ANNUAL REPORT

THE ASSOCIATION OF STATE DAM SAFETY OFFICIALS

2006-07

Association of State Dam Safety Officials

Annual Report

July 2006 - June 2007

Association of State Dam Safety Officials
450 Old Vine St.
Lexington, KY 40507

The Association of State Dam Safety Officials 2007 Annual Report documents progress toward the financial and strategic planning goals set for this fiscal year. The fiscal year cycle takes into account activities from July 1, 2006 to June 30, 2007. The report follows the format of ASDSO's Strategic Plan.

Respectfully submitted,

2006-07 ASDSO Board of Directors

James W. Gallagher, P.E. (President), New Hampshire

Kenneth E. Smith, P.E. (Past President), Indiana

Mark B. Ogden, P.E. (President-Elect), Ohio

Steven M. Bradley, P.E.(Treasurer), South Carolina

Robert K. Martinez, P.E. (Secretary), Nevada

James L. Alexander, P.E., Missouri

Jason Boyle, P.E., North Dakota; replaced in mid-term by Doug Johnson, Washington

Jack Byers, P.E., Colorado

Max Fowler, P.E., North Carolina

Robert B. Finucane, P.E., Vermont

David A. Gutierrez, P.E., California

John H. Moyle, P.E., New Jersey

Stephen Partney, P.E., Florida; replaced in mid-term by James MacLellan, Mississippi

Randy Bass., P.E., Affiliate Member Advisory Committee Chair

Staff

Lori C. Spragens, Executive Director

Susan A. Sorrell, Membership & Meetings Director

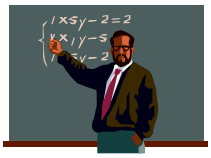
Sarah M. Mayfield, Information Specialist

Maureen C. Hogle, Promotions and Marketing

Members of the 2006-07 Board (L to R) Randy Bass (Affiliate Member Advisory Committee Chair), Jim Alexander (MO), Max Fowler (NC), David Gutierrez (CA), Mark Ogden (OH)(President-Elect), Steve Partney (FL)(replaced in mid-term by James MacLellan [MS]), Bob Finucane (VT), Ken Smith (IN)(Past President), John Moyle (NJ), Jim Gallagher (NH)(President), Jason Boyle (ND)(replaced in mid-term by Doug Johnson [WA]), Steve Bradley (SC)(Treasurer), Jack Byers (CO), and Rob Martinez (NV)(Secretary).

2006-07 AT A GLANCE

Training Dam Engineers



- ASDSO trained over 1400 dam engineers at conferences and seminars.
- ASDSO distributed $200,000 in training grants to states.
- Presented 7 technical seminars across the U.S.
- Provided a training calendar on the website.

Legislative Advocacy

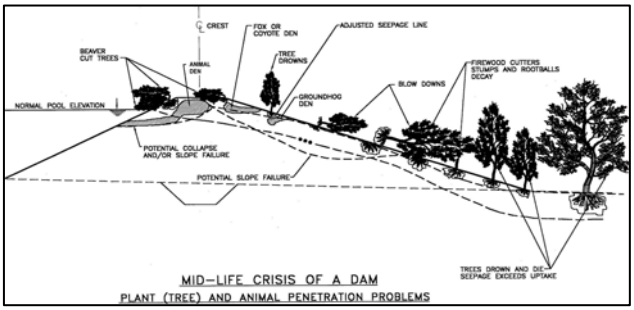
- Worked to see the National Dam Safety Program reauthorized in December 2006.
- Created support for a new bill in the 110th Congress establishing the National Dam Rehabilitation and Repair Program (HR 1098)
- Supported the establishment of a National Levee Safety Program
- Supported New York and Missouri with letters and testimony as lawmakers considered stronger dam safety policies.

Membership and Volunteerism

- Membership continued to grow.
- Over 220 ASDSO members participated in moving projects forward in 2006-07 through committee work.
- New committees and task groups were formed on new member outreach, outlet works and media relations.

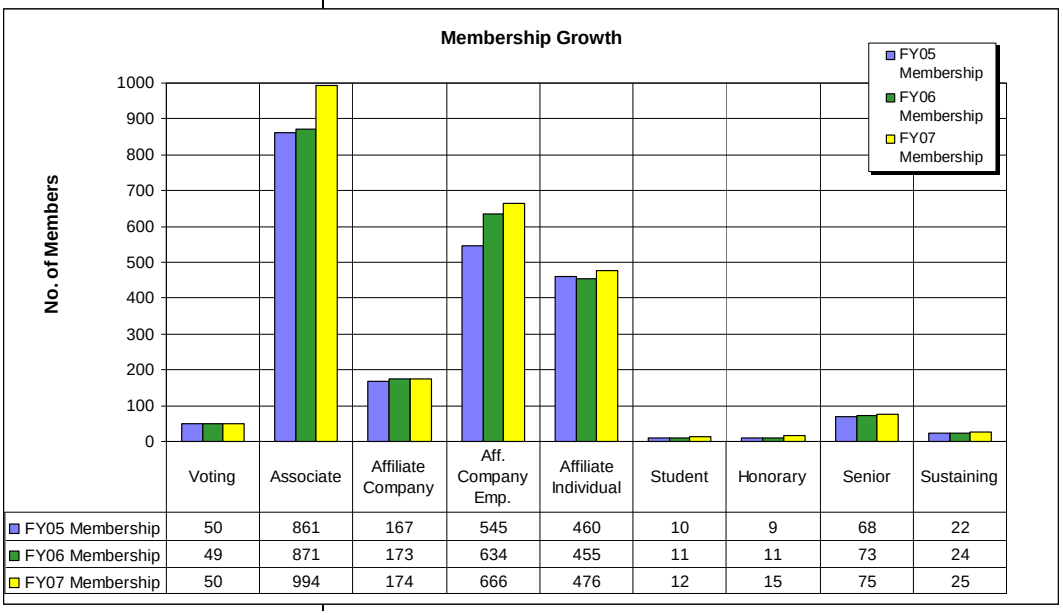
Educating Owners

- Over 200 dam owners from 7 states attended the ASDSO One-Day Workshop.
- A second one-day course on *Introduction to Dams* was developed.



Fundraising

- ASDSO's campaign generated nearly $27,000 in donations and $62,500 in sustaining memberships, plus an additional $5,000 at the popular ASDSO *Dam Bidness* Silent Auction, held at Dam Safety '06 in Boston.
- Undergraduate scholarship funds doubled in size; 3 scholarships given.
- Expanded student outreach programs.
- Financial independence from federal support.



	Voting	Associate	Affiliate Company	Aff. Company Emp.	Affiliate Individual	Student	Honorary	Senior	Sustaining
FY05 Membership	50	861	167	545	460	10	9	68	22
FY06 Membership	49	871	173	634	455	11	11	73	24
FY07 Membership	50	994	174	666	476	12	15	75	25

ASDSO Board of Directors Adopts New Strategic Plan in FY07

Revised vision, mission and goals were adopted in 2006-07:

Vision: *A future where all dams are safe.*

Mission: *The Association of State Dam Safety Official's mission is to advance and improve the safety of dams by supporting the dam safety community and state dam safety programs, raising awareness of dam safety issues, facilitating cooperation, providing a forum for the exchange of information, representing dam safety interests before governments, providing outreach programs, and creating a unified community of dam safety advocates.*

Goals:

Goal #1: Improve the efficiency and effectiveness of state dam safety programs.
Goal #2: Raise awareness of dam safety among the general public, media, state and federal governments, and other stakeholders.
Goal #3: Facilitate inter-organizational, intergovernmental and interstate cooperation.
Goal #4: Provide the professional dam safety community with forums for the exchange of information
Goal #5: Provide representation of dam safety interests before state legislatures, Congress and executive branches,
Goal #6: Provide quality and effective outreach programs.
Goal #7: Create a unified community of dam safety advocates through membership in ASDSO.
Goal #8: Manage the association effectively through internal policies and procedures.

ASDSO Mission Goal #1 - Improve the efficiency and effectiveness of state dam safety programs.

ASDSO Regional Projects

West Region
The Region elected Jack Byers (Colorado) to the Board replacing Elaine Pacheco (New Mexico). Robert Martinez (Nevada) will continue on the Board serving his second term of office. Jason Boyle (North Dakota) stepped down when he changed jobs and Doug Johnson (Washington) served out the remainder of his term.

The Region approved the West Board Member use of Regional Funds to attend a Board Meeting if needed.

Several states volunteered to address the following:

- John Falk (Oregon) will provide an article for the Technical Journal.
- Patrick Diederich (Nebraska) will serve on the DHS Government Security Council.
- Jack Byers (Colorado) will serve on the National Dam Safety Review Board (NDSRB) new Task Group on Risk Assessment.

The West held its annual regional conference on May 20-22 in Omaha, Nebraska. Approximately 120 people attended.

Southeast Region

The Southeast Region elected James MacLellan (Mississippi) to replace Steve Partney (Florida) when Steve took another job within the state. Replacing outgoing board member Brian Long (West Virginia) is Max Fowler (North Carolina).

The Southeast did not hold a regional conference in FY07.

Bill Browning (Virginia) agreed to serve as an alternate member of the DHS, Government Coordinating Council.

Northeast Region

The Northeast Region held its 2007 Biennial Conference in Manchester, NH on June 5-7. Over 200 people attended. The New Jersey/Pennsylvania Council for Safe Dams organized the event. (CSD)

Bob Finucane (Vermont) was re-elected to the Board.

Grace Levergood (New Hampshire) prepared the September 2006 article for the Technical Journal Committee.

New Hampshire volunteered to participate in the National Dam Safety Review Board steering committee for research projects dealing with improvement of Regression Equations and Bob Finucane volunteered for the Best O&M Practices for Gates task group. Dennis Dickey (Pennsylvania) will serve as an alternate member to the DHS Government Coordinating Council on dam security.

Midwest

Ken Smith (Indiana) was elected for another term to the board.

Jim Alexander volunteered to be on the National Dam Safety Review Board steering committee for research projects dealing with improvement of Regression Equations

Mia Kannick (Ohio) authored a paper for the technical journal.

Tracking State Dam Safety Program Improvements

ASDSO has been collecting data on state dam safety program performance for 21 years. Data on changes to state dam safety agency budgets, staffing, continuing education, public and owner awareness efforts, dam failures, laws and regulations, etc. is housed at ASDSO.

Efforts continue to make this older data more usable, by transferring it from paper files to an electronic database and by streamlining the way it is collected now.

States continue to use the *Dam Safety Program Management Tools* (DSPMT) software to collect and send state program performance survey answers and data for the National Inventory of Dams into a centralized repository. This system was created by ASDSO, the US Army Corps of Engineers Tech Center and the DHS/FEMA National Dam Safety Review Board Performance Measures Workgroup. Mike Grounds (Beacon Resources) created the program and manages the database for the Corps and ASDSO.

Fiscal 2007 was the first year that ASDSO began to generate analytical comparisons and reports using this data.

- At the March 2007 ASCE Policy Week, individualized state reports were provided to those visiting legislators and talking about dam safety.
- The ASDSO leadership submitted a "State of the States" report to FEMA Director Paulison at a mid-winter meeting in 2007 where he was encouraged to look a performance measures—created using the data—which supported continuation of the National Dam Safety Program.
- The FEMA National Dam Safety Review Board was provided with a first-glimpse at data supporting the performance measures that they developed to measure progress of the National Dam Safety Program.
- Data was used for ASDSO State Peer Reviews.

Performance Categories:

1. Point of Contact Information
2. Legislation and Regulations
3. Program Staffing and Budget
4. Changes in Dam Inventory
5. Permitting Processes
6. Dam Inspections
7. Enforcement Capabilities
8 Remediation Needs and Accomplishments
9. Emergency Action Planning and Response
10. Education and Training
11. Public and Owner Relations
12. Miscellaneous (includes collection of technical criteria, dam failure information)

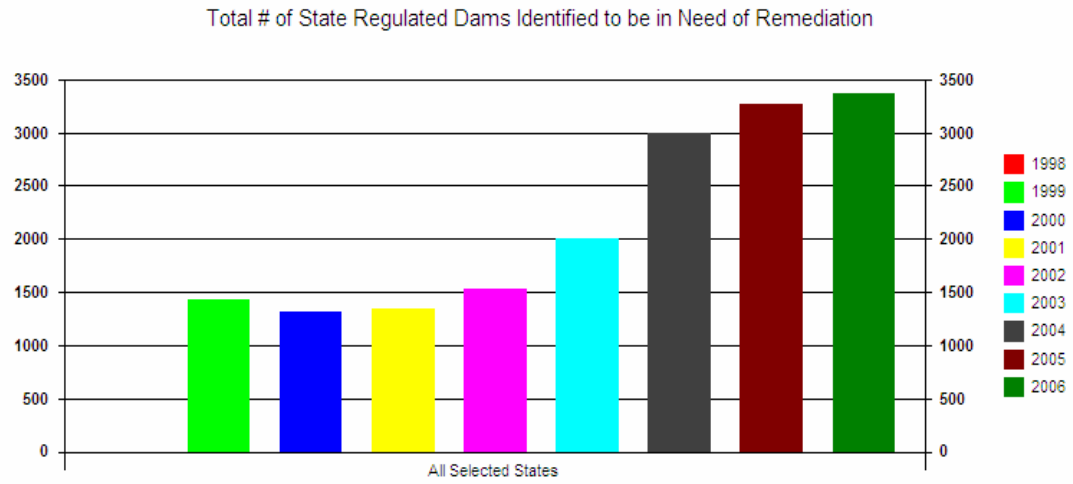
A Glimpse at the National Dam Safety Program State Performance Measures & National Inventory of Dams Data

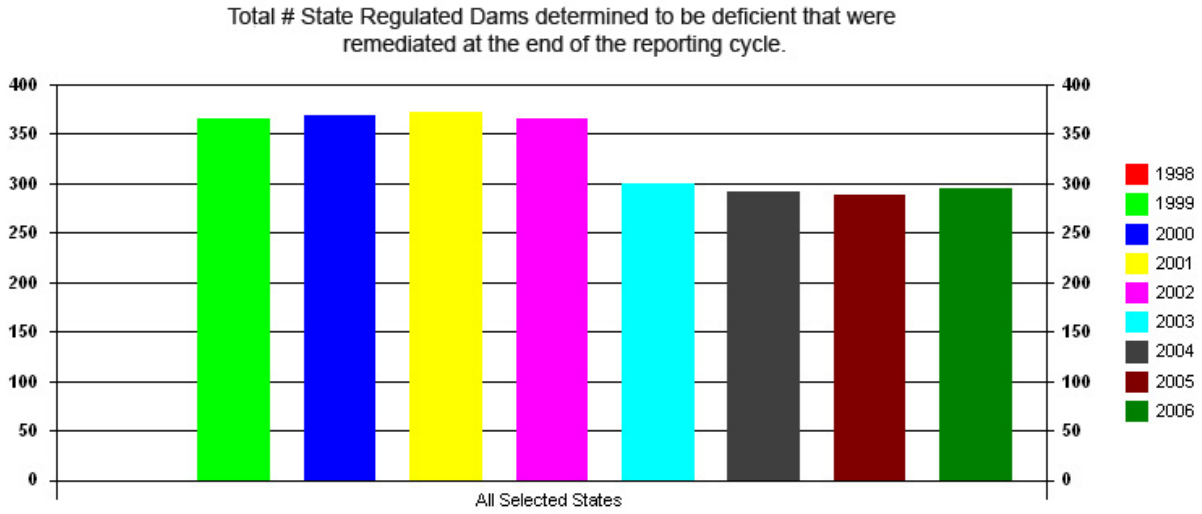
States should meet basic legislative/regulatory criteria found in the National Dam Safety Act.

