.

### **Benefits of the National Dam Safety Program**

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The National Dam Safety Program has been very successful in assisting the state programs. The training program is one aspect of this success. This training provides access to technical courses and workshops that state engineers could not otherwise attend. Examples include Dambreak Analysis, Concrete Rehabilitation of Dams, Slope Stability of Dams, Earthquake Analysis, Emergency Action Planning and many others including recent training in Dam Site Security. Training courses are also offered through FEMA’s training facility at their Emergency Management Institute in Maryland where state dam safety inspectors receive training at no cost to the states.

The Research Program is an important program to all within the dam safety community. Its funds have been used to identify future research needs such as inspections using ground penetrating radar or risk analysis. In addition, these funds have been used to create a national library and database of dam failures and dam statistics as well as a national clearinghouse and library of dam safety bibliographic data at ASDSO.

The most valuable benefit to the state programs comes from the State Grant Assistance Program. The grants are based on the number of dams in each of the participating states and are used as an incentive to encourage states to improve their program by meeting basic criteria such as:

- State statutory authority to conduct inspections of dams;
- State authority to require repairs to unsafe dams; or
- State policies that address dam site security at non-federal dams.

Use of these grants should be left up to the state's discretion as each state has its own unique challenges. States have utilized grant funds to perform dam failure and dam stability analyses, to hire additional staff to conduct inspections and to conduct owner education workshops. In addition, grant funds have enabled states to provide additional staff training, and to purchase equipment such as computers, field survey equipment and software, and remote operated cameras for internal inspections.

It is encouraging to see that appropriations last two years fully funded the National Dam Safety Program for the first time and we urge Congress to once again appropriate full funding for the program.

### **Conclusion**

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Dams are a vital part of our aging national infrastructure that provide many vital benefits, but that also pose a threat to life and property if they fail. The National Dam Safety Program is a valuable program that offers assistance to states as an investment in public safety. One dam failure alone, as evidenced by the Silver Lake Dam failure in 2003, can easily exceed the \$8.6 million authorized for this program. The National Dam Safety Program, administered by FEMA, is a modest and prudent investment protecting public safety.

**ASDSO respectfully requests that the Subcommittee fully fund the National Dam Safety Program at \$11 million in FY 2011. ASDSO further requests that there be a line item in the DHS budget that clearly identifies the funds be used to carry out mandates authorized in the National Dam Safety and Security Act of 2006.**

ASDSO looks forward to working with the Subcommittee staff to improve the safety of dams.

Association of State Dam Safety Officials  
State-By-State Statistics on Dams and State Safety Regulation – Dec 2009

State	# of Identified NID-Size Dams	# of NID-sized HH potential dams	# of NID-sized state regulated dams	# of NID-sized State-Regulated HH potential dams	# of dams (any size) regulated by the state	State Dam Safety Budget	Staff Dedicated to Dam Safety Regulation	
							Total FTEs	Dams per FTE
Alabama	2,218	191	0	NA	NA	NA	NA	NA
Alaska	100	25	77	18	82	108,000	1	82
Arizona	328	113	256	93	248	718,716	7.3	34
Arkansas	1,208	162	1146	144	406	323,000	3.4	119
California	1,494	461	1255	340	1,247	9,518,000	59	21
Colorado	1,806	362	1635	312	1,935	1,695,200	14	138
Connecticut	723	229	702	218	1,187	525,000	5	237
Delaware	61	9	37	9	37	1,070,000	0.75	49
Florida	853	110	790	70	874	18,200,000	77	11
Georgia	4,814	451	4480	405	3,881	727,009	9	431
Hawaii	132	75	131	74	138	380,250	4.5	31
Idaho	407	108	342	76	569	296,321	7.5	76
Illinois	1,462	192	1391	185	1,485	266,000	4.5	330
Indiana	1,047	271	927	254	1,088	425,000	5	218
Iowa	3,340	84	3278	78	3,325	20,000	1.25	2,660
Kansas	5,707	187	5673	160	6,052	616,847	10.08	600
Kentucky	1,057	276	947	252	1,066	1,550,420	5	213
Louisiana	554	18	530	16	540	383,500	6	90
Maine	337	57	158	19	831	36,914	1.5	554
Maryland	319	67	312	66	382	557,194	5.75	66
Massachusetts	1,624	324	1536	296	1,630	1,034,000	7.5	217
Michigan	985	157	834	135	1,034	295,000	3.1	334
Minnesota	1,030	44	915	34	1,128	365,000	4.4	256
Mississippi	3,433	306	3411	294	3,717	269,590	3.8	978
Missouri	5,206	657	666	245	664	261,779	5	133
Montana	3,256	203	2607	102	2,884	414,191	4.2	687
Nebraska	2,284	129	2255	116	2,308	328,730	6	385
Nevada	461	136	442	131	744	207,000	2	372
New Hampshire	629	82	617	75	3,073	865,000	9	341
New Jersey	820	205	808	200	1,717	1,254,000	20	86
New Mexico	500	192	362	166	398	495,200	6	66
New York	1,971	388	1906	369	5,089	1,597,642	13.65	373
North Carolina	2,891	1062	2781	999	4,765	1,098,500	16	298
North Dakota	838	28	807	19	1,150	220,000	4.5	256
Ohio	1,587	450	1517	412	1,597	1,353,500	12	133
Oklahoma	4,701	199	4644	166	4,427	257,856	3	1,476
Oregon	896	139	820	114	1,204	212,400	2.26	533
Pennsylvania	1,517	830	1359	781	3,196	2,238,094	24.5	130
Puerto Rico	35	34	35	34	35	600,000	9	4
Rhode Island	181	15	180	15	643	117,247	1.2	536
South Carolina	2,419	204	2319	158	2,317	0	2.5	927
South Dakota	2,503	88	2351	51	2,349	150,000	1.5	1,566
Tennessee	1,168	272	628	149	658	348,200	8	82
Texas	6,975	851	6913	817	7,478	435,915	7	1,068
Utah	858	248	784	217	605	713,300	6	101
Vermont	357	55	343	51	572	330,000	2.2	260
Virginia	1,637	184	1393	138	1,678	1,366,453	5	336
Washington	745	216	617	147	950	1,038,401	7.8	122
West Virginia	558	382	524	366	360	470,425	6	60
Wisconsin	1,140	257	923	192	3,653	713,500	6.25	584
Wyoming	1,468	95	1349	71	1,445	224,528	4.98	290
<b>Total</b>	<b>82,640</b>	<b>11,880</b>	<b>70,713</b>	<b>9,849</b>	<b>88,841</b>	<b>56,692,822</b>	<b>442</b>	<b>201</b>

1 – Includes dams of any size that are likely to pose a significant threat to human life or property in case of failure, and all other federal and non-federal dams > 25' high that impound > 15 acre-feet; and dams > 6' high that impound > 50 acre-feet.

2 – Estimated number of all dams under state regulatory control

3 - Dams with identified deficiencies by state definition (varies state to state) derived from state inventory in column 2

\*\*\*State no longer regulates low hazard dams impounding less than 50 acre-ft.