1998 – 17 States Meet All NDSP Legislative Criteria	**2005 –** 20 States Meet All NDSP Legislative Criteria

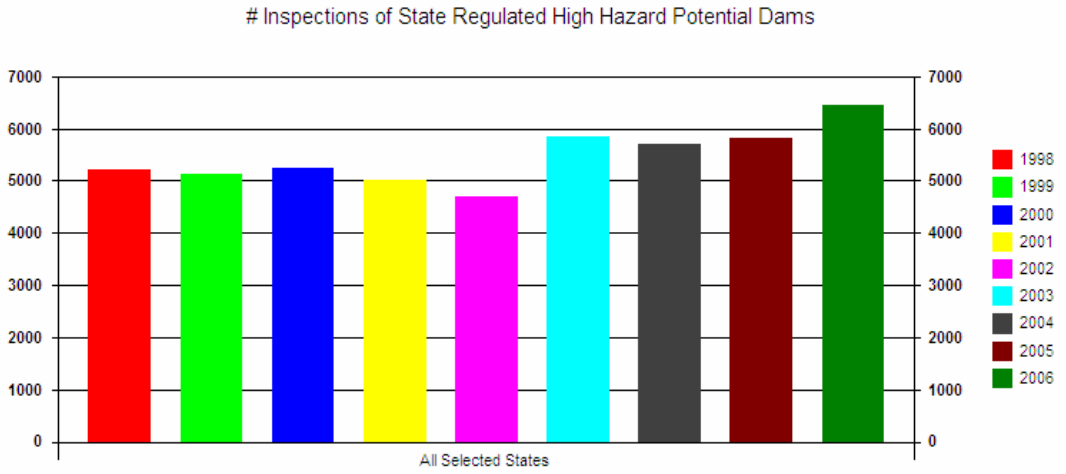
The National Dam Safety Program supports the Remediation[1] of deficient[2] dams. Identification of deficient dams in need of remediation is important. Identification shows improvement in the ability of states to do their jobs.

[1] **"Remediation"** is defined as a solution to remove the dam safety problem. This can include solutions such as the addition of a larger spillway, repair of the structure, or removal of the dam. [2] **"Deficient"** is defined as a dam that is not capable of performing safely under all required design pool and loading conditions. **Note**: Each state may have different definitions and standards.

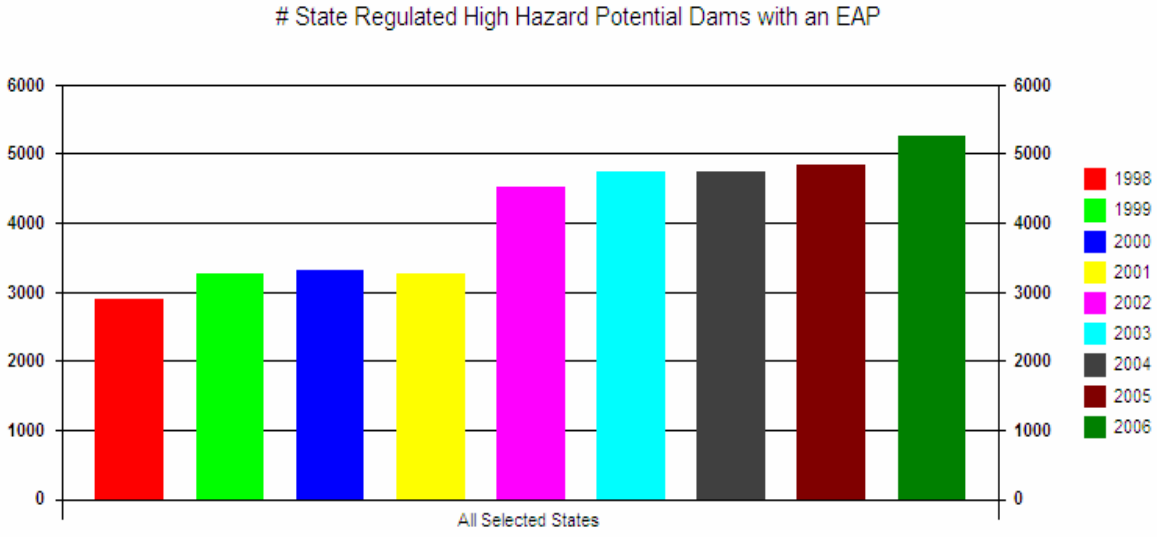




Increasing inspections of dams.



Reducing the risk to the public by increasing the number of current emergency action plans (EAPs) on high-hazard potential dams.



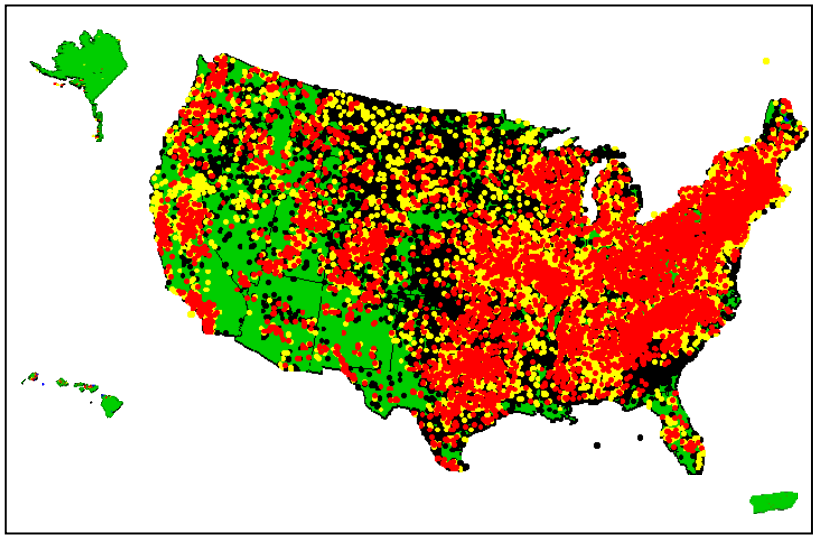
Dams in the United States

Number of Dams in the National Inventory: 70,968

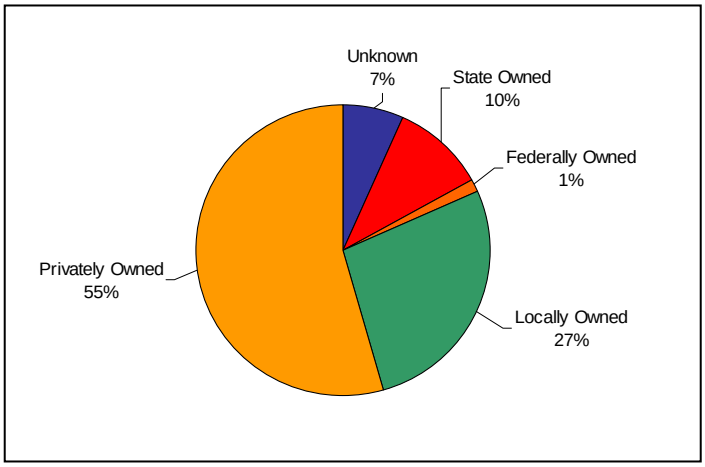
Number of State Regulated Dams in NID: 63,378

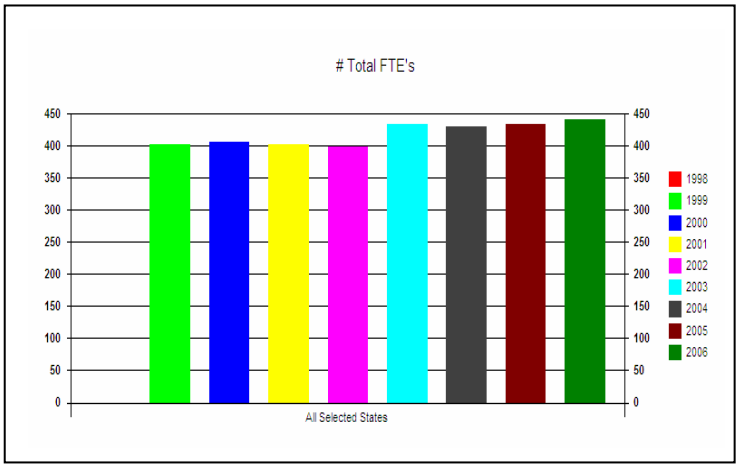
Number of High-Hazard Potential State-Regulated Dams:
10,094

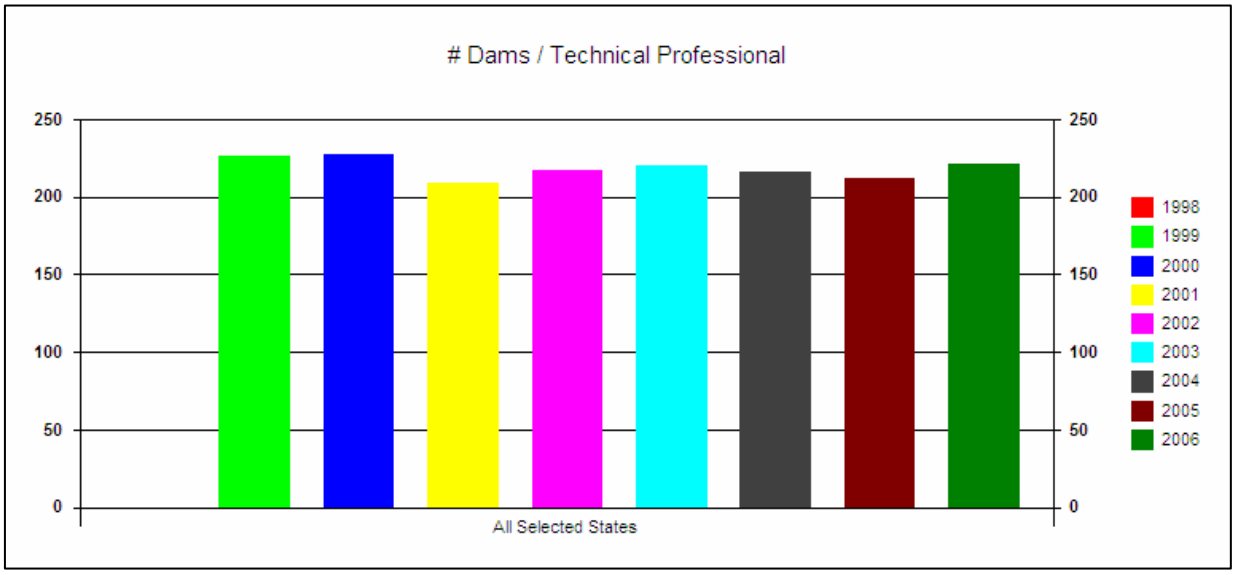
Red Dots =“High-hazard potential dam” is typically defined as a dam whose failure or mis-operation will cause loss of human life and significant property destruction.
Yellow Dots =“Significant-hazard potential dam” is typically defined as a dam whose failure or mis-operation will cause significant property destruction.
Black Dots=“Low-hazard potential dam” is typically defined as a dam whose failure or mis-operation will cause minimal property destruction.



Breakdown of Dam Ownership in the States







2006 State Statistics	Total Dams in National Inventory	Dams Under State Regulation*		State-Determined Deficient Dams*			State Dam Safety Budget*	Staff Dedicated to Dam Safety Regulation*	
		Total	HH	Total	HH	SH		Total FTEs	Dams Per FTE
Alabama	2218	0	0	0	0	0	0	0	NA
Alaska	100	81	17	445	5	5	100,500	1	81
Arizona	328	251	94	26	33	7	711,028	7	34
Arkansas	1208	403	102	26	19	1	282,018	3	122
California	1495	1,273	341	80	10	18	9,190,000	58	22
Colorado	1808	1,928	345	27	0	2	1,692,300	14	138
Connecticut	723	1,187	226	13	0	6	490,000	7	183
Delaware	61	37	9	32	3	0	470,000	1	49
Florida	853	805	72	0	7	28	20,878,995	77	10
Georgia	4814	3,874	450	445	156	0	727,009	11	352
Hawaii	132	136	95	26	30	7	246,638	2	78
Idaho	407	569	107	26	4	6	249,294	8	76
Illinois	1462	1,485	187	80	0	0	306,000	5	309
Indiana	1047	993	241	27	76	154	425,000	5	199
Iowa	3340	3,325	83	13	9	10	57,000	2	1,900
Kansas	5707	6,031	194	32	11	6	557,104	10	598
Kentucky	1057	1,060	177	0	26	35	1,550,420	14	76
Louisiana	554	540	28	445	15	6	480,316	8	68
Maine*	337	831	25	26	3	10	36,914	1.5	554
Maryland	319	382	68	26	14	10	482,668	6	66
Massachusetts*	1624	2977	296	40	22	18	500,000	4.0	744
Michigan	985	1,034	84	24	5	5	255,400	3	334
Minnesota	1030	1,151	23	77	6	19	305,000	3	339
Mississippi	3433	3,698	258	32	28	0	62,079	4	860
Missouri	5206	653	455	28	27	1	261,779	5	131
Montana	3256	2,884	102	23	11	6	399,937	4	687
Nebraska	2284	2,288	121	0	0	0	326,145	6	394
Nevada	461	672	157	26	4	2	197,304	2	336
New Hamp.	629	840	90	49	4	17	717,282	8	105
New Jersey	820	1,715	213	191	46	116	1,254,000	20	86
New Mexico	500	396	177	126	70	28	484,411	6	66
New York	1971	5,060	386	0	0	0	1,006,732	11	471
North Carolina	2892	4,502	1,025	143	93	28	973,886	16	281
North Dakota	838	1,150	29	21	4	12	220,000	5	256
Ohio	1587	1,698	442	825	170	285	1,483,944	14	126
Oklahoma	4701	4,460	187	4	4	0	395,336	3	1,487
Oregon	896	1,204	122	5	4	1	212,400	2	533
Pennsylvania	1517	3,177	789	369	215	30	2,211,046	25	130
Puerto Rico	35	35	35	0	0	0	440,000	6	6
Rhode Island	181	671	17	1	0	0	113,976	1	559
South Carolina	2419	2,317	153	4	2	1	0	3	927
South Dakota	2503	2,349	47	72	11	7	150,000	2	1,566
Tennessee	1168	656	149	8	4	2	352,822	8	82
Texas	6975	7,202	837	109	101	6	350,000	7	1,029
Utah	858	667	189	0	0	0	666,200	6	111
Vermont	357	568	57	6	1	4	300,000	2	258
Virginia	1640	1,604	146	112	34	34	1,247,124	5	321
Washington	745	950	145	30	15	13	938,952	8	122
West Virginia	558	341	245	33	30	3	465,773	6	57
Wisconsin	1140	3,749	211	2	1	0	537,500	6	600
Wyoming	1468	1,445	79	2	0	0	160,365	5	290
TOTAL	**82,647**	**87,304**	**10,127**	**4,157**	**1,333**	**949**	**55,922,597**	**446.5**	**364 (av)**

**Source: DSPMT. MA and ME did not submit budget, FTE, or deficient dams data for 200; figures shown are from 2004 (MA) & 2005 (ME).*

Mentoring Makes State Programs Stronger: The ASDSO Peer Review Program

Since 1990, ASDSO has performed Peer Reviews—rigorous dam safety program performance reviews for state agencies, many of the largest federal dam safety programs and private sector utility companies.

Year in Review

1. Public Relations: The committee continued to find ways to get the word out to non-state dam safety programs about the ASDSO Peer Review Program. Plans are underway to focus new exhibit materials on the program.

2. Organizational Reviews: There have been two requests by "non-state" organizations for peer review since the last report.

3. State Peer Reviews: The Hawaii Dam Safety Program underwent a Peer Review in January 2007. Team members included Steve Verigin (State of California-retired), Jim Weldon (Denver Water) and Bill Bingham (Gannett Fleming). Kentucky went through a review in May 2007 with the team of Carl Montana (French & Parello), John Cima (Dominion Resources) and Dave Gutierrez (Calfornia). Prior to this review, new team members underwent new-member-training at ASDSO offices in Lexington. North Dakota had a review in July 2007. The team of Jim Weldon, John Ritchey (New Jersey) and Al Davis (Alton P. Davis Engineering) conducted the review.

A review of New Hampshire's dam safety program is being scheduled for October 2007.

States on the waiting list (or that have made inquiries include: New York and Virginia.

4. New Peer Reviewers: The Panel of Peer Reviewers welcomed John Cima from Dominion Resources. John brings a long resume of dam safety experience as an owner. John participated in a training session in Lexington on May 14, 2007, just before the Kentucky peer review.

5. Organizational Reviews: ASDSO declined a request from Merrill Creek Reservoir for a review, since the type of review was well outside of the norm for our Peer Review Program.

6. Peer Review Team Roster:

The only change to the roster was the addition of John Cima in the Owner category. We continue to look to add more panelists in the Owner and State Rep category.

I want to thank the ASDSO Board for the privilege of chairing the Peer Review Committee. Sincere thanks to all of you that serve on the Peer Review Panel and willingly contribute your time and expertise. Whether you have been called to serve this year or not your assistance to ASDSO on this important program is appreciated.

(*Submitted by Bill Bingham [Gannett Fleming], Chair*)

Continuing Education Programs for State Officials

Developing a CEU Program

The AMAC agreed to look into the establishment of a CEU (continuing education units) program for ASDSO training seminars.

Report from the Technical Training Committee

The training committee developed the advance course "Slope Stability for Embankment Dams." The committee has begun investigating developing a web based interactive training course. This course would be between 1-2 hours in length, and two pilot offerings are planned for the fall of 2007.

The committee will be meeting with the NDSRB Training and Research Workgroups to work to integrate their activities into appropriate training courses. The overall Program of Study will be reviewed over the next year along with a review of the consultant's contract and manual guidelines. An RFP will be developed by year's end for a new basic course to be offered in 2008-2009. *(Submitted by Randy Bass, Chair)*

Training Assistance

The Technical Training Assistance Program continues. States are taking advantage of university courses, federal courses and courses offered by organizations such as ASCE, PCA and ASDSO. The state grants are provided through the FEMA National Dam Safety Program.

ASDSO is also represented on the National Review Board's Training Work Group. A report from the Work Group is provided later in this report.

ASDSO manages and hosts an on-line Calendar of Training for Dam Safety.

Educational Tools for States

Resources/Library

A new on-line bookstore, managed by OmniPress of Madison, Wisconsin, is available through the Publications and Resources section of the ASDSO website. Users can order print and/or electronic versions of ASDSO publications through the online bookstore.

The online *Bibliography of Dam Safety* contains more than 18,000 citations, and is continually updated. Users can search the entire collection or any of nine categorized databases for technical guidelines, publications, videos, articles and other resources.

The in-house library at ASDSO headquarters added these new items during the reporting year:

1. Bradley, Jeff; Bruce, D; Ferguson, K; Poulos, S; Talbot, J; and Vrymoed, J. *Wolf Creek Dam Consensus Report – Engineering Risk and Reliability Analysis* (April 11, 2007).
2. Dunnicliff, John and Young, Nancy Peck. *Ralph B. Peck, Educator and Engineer: The Essence of the Man* (2006). BiTech Publishers, Ltd.
3. Federal Emergency Management Agency. *Multi-year flood hazard identification plan (MHIP) Version 2.0* (September 2006). Binder with CD-ROM.
4. Grounds, Michael. *QuickRoute Program Modifications and Training for the Dam Safety Program Management Tools (DSPMT) for the Oklahoma Water Resources Board (OWRB) and the Association of State Dam Safety Officials (ASDSO) – Final Report, 18 April, 2007.* Beacon Resources-River Engineering/Dam Safety.
5. Hinchcliff, Dave; Redlinger, C; Donat, G; and Baker, M. *Small Embankment Dam Safety Guide* (2006). U.S. Bureau of Reclamation.
6. Lemieux, Michele; Beck, J; Bondy, J; Hafferman, R; Schock, K; Siroky, L; and Taylor, A. *Small earthen dam construction: a guidebook for planning and construction of small earthen embankments (2004).* Montana Department of Natural Resources and Conservation.
7. Michigan River Partnership. *The Growing Crisis of Aging Dams: Policy Considerations and Recommendations* (Draft copy, dated August 22, 2006. "Not for distribution")
8. Rydlund, Paul H. Jr. *Peak Discharge, flood profile, flood inundation, and debris movement accompanying the failure of the upper reservoir at the Taum Sauk Pump Storage Facility near Lesterville, Missouri* (2006). U.S. Geological Survey.
9. Texas Commission on Environmental Quality. *Dam Removal Guidelines* (2006)
10. Texas Commission on Environmental Quality. *Guidelines for Operation and Maintenance of Dams in Texas* (2006)
11. Texas Commission on Environmental Quality. *Hydrologic and Hydraulic Guidelines for Dams in Texas* (2007)
12. Weaver, Kenneth D. and Bruce, Donald A. *Dam Foundation Grouting* (2007). ASCE Press
13. *ASCE News,* January 2006 to present
14. *Southwest Hydrology,* March 2006 to present

New ASDSO Publications in 2006-07

1. *2007 West Regional Conference Proceedings*
2. *2006 and 2007 Annual Conference Proceedings*
3. *2006 Safety Evaluation of Existing Dams Course Materials*
4. *2006 Hydraulics of Spillways Course Materials*
5. *2006 Dam Failure Analysis Course Materials*

Update of the Model State Dam Safety Program

Underwritten by FEMA, ASDSO updated the *Model State Dam Safety Program* this year, including new recommendations on developing an owner-responsible inspection program and a state dam rehabilitation loan program for owners.

Goal #2 - Raise awareness of dam safety among the general public, media, state and federal governments, and other stakeholders.

Public & Media Awareness

ASDSO's Media Outreach Group communicates several times a month by email, and volunteers have provided information and assistance in response to several media requests over the past year.

The issue of dam safety was frequently covered in both local and national news sources between July 1, 2006 and June 30, 2007. Both technical writers and reporters attended the Dam Safety 2006 and the 2007 ASDSO Northeast Regional Conference, and articles appeared in *ENR* and *International Water Power and Dam Construction*. A freelance writer based in Needham, Massachusetts attended the Northeast conference in order to gather background information for a future article about watershed dams in the Northeast.

A synopsis of issues and events that spurred other calls to ASDSO follows:

- *National Dam Safety Legislation* – Following introduction of the National Dam Rehabilitation and Repair legislation into the 110th Congress, introduced by Rep John Salazar, a reporter for the Middletown, *NY Times Herald* contacted ASDSO about the announcement that NY Senator Charles Schumer and Congressman John Hall would co-sponsor it. The bill was passed by the House Transportation and Infrastructure Committee on August 3 (two days after the Minneapolis bridge collapse) and has been mentioned in a handful of subsequent editorials about the poor condition of US infrastructure.

- *USACE Announcements of Unsafe Levees and Dams* - In January 2007, the USACE announced that 122 levees nationwide (including 37 in California and 19 in Washington) pose an unacceptable risk of failing in a major flood. In April 2007, the Corps released the *Wolf Creek Dam Consensus Report, Engineering Risk and Reliability Analysis* and a list of USACE dams identified as highest risk and highest priority (Wolf Creek Dam, in Kentucky; Center Hill Dam, in Tennessee; Martis Creek and Isabella Dams, in California; Clearwater Dam, in Missouri; and Herbert Hoover Dike, in Florida). In June 2007, PBS ran a 4-part series on U.S. infrastructure (*State of Repair*). One segment, *Dam Costs*, examined the financial obstacles to improving the state of America's dams and cited Wolf Creek as an example.

- *Anniversary of the Kaloko Dam Failure* – In early 2007, ASDSO provided information for an ABC *20/20* feature on the March 2006 failure of Kaloko Dam. An April 5, 2007 *NY Times* editorial, by Bob Herbert, cited the Kaloko dam failure and called for more funding for U.S. infrastructure. Statistics cited in the article were taken from ASDSO's website.

- *Flooding in the Northeast and the Anniversary of the 1977 Johnstown Flood - Both* events prompted calls to ASDSO in the summer of 2007 from the *Scranton Times-Tribune* and the *Citizens Voice*.

- *Legal Aspects of the Taum Sauk Breach* – The fallout from the December 14, 2005 breach of the upper reservoir of the Taum Sauk hydroelectric project in Missouri continued into 2007. ASDSO received numerous calls in the immediate aftermath of the breach, and a handful in the past year; in contrast with the Missouri DNR, which continues to play a major role in subsequent investigations.

- *Dam failure in WV* – ASDSO was contacted by an Associated Press reporter about an overtopped dam at Lee's Fishing Lake, in Lincoln County, WV. Several hundred residents of Hamlin were evacuated. The lake was drained by the previous owner, but had refilled, maybe due to a clogged pipe. Several articles resulted.

- *Public Safety at Dams* – ASDSO provided information about incidents at low-head dams and recommended safety measures to the Discovery Channel (for a documentary on low dams planned as part of a 20-film series called *True Heroes)* and reporters and legislative staff in Illinois. The Illinois General Assembly later passed the Illinois Dam Safety Initiative, requiring warning signs and buoys at hazardous dams. Removal and/or modification of Illinois' 25 publicly owned, run-of-river dams is likely. (This topic has been in the news in many states, including Iowa, Massachusetts, Michigan, North Dakota, Ohio, Pennsylvania, Tennessee, Virginia, Washington and Wisconsin.)

- *Minneapolis Bridge Collapse* – The August 1, 2007 collapse of the I-35W bridge in Minneapolis focused attention on not only bridges, but dams as well. ASDSO was contacted by CNN and other national news sources, including CBS News, and major national newspapers used ASDSO statistics (some by way of the ASCE Report Card) and information from the ASDSO study *The Cost of Rehabilitating Our Nation's Dams (Dec 2002, rev Oct 2003).*

TEMPE NEWS 10 THE TEMPE REPUBLIC • WEDNESDAY, AUGUST 15, 2007 3

Mitchell gets first-hand look at bridge inspection

By Kerry Fehr-Snyder
KERRY.FEHR-SNYDER@ARIZONAREPUBLIC.COM

After observing a 10-minute inspection on a freeway bridge that's less than 4 years old, Arizona Congressman Harry Mitchell expressed confidence Tuesday in the inspection process for Arizona freeway bridges.

into a Minneapolis bridge that collapsed three weeks ago into the Mississippi River.

Tuesday's tour, on the border between Chandler and Ahwatukee, came a week after a freeway bridge under construction in northeast Mesa collapsed but didn't injure anyone. ADOT has said bridges are most vulnerable

the deck superstructure, repairing potholes that could lead to cracks and studying changes in the drainage system nearby.

"It seems to me it's a fairly thorough (inspection) system," he said.

ADOT spends about $20 million a year inspecting freeway bridges, agency spokesman Doug Nintzel said.

Mitchell said Arizona motorists benefit from relatively young freeway bridges that are built with more modern techniques and materials than were used for the Minneapolis bridge.

Mitchell did not say whether more money is needed to hire freeway bridge inspectors. The real problem, he said, appears to be dams that are at risk of failing. The Dam Rehabilitation and Repair Act of 2007 would authorize the Federal Emergency Management Administration to award grants for the rehabilitation and repair of publicly-owned dams.

In Arizona, that could mean the repair of 16 "unsafe dams with potentially imminent risk of failure," according to a 2006 study by the Arizona Department of Water Resources. The cost of fixing those dams ranges from $97 million to $242 million, the agency estimated.

Mitchell said that despite the risks, he spent Tuesday focusing on the freeway bridge issue because key congressional members and the public are "concerned more about bridge safety" following the Minneapolis accident.

When asked about whether more money was needed to hire freeway bridge inspectors, Arizona Congressman Harry Mitchell said, "The real problem appears to be dams that are at risk of failing."

State Dam Safety Programs

- *Lack of a State Dam Safety Program in Alabama* – Reporters from the *Anniston Star* and *Talladega Daily Home* contacted ASDSO on several occasions. At least ten articles and editorials regarding Alabama's lack of a state dam safety program appeared in these newspapers.
- In late summer 2006, Maine's under-resourced state dam safety program received considerable media attention. ASDSO provided information to the *Portland Press Herald* for several articles and editorials, but the attention has since waned.
- In July and October 2006, the *Wilmington News Journal* contacted ASDSO about the Delaware's two-year-old dam safety program.
- In August 2007, the *Columbus Dispatch* requested program statistics and other information from ASDSO and interviewed ODNR staff. The resulting article discussed the necessity of prioritizing inspections in light of a lopsided staff-to-dams ratio and a subsequent editorial urged policymakers to find ways to assure that state's dams are inspected in a timely manner.

State & Local Advocacy for Dam Safety

At the Boston conference, the ASDSO leadership met with Brian Pallasch, Director of ASCE Government Relations and ASDSO Legislative Committee Chair Brad Iarossi, plus Eric Ditchey representing the CSD, to discuss more effective ways to bring dam safety issues to the forefront at the state and local levels. After the Boston Conference, ASCE began to track quarterly state legislative issues that affect dam safety. These reports were made available to the membership via the website. The group also made a plan to communicate with each state dam safety program at the beginning of the calendar year (when state legislative sessions typically begin) to find out how ASDSO could assist with focusing attention to dam safety. Flyers and reports could then be provided to state policymakers on dam safety issues.

At ASCE's Policy Week this past spring, ASDSO generated State-by-State data reports from the 2005 state data call and the current National Inventory of Dams (NID). ASCE and ASDSO members who participated in Policy Week were able to

discuss dam safety with their legislators leaving the reports with lawmakers as a communication tool. This was the first attempt to generate these types of reports using the collected data.

New Jersey/Pennsylvania Council for Safe Dams (CSD) (submitted by Eric Ditchey, Chair):

The CSD Directory of Industry Contacts was updated and distributed to owners this past spring and had a record response to advertising in the directory.

CSD provided support for the 6th Biennial Northeast Regional Conference held in June 2007 in Manchester, New Hampshire. There was record attendance and exhibitor participation at the conference with 211 attendees and 45 exhibitors. It was very successful by all accounts.

The CSD is working with Pennsylvania Department of Environmental Protection, Dam Safety Program to advance dam repair loan legislation through subcommittees in the House and Senate. Senate Bill 145 would establish a Dam Project Fund for state-owned facilities and a Dam Project Revolving Loan Fund for owners of private dams, as co-applicants with local government units. Loans would be subject to an interest rate not to exceed 2% per year for a term of 20 years. SB 145 allocates $250 million for state-owned rehabilitation projects and $750 million for privately-owned dams. Eligible projects would include dam rehabilitation or dam breaching or removal. SB 145 was referred to the Committee on Environmental Resources and Energy on March 5, 2007.

House Bill 1355 would establish a Dam and Flood Control Project Fund for state-owned facilities and the Dam and Flood Control Project Revolving Loan Fund for owners of private dams, as co-applicants with local government units. Loans would be subject to an interest rate not to exceed 2% per year for a term of 20 years. HB 1355 allocates $15 million to finance rehabilitation or removal of state-owned dams, $110 million to finance rehabilitation or removal of privately-owned dams and $25 million to finance State Flood Control Projects. HB 1355 was referred to the Committee on Environmental Resources and Energy on May 24, 2007.

The CSD is in the process of developing information packages for each of the Environmental subcommittee members to help educate them on the issue of dam safety repair funding.

Ohio Dam Safety Organization)

- May 17, 2006 - ODSO, with help from the Water Management Association of Ohio (WMAO), our parent organization as well as ASDSO, held a Workshop entitled "Practical Emergency Management Planning for Ohio Dams". The full day workshop was held at Salt Fork State Park and was attended by 69 registered guests. Approximately half of the agenda was comprised of ASDSO developed OM&I and EAP presentations. Post Workshop Evaluations indicate that the program was well received.

- Sept. 10-14, 2006 - ODSO donated items for Ohio's contribution to the ASDSO "Dam Bidness" scholarship auction held at Dam Safety '06 in Boston.

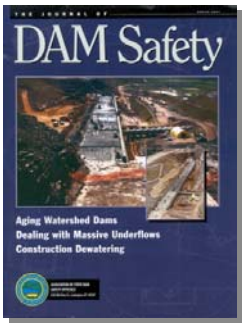
- Oct. 19, 2006 - ODSO sent letters to all members of Ohio's congressional delegation advocating for co-sponsorship and passage of H.R. 1105 and S.2444 (Dam Rehabilitation and Repair Act). While this legislation ultimately died with the last congress, we were successful in obtaining at least one additional co-sponsor in Rep. Marcy Kaptur of Toledo. As Congresswoman Kaptur is also a member of the present congress hopefully we have gained an ally that will assist in the passage of future dam safety legislation.

- Nov. 14-15, 2006 - ODSO members assisted in organizing and conducting the WMAO Annual Conference. The conference brings together many people from throughout the state to discuss and view presentations on all forms of water management related topics including dams and dam safety. Also at this time ODSO presented three "Best Maintained Dam" awards to dam owners in various public and private ownership categories.

- Jan. 7, 2007 - ODSO Presented Distinguished Service Awards to retiring longtime board members Art Brate of NRCS and Tim Granata of the Ohio State University.

(Submitted by James Brooks)

Communications



The Journal of Dam Safety (Submitted by Keith Ferguson, Committee Chair)

ASDSO's technical journal went full color in 2007. Interest and quality continue to improve.

The Journal Committee has had an active year with the publication of 4 journal issues. The committee has met once in person at the annual conference in Boston, and has also held several conference calls to explore ideas for future journals and to discuss and issues affecting production and production schedules. A change in layout contractor was made this past spring/summer. The full color layout is receiving very positive feedback from the membership.

Each of the State Caucuses has been successful in supporting the Journal through the preparation of an article in their specified timeslot. The journal committee hopes in the coming year to explore a number of special subject areas such as risk assessment and to find a variety of articles that cover the range of technical disciplines required for dam safety engineering.

ASDSO *E-News*

ASDSO continued its monthly electronic news delivery system to all members. This is a timely and efficient way to get information out to our members. E-News copies are posted on the website.

Web Site

A complete formatting overhaul was launched during the reporting cycle.

www.damsafety.org

Goal #3: Facilitate inter-organizational, intergovernmental and interstate cooperation.

The Emerging Levee Issue

On May 8, ASDSO submitted written and oral testimony on the National Dam Safety Program and the future levee safety programs to be developed. John Moyle (NJ) testified on behalf of Jim Gallagher who was at the ASDSO Executive Committee meeting. Leading up to this hearing, ASDSO leaders formulated a list of "principles" that are generally agreed as important to include in a national levee safety program. They are as follows:

1. Because of their expertise in the design, construction, operation and maintenance of levees, the U.S. Army Corps of Engineers should be tasked as the lead agency to develop and implement the program.

2. There should be a National Levee Safety Committee led by the Corps of Engineers with representatives from federal agencies that design, own, operate or maintain levees and that have responsibility for emergency preparedness or response. The committee must also have representation from state levee safety programs and local governments that own and operate levees. This committee should participate in the development of the strategic plan and goals of the program and advise the Corps on implementation.

3. The program must develop and maintain a comprehensive inventory of all current and future levees both federal and non-federal.

4. The program must provide national standards for the design, construction, inspection, maintenance and operation of all levees. Federal agencies that design, own, operate or maintain levees and state programs that participate in the program must be working toward those standards, with measurable steps and goals to determine acceptable performance in levee safety. As part of the national standards and because of the clear residual flood risk to natural flood plain areas behind levees, ASDSO supports reevaluation of the practice of levee certification and removing floodplain areas behind levees from national flood insurance requirements.

5. The program should encourage strong levee safety programs administered by the states to protect public safety and mitigate economic and environmental risks related to the failure of all levees not in the federal system. These programs should be fully integrated with state and local programs of flood risk management, especially floodplain management and dam safety.

6. There must be financial and other incentives to encourage states to undertake effective state levee safety programs.

7. The program must support research and training in levee safety engineering.

The NFIP Community Rating System

ASDSO continues to assist the FEMA, National Flood Insurance Program (NFIP) by offering expertise to its Community Rating System. Through a series of data requests/application processes, the CRS determines whether a state has an adequate dam safety program, which provides an additional incentive for municipalities or flood insurance policyholders to gain premium reductions in their flood insurance premiums.

Partnering with the Corps' Topographic Engineering Center

All annual data collection from the States is a coordinated effort between ASDSO and the US Army Corps of Engineers' Topographic Engineering Center (TEC). From dam inventory data—which goes into the National Inventory of Dams—to state program performance data—such as changes in state budgets, number of inspections, personnel—each state provides data to be used for performance measuring on a national scale.

This year, refinements were made to the reporting system. Calendar 2006 data was collected. NID data is housed at TEC while the state program data is managed by ASDSO.

DHS, Infrastructure Protection

With the help and expertise of ASDSO members sitting on DHS's Government and Sector Coordinating Councils, the DHS Dams Sector Specific Plan was finalized and released in FY07. This plan accompanies the National Infrastructure Protection Plan and is part of a larger effort to produce plans for the nation's 17 Critical Infrastructure and Key Resources (CI/KR) sectors.

Through an agreement with DHS, ASDSO will be assisting in the near future with the implementation of and performance reporting for this plan.

The Dams Sector Coordinating Councils continued to develop Dam Security Handbooks for regulators and owners.

In May, DHS asked ASDSO to facilitate the participation of state representatives at a workshop to improve data collection procedures on downstream consequences of dam failure. The workshops will be held in August 2007.

ASDSO was proud to provide representation to these councils and to work with DHS and the other federal agencies involved with dams on continuing to improve security around dams. (For a list of council members see Appendix A.)

DHS, FEMA's National Dam Safety Program

The Department of Homeland Security, Federal Emergency Management Agency administers the National Dam Safety Program (recently re-authorized by the National Dam Safety Act of 2006)(PL 109-460). Thanks to the generous support from this program, ASDSO was able to carry out the following projects during FY07.

1. Technical Training Assistance to States
2. Continuing Education Seminars and Webcasts for State Inspectors
3. Dam Owner Education Program
4. Update of the ASDSO Information Clearinghouse
5. Update of the Model State Dam Safety Program

Training and Seminars (1 and 2)
Described in Goal 1.

Dam Owner Education Coordinators (3)
Described in Goal 6.

Update of the ASDSO Information Clearinghouse (4)
Described above in Goal 4.

Update of the Model State Dam Safety Program (5)
Described in Goal 1.

The National Dam Safety Program also sponsors research projects and training programs at FEMA's Emergency Management Institute in Emmitsburg, Maryland. For more information on the National Dam Safety Program contact FEMA or go to:

http://www.fema.gov/plan/prevent/damfailure/

See Appendix B for a list of available information and guidelines from the National Dam Safety Program.

Other Partnerships

Organizations

ASDSO continues its partnering arrangements and has signed agreements with the following organizations and federal agencies:

- Interagency Forum on Infrastructure Protection
- National Emergency Management Association
- ASCE Environment and Water Resources Institute
- Canadian Dam Association
- National Watershed Coalition
- U.S. Society on Dams
- USDA Natural Resources Conservation Service
- US Army Corps of Engineers
- Western State Engineers

ASDSO exchanges information and coordinates projects with these organizations including trading conference information, publications, research information, etc.

Partnering Highlights

American Society of Civil Engineers (ASCE)

Coordination between ASDSO and ASCE remains a key goal for both organizations—from working on legislative affairs in Washington, DC to exchanging information and talents with the ASCE Institutes.

ASCE members touted the importance of the National Dam Safety Program and the new Dam Rehabilitation and Repair legislation (HR 1098) at their March Policy Week in DC. ASCE Government Relations Director Brian Pallasch organized Capitol Hill visits by over 200 ASCE and ASDSO members to talk about dam safety and infrastructure improvement needs. ASDSO Board members visited Congressmen and Senators to push for stronger dam safety programs at the federal level.

The Geo-Institute is continuing an effort started about 10 years ago to produce a guideline on dam inspection. Steve Snider (AMAC member) is the point of contact and spent some time with Lori Spragens during the reporting period discussing the finalization and distribution of this product.

ASCE Student News is distributing invitations to *Dam Safety 2007* to ASCE student chapters nationwide. *Dam Safety 2007* updates will be posted to the ASCE Student Web pages.

The ASCE Student Chapter section will provide a mailing list to ASDSO in this reporting period in order for ASDSO to send scholarship application announcements.

ASDSO Educational Outreach Committee member Ken Bosar spoke to ASCE student chapters at Rose Hulman and Purdue universities.

USSD

John Ritchey (New Jersey) spoke on behalf of Jim Gallagher at the USSD Annual Conference in March 2007.

National Watershed Coalition

The partnership between ASDSO and the NWC goes back to the establishment of this group out of the National Association of Conservation Districts. Now, ASDSO currently serves on the Steering Committee of the NWC. This year, ASDSO and the NWC continued dialogue with the Natural Resources Conservation Service (NRCS) over issues concerning the NRCS's technical involvement with NRCS-constructed dams (those dams built under federal programs administered by the NRCS). The goal is to mutually agree to solutions regarding the challenges surrounding a) who owns or is responsible for these dams and b) who will be responsible for them when the NRCS's project agreements have expired.

NWC is keeping ASDSO informed on its push to get full funding for the Small Watershed Program. On September 18, 2006, NWC member Trey Lam, Pauls Valley, Oklahoma, offered support for the program in his testimony before the Committee on Agriculture, Subcommittee on Conservation, Credit, Rural Development and Research, held in El Reno, Oklahoma.

Association of State Floodplain Managers (ASFPM)

ASDSO and ASFPM continued to work closely this past year on the levee safety issue and are trying to coordinate efforts more efficiently on this issue.

In March, the ASDSO Board made recommendations on ASFPM's issue brief entitled, *National Flood Programs and Policies in Review – 2007*. ASDSO's designated liaison Mark Ogden sent the recommendations to ASFPM. Discussions were held with ASFPM executive director Larry Larson to find common ground on issues regarding the bill to establish a national levee safety program.

The Natural Resources Conservation Service (NRCS)

The NRCS Emergency Action Plan (EAP) Sample was released for public use during the reporting cycle. The sample was presented at the ASDSO Annual Conference in Boston. It also has been integrated into the new ASDSO technical seminar course being taught by URS Corp.

The US Army Corps of Engineers

ASDSO and the Corps of Engineers continue to honor the joint memorandum of understanding, signed in 2003. This MOU began a joint mission to improve dam safety nationwide. During 2006-07, coordination continued, through the Corps Topo. Center, on collecting data from the states, not only for the National Inventory of Dams, but for general state program performance analysis and reporting. The Corps and ASDSO also exchange continuing education information and mutually post dam safety announcements. ASDSO wishes to thank Charles Pearre, USACE Dam Safety Program Manager, for providing USACE mailing lists to ASDSO and keeping the lines of communication open with ASDSO; and Eric Halpin, USACE, Chief of Geotechnical Engineering, for volunteering his time to the ASDSO Annual Conference Program Committee.

The levee issue has brought ASDSO and the Corps team, working to build a national levee inspection program, together. Mark Ogden is acting as ASDSO point person on this activity.

Interstate Council on Water Policy (ICWP)

ASDSO has been supporting the ICWP's effort to push for continued funding of Streamgage Programs within the US Geological Survey.

Other Federal Agencies

Interagency Committee on Dam Safety (ICODS):

ICODS, which was established in 1980, encourages the establishment and maintenance of effective federal programs, policies, and guidelines to enhance dam safety and security. ICODS serves as the permanent forum for the coordination of federal activities in dam safety and security. FEMA also chairs ICODS. Member agencies include the following:

ICODS agencies:

Department of Agriculture
- -Agricultural Research Service
- -Natural Resources Conservation Service
- -Forest Service

Department of Defense, Army Corps of Engineers
Department of Energy
Department of the Interior
- -Bureau of Indian Affairs
- -Bureau of Land Management
- -Bureau of Reclamation
- -Fish and Wildlife Service
- -National Park Service

Department of Labor, Mine Safety and Health Administration
Federal Energy Regulatory Commission
Department of State, International Boundary and Water Commission
Nuclear Regulatory Commission
Tennessee Valley Authority

ASDSO continues to meet frequently with the members of ICODS.

FEMA and the National Dam Safety Review Board

www.fema.gov/plan/prevent/damfailure/index.shtm

Five ASDSO representatives continue to serve on FEMA's National Dam Safety Review Board and on the Work Groups, Research, Training, Security, Emergency Action Planning, Performance Measuring, Risk Assessment, and National Inventory of Dams. (See Appendix A for a roster.)

This year, the Review Board has been focusing on the following:

Task Group on Training

The national course was held in February at EMI: Pitfalls of Embankment Dams, February 21-22, 2007.

Task Group on Emergency Action Planning

The final report was given to the Review Board this spring. A strategic plan is being drafted to guide implementation.

Task Group on National Inventory of Dams

The manual is being revised. The Corps Tech Center, with recommendations from the DHS GCC/SCC NID Workgroup to take the NID off line, offered a proposal to the Review Board to temporarily take the NID off line until more precise security measures could be put in place. The Review Board did not decide to take it off line. The NID Workgroup will address the issue further.

Research: Geotextiles Manual

This will be a "state-of-the-practice" document rather than guidelines. The final version will be finalized later in 2007.

Research: Dam Breach Equations

A new steering committee was put in place to study dam breach equations.

Research: Report on Coordination and Cooperation with the European Union on Embankment Failure Analysis

The report was finalized and will be distributed on CD at the ASDSO conference via FEMA.

Research: Technical Manual on the Use of Plastic Pipe in Dams

The final version is complete and will be available at ASDSO's 2007 Annual Conference.

The Federal Energy Regulatory Commission

The FERC asked ASDSO to help advertise their security seminar held in June.

International Outreach

Brazil Safety of Dams Council

ASDSO was asked to speak at Brazil's National Seminar on the Safety of Dams on June 3, 2007 in Belem, Brazil. The host was the Comitê Brasileiro de Barragens (CBDB) ASDSO President Jim Gallagher (NH) spoke on the history of ASDSO and our current issues. Brad Iarossi (USFWS) talked about our legislative advocacy programs and Bob Finucane (VT) joined them as interpreter.

From L to R: Brad Iarossi, Jim Gallagher, Erton Carvalho, Technical Director of CBDB, unidentified, Cassio Baumgratz Viotti, Past President of CBDB, and Selmo Kuperman, organizing committee.

Bob Finucane (L) and Jim Gallagher take a tour at the Tucurui Hydropower Plant near Belem, Brazil.

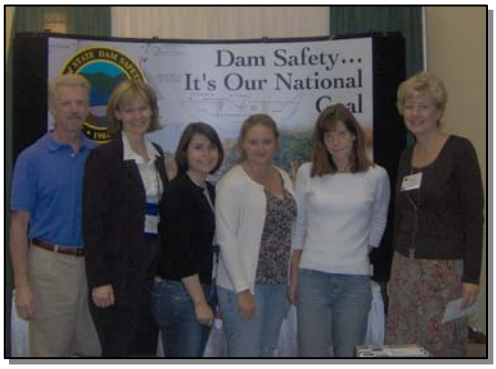
Canadian Dam Association

President-Elect Mark Ogden (Ohio) represented ASDSO at the CDA's strategic planning meeting on March 30-31 in Toronto. CDA looks to ASDSO for advice and thinks of ASDSO as a close ally in the North American effort to improve dam safety. Mark offered an ASDSO perspective to the CDA planning process and agreed to work toward improved coordination across borders.

Goal #4: - Provide the professional dam safety community with forums for the exchange of information

Annual Conference

ASDSO's 23rd Annual National Conference was held on September 10-14 at the Seaport Hotel and World Trade Center in Boston. The 2006 meeting featured a full complement of technical sessions, as well as special meetings for New England Dam Owners and Dept. of Homeland Security Protective Service Agents. In total, 800 attendees and guests participated.



(L to R) David Cain, Sarah Mayfield (ASDSO), Maureen Hogle (ASDSO), Kelly Kubala (MA), Jen Bogdan (MA), Susan Sorrell (ASDSO)

In addition to Dam Safety '06, two ASDSO regions held their own regional conference during the reporting period. The West Regional Conference welcomed 110 attendees and 22 exhibitors to Omaha on May 20-22. Manchester, New Hampshire was the site of the Northeast Regional Conference on June 5-7. Co-sponsored by the NJ-PA Council for Safe Dams (CSD) this regional conference attracted over 200 participants and 45 exhibitors.

Please mark your calendars for these upcoming ASDSO conferences:

- Dam Safety 07, September 9-13 in Austin, TX
- 2008 Southeast Regional Conference, dates TBA in Asheville, NC
- Dam Safety 08, September 7-11 in Indian Wells (Palm Springs) CA
- Dam Safety 09, September 27-October 1 in Hollywood (Ft. Lauderdale) FL

Technical Seminars

Through the National Dam Safety Program at FEMA, ASDSO received funding from FFY06 federal appropriations to hold four regional technical seminars and one advanced seminar, and provided travel and registration assistance to states for attending other technical training of their choice.

FFY06 Contract

2007 Advanced Course on Slope Stability for Embankment Dams
July 17-20, 2007 – Rolla, Missouri. Instructional contract awarded to the University of Missouri, Rolla. Completed with 22 participants.

2006 Northeast Regional Course on Interactive Preparedness: Emergency Action Planning for Dam Safety
November 8-9, 2006—Newark, Delaware. Completed with 41 participants.

2006 Southeast Regional Course on Interactive Preparedness: Emergency Action Planning for Dam Safety
December 5-6, 2006—Jacksonville, Florida. Completed with 58 participants.

2007 West Regional Course on Safety Evaluation of Existing Dams
February 6-8, 2007—Tempe, Arizona. Completed with 68 participants.

2007 Midwest Regional Course on Hydraulics of Spillways
March 26-28, 2007—Milwaukee, Wisconsin. Completed with 42 participants.

FFY07 Contract

2007 Advanced Course on Slope Stability for Embankment Dams
October 23-26, 2007 – Denver, Colorado. Registration is ongoing.

2007 Northeast Regional Course on Hydraulics of Spillways
November, 2007 – Albany, NY – Instructional contract awarded to David Ford Consulting. Registration is on-going.

2007 Southeast Regional Course on Earthquake Engineering for Dams
December, 2007 – Memphis, TN. Instructional contract awarded to URS Corp.

2008 West Regional Course on Emergency Action Planning
January 2008 – San Diego, CA.

2008 Midwest Regional Course on Earthquake Engineering for Dams
March, 2008 – St. Louis, MO

Virtual Seminar Pilot Project

The Technical Training Committee discussed possible topics and instructors for two pilot web-based seminars. Staff reviewed two possible providers, the Univ. of Missouri-Rolla Civil & Environmental Engineering Department and CommPartners, a private technology and service company specializing in web and audio training. The UMR option appears to have more of the features needed for this project, and contract discussions are ongoing. The committee will finalize the plan and present both of the virtual seminars by the end of the calendar year.

The Resource Center

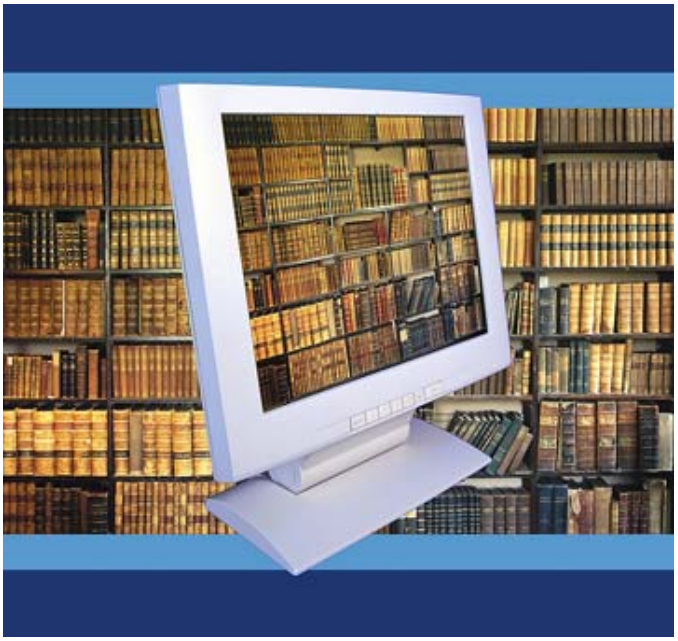
Online Bibliography - ASDSO's bibliography now includes more than 18,400 records in ten separate databases that can be searched individually or collectively.

- ASDSO publications (conference proceedings, technical seminars, newsletter articles, special publications) – 2,307 records
- Journal Articles – 3,307 records
- News Sources – 4,340 records
- Research (information about current and recent dam-related research) – 674 records
- Conference Proceedings – 1,663
- Federal Resources - 2,222
- Audiovisual – 124
- Websites – 340
- For Kids - 38
- Miscellany (other books, reports, etc. published by organizations other than ASDSO and federal agencies) – 3,461 records

ASDSO has electronic versions of most articles in the News database and electronic access to many articles in the Journals database.

Information Services – ASDSO responded to a large number of information requests from ASDSO members and non-members, including states, reporters, researchers, dam owners, university students and staff, federal agencies, people living near dams, legislative staff and others.

Library Acquisitions/Loans – ASDSO maintains a comprehensive library of dam safety references in various formats. Members may borrow various items from the collection, which includes books, magazine and newspaper clippings, videocassettes, CD-ROMs, and DVDs.



ASDSO subscribes to several industry publications and has access to Lexis-Nexis, and technical databases, including EiCompendex, GeoRef, and Cambridge Scientific Abstracts. Relevant papers and articles from these print and electronic resources are catalogued in the ASDSO Bibliography.

Goal #5: - Provide representation of dam safety interests before state legislatures, Congress and executive branches

Legislative Issues in 2006-07

House Transportation & Infrastructure Committee held hearing on Dam Safety issues on Wednesday, July 26, 2006

On Wednesday, July 26th at 2:00 pm ET, the US House of Representatives Subcommittee on Economic Development, Public Buildings and Emergency Management held a legislative hearing on proposed amendments and reauthorization of the National Dam Safety Program (NDSP). The House Transportation and Infrastructure Committee postponed the mark-up of HR 4981 earlier in the week in order to hold the hearing.

Witnesses, including ASDSO President Ken Smith of Indiana; Larry Roth, Deputy Executive Director of ASCE; Steve Stockton of the US Army Corps of Engineers; David Maurstad of FEMA and a dam owner from New York; all testified at the hearing in support HR 1105 (Dam Repair and Rehabilitation Act) and HR 4981 (reauthorization of the National Dam Safety Program).

2005-06 President Ken Smith testifies in Washington, DC at a hearing on Dam Safety.

With strong support from Congressman Randy Kuhl (R-NY) and Jim Matheson (D-UT) who both introduced the reauthorization bill (H.R. 4981), Congressman Bill Shuster (R-PA) and Congresswoman Sue Kelly (D-NY), who introduced the rehabilitation funding bill (H.R. 1105); the House Transportation & Infrastructure Committee approved the National Dam Safety Act (H.R. 4981) and the Dam Rehabilitation and Repair Act (H.R. 1105) on September 20, 2006. These bills were strongly supported by ASCE, ASDSO and the Dam Safety Coalition.

The National Dam Safety Act would reauthorize the National Dam Safety Program which provides assistance to state dam safety programs to aid in their operations to inspect non-federal dams. The Dam Rehabilitation and Repair Act would provide assistance to states to make critical repairs to the nation's publicly owned dams.

On the Senate side; companion bills had been introduced to reauthorize the National Dam Safety Program (S. 2735) by Senator Kit Bond (R-MO) and Senator Daniel Akaka (D-HI); and to provide for rehabilitation funding (S. 2444) introduced by Senator Daniel Akaka (D-HI).

Only the Dam Safety Act of 2006 made it out of the Senate Environment and Public Works Subcommittee after the Subcommittee made some changes to the proposed bill language. This language differed from the language of the House version H.R. 4981 and caused some delay in obtaining final House and Senate floor approvals. Finally, Representative Kuhl accepted the language offered in the Senate bill (S. 2735) and modified the House bill. However, this was almost at end of the Congressional session, which would require the bill to be reintroduced in 2007 and the process to start over, leaving a gap in the implementation of the NDSP.

It was the extraordinary efforts of Congresswoman Sue Kelly (ASDSO's 2007 National Award of Merit winner) of New York's 19th congressional district that enabled the Dam Safety Program to be reauthorized. Representative Kelly, a long standing dam safety advocate, had just lost her re-election bid and was preparing to leave her Congressional office. The house bill H.R. 4981 had advanced to the House floor, however, there was no time remaining for a floor vote and the bill seemed doomed even though it was so close to passage. Sue Kelly recognized the months of hard work that had enabled the bills to advance to the floor, and spent considerable time and extraordinary effort to move the bill through a procedural maneuver to enable the bill to be passed at the absolute last minute. Even though her bill, the Dam Repair and Rehabilitation Act of 2006 (H.R. 1105) would not be passed in 2006, she advanced dam safety in the United States by ensuring passage of the Dam Safety Act of 2006 to continue the necessary work of the National Dam Safety Program.

In March 2007, the ASDSO Board of Directors participated in ASCE's annual Policy Week Capitol Hill visits. Each year over 100 civil engineers visit the offices of their House member and US Senators to educate them on critical civil engineers issues and to seek their assistance for passage of vital legislation and appropriations important to the civil engineering community. Each year ASCE identifies a short list of key issues to present on Capitol Hill. In almost every year, one of these critical civil engineering issues is Dam Safety. The partnership between ASCE and ASDSO has been a remarkable success. The ASDSO Board of Directors now participates in the ASCE Policy Week Hill Visits each year.

On March 8, 2007 more than 120 civil engineers made over 300 visits to members of Congress asking for their support to advance several key civil engineering bills, including passage of the Dam Repair and Rehabilitation Act of 2007. This bill, which revived Sue Kelly's bill in 2006, was introduced by Congressman John Salazar (D-CO) and Randy Kuhl (R-NY) on February 17, 2007. Each engineer was provided with state by state dam safety statistics and talking points describing the condition of our Nation's dams and the enormous need for funding to repair unsafe dams.

ASDSO and ASCE joined together to produce this flyer that was distributed to lawmakers during Policy Week in DC.

House Transportation & Infrastructure Subcommittee held hearing on Dam Safety issues on Tuesday, May 8, 2007

On May 8, 2007, the US House of Representatives Subcommittee Economic Development, Public Buildings and Emergency Management held a legislative hearing on proposed bills including rehabilitation funding for dams and levee safety. John Moyle, State Representative from New Jersey provided powerful testimony in support of the Dam Repair and Rehabilitation Act of 2007. ASCE also provided testimony in support of the bill which will provide $200 million over five years to fund needed repairs to public owned high hazard dams.

ASCE, ASDSO and the Dam Safety Coalition have been working very hard to enlist cosponsors of the bill. H.R. 3224 was passed by the US House of Representatives Committee on Transportation and Infrastructure on August 2, 2007. Several members of the full committee, including Chairman Oberstar (D-MN), emphasized the condition of the nation's dams and expressed support to funding to repair unsafe dams. The bill's sponsor, Rep. John Salazar (D-CO) addressed the committee calling dams, "a vital part of our nation's aging infrastructure [that] provides enormous benefits to the majority of Americans including drinking water, flood protection, renewable hydroelectric power, navigation, irrigation and recreation," and indicated that this measure is a good first step in addressing the critical needs of the nation's dams.

The Dam Repair and Rehabilitation Act of 2007 currently has 11 co-sponsors. A companion bill is expected to be introduced in the Senate soon.

ASDSO and ASCE provided testimony to the Appropriations Subcommittees in support of full funding for the National Dam Safety Program, and funding for the USDA NRCS Watershed Rehabilitation Program.

ASCE and ASDSO continue to be engaged in ongoing discussion with the House and Senate subcommittees in support of a national levee safety program.

Submitted by Brian Pallasch, ASCE Director of Government Affairs; and Brad Iarossi, ASDSO Legislative Committee Chair

See ASDSO federal testimony in Appendix C.

National Levee Safety Program – The National Levee Safety Program bill was introduced as HR 4650 in the 109th Congress and eventually died. Concurrently, the Corps was authorized and funded to begin a levee inventory program in 2006. Since the 110th Congress began, the House and Senate have taken up the issue in separate legislation. On May 8, ASDSO submitted written and oral testimony on the National Dam Safety Program and the future levee safety programs to be developed. John Moyle (NJ) testified on behalf of Jim Gallagher who was at the ASDSO Executive Committee meeting. (For more information see page 14.)

Stream Gage Funding— Led by the Interstate Council on Water Policy (ICWP), many organizations are pushing to increase federal spending sufficient to restore the U.S. Geological Survey's Cooperative Water Program (CWP) and National Streamflow Information Program (NSIP) to at least FY-2003 levels in the FY-2008 budget cycle. ASDSO signed onto an ICWP endorsement letter urging full funding of the programs next year. During the year, the ICWP has been keeping ASDSO and others who signed onto the letter informed of what's going on with this appropriation for FY08.

National Infrastructure Improvement Act –ASCE is leading a number of organizations in calling for the introduction of this act which would establish a commission to oversee the improvement of infrastructure in the US. ASDSO signed onto the letter in March.

ASCE's Policy Week—For the past two years, ASDSO Board members and other members participated in the March Policy Week organized by the American Society of Civil Engineers Government Relations office. Armed with talking points and compelling handouts, members met with staffers, Congressman and Senators from nearly every state touting the need for the National Dam Rehabilitation and Repair Act and other issues.

The Dam Safety Coalition

Several influential national organizations came together in 2005 to support passage of the Dam Rehabilitation and Repair Act (HR 1105). An idea spearheaded by ASCE Director of Government Relations Brian Pallasch, the group currently includes the following:

American Society of Civil Engineers - www.asce.org
Associated General Contractors of America - www.agc.org
Association of State Dam Safety Officials - www.damsafety.org
National Society of Professional Engineers - www.nspe.org
National Stone, Sand & Gravel Association - www.nssga.org
National Watershed Coalition - www.watershedcoalition.org
Portland Cement Association - www.cement.org
United States Society on Dams - www.ussdams.org

Go to the Coalition website (www.damsafetycoalition.org) to find out more about the group's goals, updates on news of interest, status of the legislation, links, etc. New members are welcome; see the website for details.

ASDSO Supports States' Programs

In 2007, ASDSO began to post state-by-state summaries of state legislative and policy changes that could affect dam safety regulation. This effort will jump-start a larger effort in 2007-08 to focus more time and attention on affecting policy in the states and not just at the federal level. Part of the effort will involve the development of grassroots committees within ASDSO to work on state issues, similar to the New Jersey/Pennsylvania Council for Safe Dams.

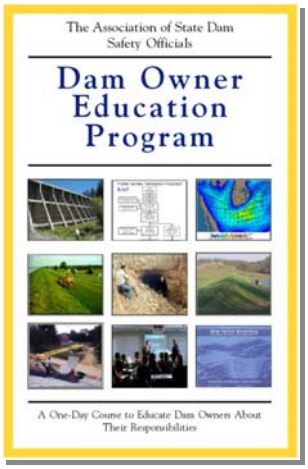
Pennsylvania State Dam Repair Funding Bill

Work progressed slowly but continued to develop a dam rehabilitation funding program within the Pennsylvania Division of Dam Safety. The NJ/PA Council for Safe Dams is helping to provide data to support the program. ASDSO began to craft letters of support for the new endeavor.

Goal #6: - Provide quality and effective outreach programs

Dam Owner Education Program

FY07 marked the sixth year for the ASDSO Dam Owner Education "road-show." Owners from six states attended the ASDSO one-day workshop during the reporting cycle:



Illinois – July 27, 2006. Taught by Dan Marks (Marks Enterprises).

New England -- September 12, 2006 in Boston, Massachusetts. Participants from Massachusetts, Vermont, and New Hampshire. Taught by Phil Moreschi, Fuss & O'Neill)

Louisiana – October 4, 2006. Taught by John Rutledge (Freese & Nichols)

Rhode Island – October 24, 2006. Taught by Phil Moreschi

Texas - The state of Texas partnered with John Rutledge to conduct five dam owner workshops across the state in the summer – early fall of 2007.

New workshops are being planned for the FY08 planning year. In the queue are Nevada, Washington, Michigan, Virginia, South Carolina, and Montana.

The workshop is designed to provide practical, straightforward information on topics of importance to anyone that owns or operates a dam. Topics focus on the following:

- State dam safety laws and regulations
- Dam failure modes and case histories
- Owner responsibilities and liabilities
- Dam operations, maintenance, and inspections
- Developing and implementing emergency action plans
- Potential sources of funding for remedial dam repair, design and construction
- Dam repair projects

Thanks go to the National Dam Safety Program and FEMA for underwriting a portion of this project.

Tools for Dam Owners on the Web

The Dam Owners section of the web site is running and features some downloadable tools and basic information on dam ownership. The site has a special owners section in the "Members Only" section and more tools in the general section.

Promotion of Dam Engineering as a Profession

Undergraduate Scholarship

The Scholarship Committee was pleased to announce in FY07 that funding for undergraduate scholarships would double thanks to the generous support of ASDSO's Patron donors. Three winners were given $3,000 scholarships for the 2006-07 school year. They were (pictured from L to R):

Nathan Chase, Northeastern University,

Corey Clark, University of Maine, and

Ian Toohey, University of Oklahoma,

(pictured at right with Scholarship Committee Chair John Moyle.)

As the fiscal year drew to a close, the Scholarship Committee and the Board of Directors awarded two winners for the 2007-08 scholarship. They are

Salvador Varela, a Construction Management major at Boise State University.

Josh Goodall, a Civil Engineering major at Oregon State University.

Each will receive a $5,000 scholarship and a trip to Dam Safety '07.

Committee on Educational Outreach

Speakers' Bureau – In order to stimulate student interest in careers in dam safety, the Committee on Educational Outreach is spearheading the effort to develop an ASDSO Speakers Bureau. The CEO has recruited several volunteer speakers and welcomes others. Volunteers may use a PowerPoint presentation geared toward university students, developed by Beth Cooper of Kansas Dam Safety, or may use ASDSO's public awareness presentation (*Dam Safety: A National Concern*). A web page for the Speakers Bureau is under construction.

Internships/Jobs Clearinghouse – A tool for posting internships has been added to the new ASDSO website. The tool works in the same way as the Employment listings database, but users can post internships at no charge, while there is a $10 per month charge for posting employment positions. Both databases are fully searchable.

ASDSO Austin Conference - The 2007 conference will feature three student presentations and a hospitality booth for students. Ten university students, including ASDSO's three 2006-2007 scholarship winners, attended Dam Safety 2006 and more are expected at Dam Safety 2007.

National Science Foundation Proposal – Work on the proposal, drafted by Dan Marks, is substantially complete. Sarah Mayfield has been in communication with NSF officers in Hydrology and Engineering. The Hydrology program referred the proposal to Engineering, but the Engineering program funds research activities only. Sarah and CEO Chairman Bruce Tschantz will re-contact the Hydrology officer for advice about making the proposal more attractive to that group, which does fund student attendance at conferences. The proposal requests funding for ASDSO conferences beginning in 2008.

E-Day 2007

On February 24, ASDSO participated at the University of Kentucky's annual Engineering Day. Several hundred students of all ages attended the event, and several dozen took part in a dam building activity at the ASDSO booth. A local middle school represented at E-Day invited ASDSO staff to make a classroom presentation on dams and careers in engineering and dam safety.

Goal #7: Create a unified community of dam safety advocates through membership in ASDSO.

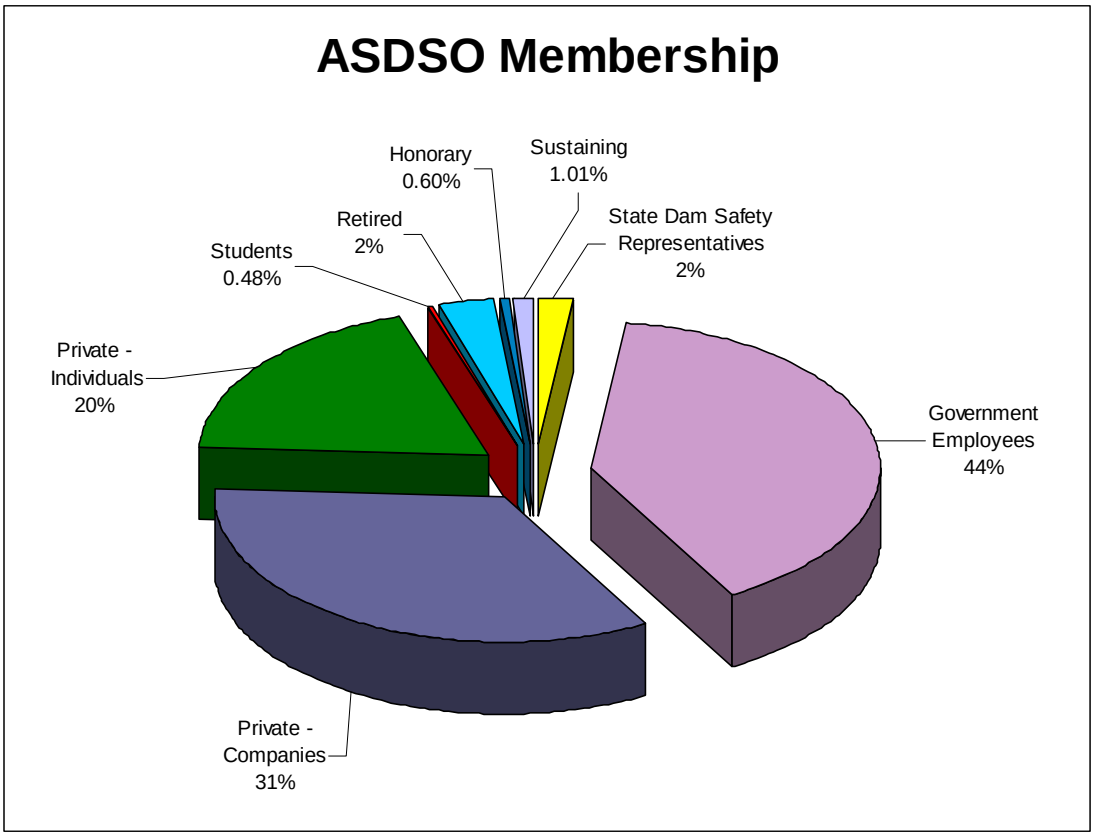
ASDSO Membership

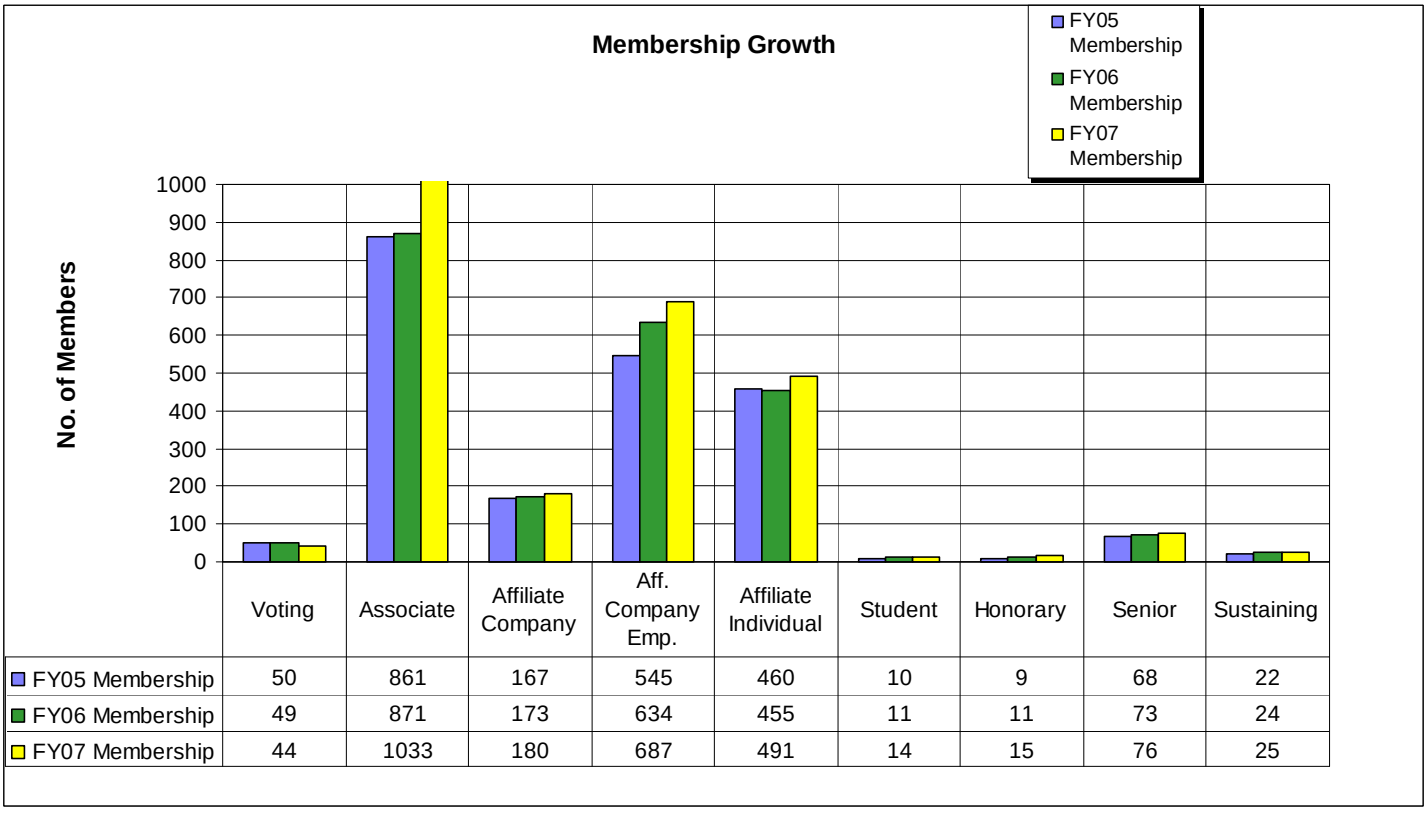
The 2006-07 membership campaign has concluded with the following results:

	FY04 (Final)	FY05 (Final)	FY06 (Final)	FY07 (Final)
Full Voting	50	50	46*	44**
Associate	898	853	871	1033
Affiliate				
Company	194	171	173	180
Company Employee	505	556	634	687
Individual	422	438	455	491
Student	8	14	11	14
Honorary	10	11	11	15
Senior	58	71	73	76
Sustaining	21	22	24*	25**
Total	2166	2186	2298	2565

** Five of the Sustaining Members are states. Missouri, Pennsylvania, Ohio, New Jersey, and California.

- 478 new members joined in FY07.





	Voting	Associate	Affiliate Company	Aff. Company Emp.	Affiliate Individual	Student	Honorary	Senior	Sustaining
FY05 Membership	50	861	167	545	460	10	9	68	22
FY06 Membership	49	871	173	634	455	11	11	73	24
FY07 Membership	44	1033	180	687	491	14	15	76	25

Membership/Volunteerism

Many types of ASDSO members are participating on committees. A current roster is included in Appendix A. Additional committee reports are included under different goals.

Focus on New Members (Submitted by Sky Medors, Chair)

The Membership Committee has had a very busy "first year." One of our first activities will include the "Meet and Greet", launched in 2006 and scheduled for Monday morning at the annual conference in Austin in 2007. The main purpose of this event is to give a brief overview of the Association and to let the new/young members know where they can go get any questions that they may have answered. At this event the attendees will be introduced to the Membership Committee, the Lexington staff, and Executive Officers. We will then explain the mission and goals of the organization and offer suggestions on how new/young members can get involved in the Association. An email survey will be sent out following the annual conference to gauge the effectiveness of the event.

A New/Young Member Breakfast will be held Tuesday morning at the Annual Conference. In addition to new/young members, other members of the Association will be invited in order to encourage interaction of the new/young members with the Membership Committee, Executive Board members, and select association members. The goal for this event is to help new members become connected to the association and its "veteran" members.

In addition to the activities planned at the Annual Conference, the Membership Committee continues to work on developing a mentoring program. A note was included in the May 2007 ASDSO E-News requesting that anyone interested in participating in a mentoring program get in contact with the Committee. This inquiry was an attempt to gauge the interest level of the members in order to determine if a mentoring program will be beneficial. The responses will be evaluated after the annual conference.

Next year the committee plans to continue, if the membership interest warrants, the development of the mentoring program. Another goal for next year is to have the new member packets updated. We will also evaluate the effectiveness of the functions that will be held at the 2007 Annual Conference to determine if they should continue or if other activities could be more effective in achieving the goals listed in our committee charter.

The Affiliate Member Advisory Committee (AMAC)

The AMAC is a select group of private sector (Affiliate) members who have had outstanding careers and experience in dam safety related fields. This 27-member group provides expert advice to the ASDSO Board and continues to through its work on many of ASDSO's most important projects and programs.

This past year the Board elected Joe Kula (URS Corp.), Paul Schweiger (Gannett Fleming), and Robert Bowers, (O'Brien & Gere) to the AMAC membership.

Joe Kula

Paul Schweiger

Bob Bowers

AMAC reps are chairing the following committees:

-Keith Ferguson, Journal Editorial Committee
-George Mills, Owner Education Committee
-Randy Bass, Technical Training Committee
-Bill Bingham, Peer Review Committee and a task force to update the "National Concern" brochure

The AMAC agreed to create and administer a new award to honor recently deceased member Terry Hampton. Gannett Fleming has donated $2,000 toward

development of a medal. The AMAC is studying the establishment of a CEU (continuing education units) program for ASDSO training seminars.

Awards/Recognition

Recognition Program

2006 National Rehabilitation Project of the Year: Gannett Fleming, Inc. for Loch Raven Dam

Loch Raven Dam is a 131-foot high, 700-foot long concrete gravity structure owned by the Baltimore Department of Public Works. The dam impounds approximately 23-billion gallons of water in the Loch Raven Reservoir, the "crown jewel" of the water supply system for the greater Baltimore region.

From L to R: Paul Schweiger (Gannett Fleming), Bill Bingham (Gannett Fleming), President Smith, Rod Holderbaum (Gannett Fleming), Brad Iarossi (Maryland-retired), Gordon Warren (Gannett Fleming).

A failure of the dam would jeopardize the lives of more than 3,000 people, public and private property, and vital infrastructure,

Accordingly, Maryland regulations require that Loch Raven Dam safely pass the probable maximum flood (PMF). When evaluated against this criterion, two major deficiencies were noted: inadequate factors of safety for structural stability, and insufficient spillway capacity. Maryland Dam Safety directed the City of Baltimore to rehabilitate or remove the dam.

City officials quickly concluded they had no choice but to rehabilitate the dam. They selected Gannett Fleming to design a solution that would increase the dam's stability and confine PMF overflow to the 288-foot-wide spillway. To this end, Gannett Fleming decided to increase the structure's mass, install rock anchor, and raise non-overflow sections of the dam.

Of prime concern during the development process was the reservoir's essential function of supplying water for nearly a million people. Building a new structure downstream was not an option, nor was an alternative to widen the spillway. The solution: Renovate the dam in two steps, one half at a time, while maintaining normal capacity.

Throughout the three-year project, the contractor faced formidable challenges. Unusually frequent and heavy rainfalls caused overtopping of the spillway, complicating the diversion scheme. All work took place in a pristine watershed environment, in compliance with stringent regulations and under close scrutiny from the surrounding communities. In spite of these complexities, the project was completed five months ahead of schedule and $500,000 under budget.

The project was a great cooperative effort. The Maryland Dam Safety Program required the City to conduct additional investigations and to make needed repairs. The City, Gannett Fleming, and the ASI/Cianbro JV team created an excellent design and construction project. All performed their jobs admirably, and all deserve credit for the project's success.

2006 National Award of Merit – Michael Grounds, Beacon Resources

Jim Gallagher (Incoming president) (L) gives the award to Mike Grounds.

The National Award of Merit is ASDSO's most prestigious award, given to individuals who have advanced the dam safety cause nationwide. For his recognition of the importance of and exigent necessity for a strong National Dam Safety Program and his interest in the nation's critical dam infrastructure and security needs, the ASDSO Board of Directors is pleased to confer this award to Michael Grounds of Beacon Resources.

Mr. Grounds has 30 years of experience in systems engineering specializing in developing customized systems and in providing value-added customization to Intergraph's standard commercial products to implement specialized workflows for Government

customers. For the past 16 years this work has primarily been with the US Army Corps of Engineers.

In support of the National Dam Safety Review Board (NDSRB) and the Interagency Committee on Dam Safety (ICODS), Mr. Grounds is developing software tools to assist States and Federal Agencies with their dam safety program management. These tools can be used to provide simple, unbiased data that are useful separately and/or collectively to evaluate how well dam safety programs are being implemented at the National, State and/or Federal Agency level.

2006 President's Award: John Ritchey

President Smith (L) with John Ritchey.

The ASDSO President's Award is given to someone who made a significant contribution to helping the President through the year. Outgoing ASDSO President, Kenneth E. Smith, of the Indiana Department of Natural Resources, chose John Ritchey, Supervising Engineer with the New Jersey Department of Environmental Protection for this honor.

Smith characterized Mr. Ritchey as "a volunteer who has consistently done his job well, needing so little direction that I didn't ever need to worry."

Over the years, Mr. Richey has served on several ASDSO committees and task groups, including the NDSRB Research Workgroup and the Committee to Develop a Report on the National Cost of Dam Rehabilitation. For the past two years he chaired the annual conference program committee, and served as both an exemplary moderator and audio-visual and technical support coordinator. He has also worked tirelessly on behalf of the NJ-PA Council of Safe Dams, including organizing several of the council's northeast regional conferences.

Northeast Regional Award of Merit: New Hampshire Governor John Lynch

The Honorable John H. Lynch, Governor of the State of New Hampshire, has been selected by the Northeast Region to receive its 2006 Regional Award of Merit. This award is in recognition of his strong, decisive, and compassionate leadership during New Hampshire's two natural disasters over the past year and his long-term commitment to improve dam safety in the state.

In October 2005 and again in May 2006, New Hampshire was hit by devastating floods that exceeded 100-year frequency levels. During both of these disasters and in their immediate aftermath, Governor Lynch took quick and decisive action, repeatedly visiting the affected communities, meeting with local officials, and personally directing the work of state agencies, including the Department of Environmental Services (DES) Dam Bureau. His attention ensured that everything possible was done to help the communities respond to the flood events and recover.

Governor Lynch also saw first-hand the threat posed by floodwaters overtopping dams during these events. This experience convinced him of the necessity to proactively manage this threat in order to protect the public and minimize flood damages. Declaring prevention of dam failures and incidents as a priority, the Governor personally directed his staff and the DES to identify ways to improve New Hampshire's Dam Safety Program. He has firmly committed to work with the New Hampshire legislature and state agencies to provide additional resources to make New Hampshire's Dam Safety Program a national model.

When fully implemented, Governor Lynch's initiative will increase the number of dams inspected each year; step up enforcement to correct dams with identified deficiencies; and ensure the proper operation, maintenance, and repair of state-owned dams into the future.

Southeast Regional Award of Merit: Jim Simons

Incoming president Jim Gallagher (left) with Jim Simons.

James D. Simons, PE, PG, has worked for the North Carolina Division of Land Resources for more than thirty-two years. During most of this time he has been involved with dam safety at the state, regional, and national levels.

As State Dam Safety Engineer in North Carolina from 1985 to 1991, Mr. Simons reviewed all plans to construct, repair, modify, or breach state-regulated dams. He pursued enforcement against dam owners who were non-complaint, and provided training and guidance in dam safety inspection and emergency response to employees of the Land Quality Section.

Mr. Simons was the Chief Engineer of the Land Quality Section from 1991 until 2002. In this position he was in charge of the seven regional offices that inspect state regulated dams.

Since 2002, Mr. Simons has been State Geologist and Director of the Division of Land Resources. As such, he is in charge of all aspects of the State Dam Safety Program in North Carolina.

Mr. Simons has been involved with the Association of State Dam Safety Officials for most of his career. He served as ASDSO President in 1994-1995, and on the ASDSO Board of Directors from 1991 to 1996. From 2000-2005, Mr. Simons also served as an ASDSO representative on the FEMA National Dam Safety Review Board. Currently, he is on the Peer Review Committee.

Midwest Regional Award of Merit: Eric Hand and Ken Leiser, St. Louis Post-Dispatch

ASDSO's Midwest Region is deeply grateful to two writers for their persistent efforts on behalf of the people of Missouri.

St. Louis Post Dispatch Science and Environment writers Eric Hand and Ken Leiser have worked diligently to inform the public about the importance of stringent safe dam safety regulations. Their intelligent consideration of the issues and people involved helped raise public awareness of potential threats posed by dams, and the state's role in ensuring public safety.

According to a Missouri official, "These two reporters were instrumental in increasing the public's knowledge of dam safety issues and the problems associated with levees in the U.S. They are to be commended for their thorough research and accurate reporting of these complex issues."

Alexander notes that, "Although the Legislature ultimately decided to retain some regulatory exemptions that we oppose, the efforts of Mr. Leiser and Mr. Hand have applied pressure to Missouri's elected officials to address needed changes to the state's Dam and Reservoir Safety Law."

West Regional Award of Merit: US Bureau of Reclamation and Bruce Barrett, Provo Area Manager

Representatives of ASDSO's West Region laud the U.S. Bureau of Reclamation for its positive impact on state regulated projects, particularly the major rebuild and enlargement of Big Sand Wash dam in Utah.

The significant expertise of Mr. Bruce Barrett, USBR Manager for the Provo Area, was instrumental in the project, designed by the consulting firm of CH2MHill. Mr. Barrett was on the design review team, and the Bureau performed all on-site construction inspection and quality assurance testing.

Raising the existing 112-ft-tall dam by 26 feet, to a height of 138 feet doubled the reservoir capacity, from 12,000 acre-feet to over 24,000 acre-feet, allowing the transfer of water storage from lakes in the high Uinta Wilderness to the enlarged reservoir.

The Bureau has worked with the Utah State Engineer's office to design stabilization solutions for these Wilderness dams and will use their own "in-house" construction crews to perform the work. Three of these projects are now underway.

The Bureau has also been actively involved in numerous projects that have improved dam safety in Utah and other western states. Recent projects include seepage reduction at Upper Stillwater, seismic stabilization of Pine View and Deer Creek dams, and rehabilitation of the Hyrum Dam spillway, all in Utah; and the rehabilitation of City Dam, the "number 1 priority" unsafe dam in Arizona. The Bureau's full-time on-site construction services are essential to the success and completion of the project.

Honorary Members

Four new honorary members were elected this year:

- Charles Karpowicz (retiring from the National Park Service)
- Constantine "Gus" Tjoumas (retiring from the Federal Energy Regulatory Commission)
- Bill Irwin ((retiring from the Natural Resources Conservation Service)
- George Mills (retired from the State of Ohio), Past ASDSO President and Current Owner Education Outreach Committee Chair

Tjoumas, Karpowicz and Irwin were honored at a recent National Dam Safety Review Board meeting in Washington, DC. Mills will be honored at the 2007 Awards Banquet during Dam Safety '07.

Pictured are Executive Director Lori Spragens, Charles Karpowicz, Bill Irwin, Gus Tjoumas and ASDSO President Jim Gallagher (NH).

Goal #8: - Managing the association effectively through internal policies and procedures.

ASDSO Leadership

Transitions

Board

During the annual conference in September, the state voting members elected new officers and new regional representatives to sit on the Board of Directors. The 2006-07 officers include the following:

- President: Jim Gallagher, New Hampshire
- President-Elect: Mark Ogden, Ohio
- Treasurer: Steve Bradley, South Carolina
- Secretary: Rob Martinez, Nevada

These officers, along with immediate past president Ken Smith (Indiana) and executive director Lori Spragens made up the Executive Committee in 2006-07.

Thanks go to outgoing president Ken Smith for his outstanding contribution and extensive time devoted over 2005-06 to ASDSO.

New Board members elected in 2006 include the following:

- James MacLellan (Mississippi), serving out the term vacated by Steve Partney (Florida)
- Max Fowler (North Carolina) (representing the Southeast Region)
- Jack Byers (Colorado) (representing the West Region)
- Doug Johnson (Washington), serving out the term vacated by Jason Boyle (North Dakota)

The following members were elected to another term:

- Bob Finucane (Vermont) (representing the Northeast Region)
- Ken Smith (Indiana) (representing the Midwest Region)
- Rob Martinez (Nevada) (representing the West Region)

These elected officials join the following members to complete your Board of Directors:

- John H. Moyle (New Jersey) (representing the Northeast Region)
- Jim Gallagher (New Hampshire) (representing the Northeast Region)
- Jim Alexander (Missouri) (representing the Midwest Region)
- Steve Bradley (South Carolina) (representing the Southeast Region)
- Dave Gutierrez (California) (representing the West Region)
- Mark Ogden (Ohio), (president-elect)

AMAC Chair Randy Bass (Schnabel Engineering) sits on the Board representing the AMAC. AMAC Chair-Elect John France (URS Corp.) also attended meetings on behalf of the AMAC.

State Representatives

Florida's new state rep is Fred Noble, P.E. Mr. Noble replaced interim rep John Coates, who served for a short time after Steve Partney took a position with the South Florida Water Management District.

Charles D. Galloway, P.E., Chief of the Resource Protection Bureau, Idaho Department of Water Resources, was appointed ASDSO state rep for Idaho, replacing Mike Stubblefield.

In Oklahoma, Walid T. Maher was appointed state rep to fill the spot vacated by Cecil Bearden, who retired from state service in February.

Jason Boyle, formerly of the North Dakota State Water Commission, took a position with the Minnesota Department of Natural Resources, and was appointed the new Minnesota ASDSO state rep.

Taking Jason's place as the new North Dakota state rep was Jonathan Kelsch, Engineer/Manager of the Water Development Division.

Jason Campbell has been appointed the state rep for Illinois, replacing longtime member Paul Mauer, who will remain as the Senior Geotechnical Engineer for Illinois Dam Safety.

A familiar face has stepped in as interim state rep in Oregon. Barry Norris will serve as the Oregon state rep until a replacement for John Falk is appointed. John has moved and taken a position with the Idaho Department of Water Resources.

ASDSO Nominations Committee

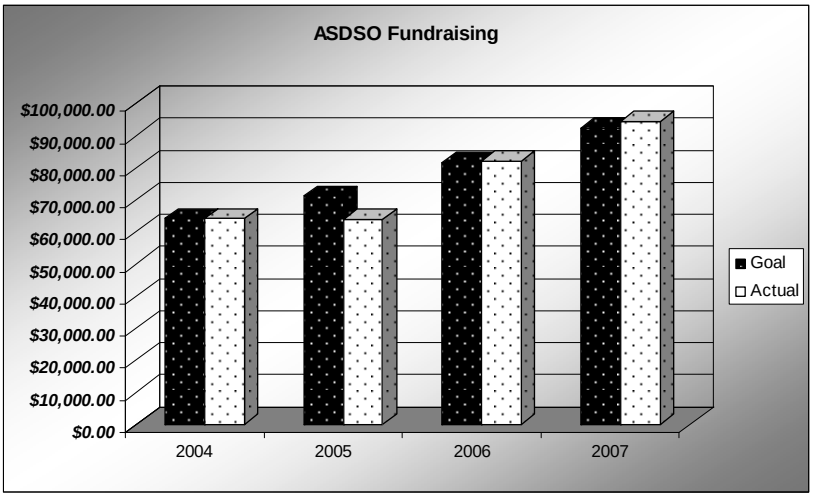
The Nominations Committee (Ken Smith, Chair) was formed in early 2007 to identify potential candidates for future office (from 2007-08). At the summer Board meeting, the committee nominated the following individuals for officers' positions in 2007-08:

President: Mark Ogden, OH
President-elect: Rob Martinez, NV
Treasurer: David Gutierrez, CA
Secretary: Bob Finucane, VT

The State Voting Representatives will consider these nominations at the Annual Business Meeting in September 2007.

Finance Committee

The Finance Committee oversaw a very successful year with fundraising exceeding goals for the year. The 2006-07 campaign generated a record-breaking $27,000 in donations and $62,500 in sustaining memberships. The ASDSO Silent Auction, *Dam Bidness*, held at Dam Safety '06 in Boston was a resounding success, generating over $5,000.



Patron donations are going toward the following goals:

- Undergraduate scholarships and student outreach—More than 33 scholarships have been given out over the history of the program. The Scholarship Fund was doubled in size last year to $10,000, and ASDSO gave three scholarships out in 2006.
- An expanded college student outreach and recruitment program.
- Financial independence from federal support.
- Networking & information exchange
- The quarterly *Journal on Dam Safety*, now in full color.
- An expanded national public awareness and media education program

See Appendix D for a list of 2006-07 Patron Donors and Sustaining Members.

FY2007 Action Plan

Out of the 31 action items described in the FY2007 Action Plan, 28 were complete or underway at the end of the year.

Budgeting and Income

An un-audited statement of revenues and expenditures is included in Appendix F. During FY07, ASDSO signed or carried out project contracts with the following:

- DHS, FEMA (National Dam Safety Program projects): FFY05 total: $620,588. FFY06 total: $718,543.
- US Army Corp of Engineers Tech Center (coordination of state data collection): $19,500 beginning in FY05 each year through FY09
- State of Florida (2007 technical seminar): $55,000
- State of Illinois (dam owner workshop): $10,000

ASDSO is a GSA Multiple Award Schedule contractor.

Minutes from Board meetings and the Annual Business Meeting for State Representatives are available at the ASDSO website. All other committee meetings and regional caucus meetings minutes are available upon request.

Appendix A

ASDSO Committees, Task Forces and Liaisons

ASDSO STANDING COMMITTEES

Affiliate Member Advisory Committee
Affiliate Member Advisory Committee: The AMAC is a technical advisory committee, made up of private sector members. Members are chosen by the ASDSO Board of Directors.

Randy Bass, Chair, Schnabel Engineering, GA
John France, URS Corp. CO, Vice-Chair
Terry Arnold, MWH America, CO
Bill Bingham, Gannett Fleming, PA
Bob Bowers, O'Brien & Gere
Bob Dalton, Vasconcelles, IL
Al Davis, Independent Consultant, NH
Eric Ditchey, McCormick Talyor, NJ
Dave Eichelberger, Christopher R. Burke Engineers, IN
Keith Ferguson, Kleinfelder, CO
Craig Findlay, Findlay Engineering, ME
Steve Fry, Avista Corp., WA
John Garland, Brazos River Authority, TX
Tom Kelly, Independent Consultant, CA
Joe Kula, URS Corp., Gaithersburg, MD
Marty McCann, Jack R. Benjamin & Associates, NPDP, CA
Art Miller, Penn State University, PA
Don Millikan, Southern California Edison Co., CA (retired)
George Mills, GEM Consulting, OH
Carl Montana, French & Parrello, NJ
Karl Myers, Piedmont Geotechnical Consultants, GA
Kurt Rinehart, Miami Conservancy District, OH
Richard Rudolph, Xcel Energy., WI
John Rutledge, Freese & Nichols, TX
Mel Schaefer, MGS Engineering Consultants, WA
Paul Schweiger, Gannett Fleming
Steve Snider, Tectonic Engineering & Surveying, NY
Ed Tomlinson, Applied Weather Associates, CO
Jim Weldon, Denver Water Board, CO

Subcommittee to Update the "National Concern" brochure

Bill Bingham, Gannett Fleming
Marty McCann, Jack R. Benjamin
Richard Rudolph, Excel Energy
John Rutledge, Freese & Nichols
Art Miller, Penn State

Annual Conference Program Committee

2007
John Ritchey, New Jersey, Chair
John France, URS Corp.
Eric Halpin, USACE
Eric Ditchey, McCormick Taylor
Michele Lemieux, Montana
Matt Lindon, Utah
Greg Hanson, Ag. Research Center (Dept. of Ag)

Annual Awards Committee

Tim Schaal (Chair), South Dakota
Bob Finucane, Vermont, Northeast Region
Lyle Bentley, Tennessee, Southeast Region
Bob Dalton, Illinois (Retired), Midwest Region
Jason Boyle, North Dakota, West Region (now MN)
John Falk, Oregon, West Region
Cecil Bearden, Oklahoma, West Region (retired) (alternate)

Constitution & Bylaws Committee

Brian Long, Chair, West Virginia
Jim Gallagher, New Hampshire
Ed Fiegle, Georgia
Dave Gutierrez, California
Jim Leumas, City of Raleigh, NC
Ken Smith, Indiana
Jim Alexander, Missouri
Bill Jenkins, Arizona
Charles Cobb, Alaska
Elaine Pacheco, New Mexico

Dam Owner Outreach Advisory Committee
Development Committee: Will develop the curriculum and program to send education coordinators out to train dam owners. Will develop other outreach tools for owners.

George Mills, Chair
Richard DeBold, New Hampshire
John Moyle, New Jersey
Raul Silva, Massachusetts
Brad Iarossi, US Fish & Wildlife Service

Finance Committee
Standing committee to have oversight over financial management and to develop and oversee a fundraising program.

Steve Bradley (Chair), South Carolina
Mark Ogden, Ohio
Jim Gallagher, New Hampshire
Ken Smith, Indiana
John France, URS Corp., Colorado
Eric Ditchey, McCormick Taylor, New Jersey
Matt Lindon, Utah
Dave Eichelberger, Christopher Burke Engineering, Indiana
Meg Galloway, Wisconsin
Rob Martinez, Nevada

Legislative Activities
ASDSO committee charged with developing and monitoring programs to support federal legislation advancing dam safety.

Brad Iarossi, Chair
Jim Gallagher, New Hampshire
John Moyle, New Jersey
John Falk, Oregon
Raul Silva, Massachusetts
Meg Galloway, Wisconsin
Cecil Bearden, Oklahoma (retired)
Dan Lawrence, Maricopa County, AZ
Eric Ditchey, McCormick Taylor, NJ
John Ritchey, New Jersey
Ken Smith, Indiana
George Mills, GEM Consulting
Joe Kula, URS

Membership Committee

Sky Medors (Chair), Lawson-Fisher
Jason Boyle, MN
Chrissy Ferrazzano, Schnabel Engineering
Visty Dalal, Maryland

Officers Nomination Committee
Meets during the winter months of the fiscal year to determine the next year's slate of officers. Makes recommendations to the Board at the summer meeting.

Ken Smith, chair, Indiana
Jim Gallagher, New Hampshire
Matt Lindon, Utah
Max Fowler, North Carolina
Mark Ogden, Ohio

Outlet Works Committee

Chuck Cooper, Reclamation

Peer Review Committee
Pool of team members trained and experienced in providing peer review for state, federal or private dam safety programs.

Bill Bingham, Chair, Gannett Fleming Engineers
Carl Montana, French & Parello (Consultant)
Jim Weldon, Denver Water (Owner)
Tom Kelly, Southern Cal Edison (Owner - retired)
George Mills, Ohio (State-retired)
Jim Simons, North Carolina (State)

Peer Review Team Pool

Panel of Peer Reviewers

Consultants

Mr. Terry Arnold, Senior Project Manager, MWH America, Denver, CO
Mr. Randall P. Bass, P.E., Senior Associate, Schnabel Engineering South LLC, Alpharetta, GA
Mr. William B. Bingham, Vice President, Gannett Fleming Inc., Harrisburg, PA
Mr. Eric J. Ditchey, P.E., Project Manager, McCormick, Taylor & Associates, Mount Laurel, NJ
Mr. Ron M. Lemons, Senior Vice President, Freese & Nichols, Inc., Fort Worth,TX
Mr. Carl J. Montana, Senior Vice President, French & Parrello Associates, P.A., Wall, NJ
Mr. Alton P. Davis, Jr., President, Alton P. Davis, Jr. Engineering Consulting, West Ossipee, NH

Dam Owners

Mr. Thomas A. Kelly, P.E., (Formerly with) Southern California Edison Company, West Hills, CA
Mr. Larry K. Lambert, Project Manager, Flood Control Dist. Of Maricopa County, Phoenix, AZ
Mr. Richard M. Rudolph, P.E., Supervisor/Hydro Engineering, Xcel Energy, Eau Claire, WI
Mr. James H. Weldon, Engineering Manager, Dam Safety, Denver Water Department, Denver, CO
Mr. John Cima, Consulting Engineer, Dominion Resources Services, Inc., Glen Allen, VA

State Dam Safety Officials

Mr. David A. Gutierrez, Chief, California Dept. of Water Resources, Division of Safety of Dams, Sacramento, CA
Mr. Greg Hammer, Sr. Professional Engineer, CO Division of Water Resources, Greeley, CO
Mr. Dan R. Lawrence, P.E., (Formerly with the) Arizona Department of Water Resources, Phoenix, AZ
George E. Mills, (Formerly with the) Ohio Dept. of Natural Resources, Division of Water Engineering) Pickerington, OH
John Moyle, Manager, NJ Department of Environmental Protection, Dam Safety Section, Trenton, NJ
John Ritchey, Supervising Engineer, NJ Department of Environmental Protection, Dam Safety Section, Trenton, NJ
James D. Simons, P.E., Chief Engineer, NC Department of Environmental & Natural Resources, Land Quality Section, Raleigh, NC
Stephen W. Verigin, (Former) Chief Deputy Director, CA Department of Water Resources, Sacramento, CA

Specialized Pool (US Federal & Canada)

Ms. Mona Bechai, Principal, MOBEC Engineering, 288 Lawrence Avenue East, Toronto, Ontario, M4N 1T7,Canada,416/488-1924,416/488-3580,mobec@sympatico.ca
Mr. Barry Hurndall, Director, BJH Engineering Ltd., 6330 - 112th Street, Edmonton, Alberta,,T6H 3J6,Canada,780/432-7236,,bhurndal@telusplanet.net
Mr. Gary M. Salmon, 1251 Clyde Avenue, West Vancouver, B.C.,,V7T 1E6,Canada,604/922-8235,,gmsalmon@attcanada.ca
Mr. Daniel J. Mahoney, Deputy Director, Div of Dam Safety & Inspections, Federal Energy Regulatory Comm.,888 - 1st Street N.E., Rm. 6A-11,,Washington,DC,20426,USA,202/502-6743,202/219-2731,daniel.mahoney@ferc.gov
Mr. Arthur H. Walz, Jr., P.E., 939 Glenangus Drive, Bel Air,MD,21015-5601,USA,410/893-3446,410/838-0296,

Retired reviewers
Marty Stralow
George Austin
Cat Cecilio
Jack Healy
Joe Ellam (deceased)
Alan Pearson

Other
Chris Veesaert did BC Hydro

Scholarship Committee
ASDSO committee charged with recommending undergraduate scholarship winners.

John Moyle, Chair, New Jersey
Carl Montana, French & Parello
Raul Silva, Massachusetts
Jeris Danielson, Danielson & Associates
George Mills, GEM Consulting

Regional Reviewers
NE: Bob Finucane
SE: James MacLellan
MW: Jim Alexander
W: Jack Byers

Security Committee

John Moyle, Chair, New Jersey
Rich Sanchez, California
Keith Banachowski, Ohio
Doug Johnson, Washington
Carl Montana, Schnabel Engineering, New Jersey
Bill Foos, Foos & Associates, Washington, DC
Daniel Rodriquez, US, Army Corps of Engineers
Martin Chavira, US, Bureau of Reclamation
Frank Calcagno, US, FERC

Student Education Outreach Committee

Bruce A. Tschantz, Chair, Prof. Emeritus, Knoxville, TN
Fares Y. Abdo, Portland Cement Assoc., Birmingham, AL
Ken Bosar, Christopher Burke Engr., Indianapolis, IN
Beth Cooper, Kansas Dept. Agr, Dam Safety Program
Meg Galloway, Wisconsin DNR
Bill Irwin, USDA-NRCS, Washington, D.C.
John Livingston, CH2M Hill, Redding, CA
Dan Marks, Schnabel Engineering Consultants, Arden, NC
Marty McCann, Stanford University, Stanford, CA
Nancy McGrath, NH DES
Sky Medors, Lawson-Fisher Assoc., South Bend, IN
Art Miller, ret., Penn State Univ., College Sta., PA
John Moyle, New Jersey DEP
Milton Myers, USACE-WES, Vicksburg, MS
Peter Nicholson, University of Hawaii
Ken Smith, Indiana DNR
Sarah Mayfield, ASDSO staff, Lexington, KY

USSD Liaisons
Donald Basham, USACE, Crestwood, KY
Dan Johnson, MWH, Denver, CO

Technical Journal Editorial Committee
Volunteer editors of the ASDSO Newsletter.

Keith Ferguson, Chair, Kleinfelder
Don Millikan, Southern Cal Ed., retired, CA
Al Davis, Alton P. Davis, Jr. Consulting Engineers
Michele Lemieux, Montana
Jim Gallagher, State of New Hampshire
John France, URS Corp.
Mark Schultz, California

Technical Training Program Committee
Charged with developing and managing a long-term plan and procedures for selecting regional technical seminar topics and instructors.

Randy Bass, Chair, Schnabel Engineering
Paul Schweiger, Gannett Fleming
Dave Gutierrez, California
Rodney Tornes, Ohio

USSD Liaisons to Training
Walt Davis, Seattle City Light
Doug Boyer, Bureau of Reclamation
Dan Mahoney, FERC

TASK FORCES/WORK GROUPS

Levee Safety Work Group

Mark Ogden (Chair), Ohio
Matt Scherer, Kansas
Meg Galloway, Wisconsin
Bo Bolourchi, Louisiana
George Crosby, Indiana
Mike Stankiewicz, New York

Media Outreach Group

Jim Alexander, MO
Lisa Cahill, Watershed Services, Ashland, VA
Scott Cahill, Watershed Services, Ashland, VA
Bob Finucane, VT
Jim Gallagher, NH
Richard Gee, Montgomery Co Dept of Permitting, Rockville, MD
Brad Iarossi, USFWS
Carl Montana, French & Parrello, Wall, NJ
Mark Ogden, OH
Ken Smith, IN
Sarah Mayfield, ASDSO staff

Model Program Update Task Force (Complete)

Dave Gutierrez, CA (Chair)
Mark Ogden, OH
Linda Hyatt, WI
Robert Dalton, Vasconcelles Engineers
Brian Long, WV
John Moyle, NJ
Bill Bingham, Gannett Fleming

CHAPTERS

New Jersey/Pennsylvania Council for Safe Dams
A chapter of ASDSO formed to increase involvement of the owners and consultants in Pennsylvania and New Jersey.

COUNCIL FOR SAFE DAMS EXECUTIVE COMMITTEE

Eric Ditchey, P.E., Chair, McCormick, Taylor & Associates
Thomas Fitzgerald, P.E., Schnabel Engineering Associates, Inc.
David (Dave) K. Burd, Director, Merrill Creek Reservoir
Leo J. Coakley, P.E., P.P., Vice President, Hatch, Mott MacDonald
Keith A. Pytlik, P.E., Senior Engineer/Projects Manager North Jersey District Water Supply Commission
John H. Moyle, PE, Department of Environmental Protection, NJ
John Ritchey, PE, Department of Environmental Protection, NJ
Dennis Dickey, Department of Environmental Protection, PA
Mike Conway, P.E., P.L.S., Department of Environmental Protection, PA
Christopher M. Hager, PE, Langan Engineering
Dick Horvath, Gannett Fleming
Ken Fosnaught, Lake Meade Property Owners Association
Christopher S. Adams, P.E., President, Civil Dynamics, Inc.
Joseph R. Kula, P.E., Vice President, URS Corporation
Anthony L. Fernandes, P.E., Manager, Engineering, Design & Construction, Aqua Pennsylvania, Inc.
Rodney E. Holderbaum, P.E., Vice President, Gannett Fleming, Inc.
John Harrison, P.E., Schnabel Engineering

LIAISONS WITH OTHER ORGANIZATIONS AND OUTSIDE COMMITTEE REPRESENTATION

ASCE Environment and Water Resources Institute Liaison

Meg Galloway, Wisconsin

Levee Issue
Mark Ogden, Ohio

National Dam Safety Review Board
Organized by the NDSPA, ASDSO has five positions on this Board appointed by FEMA.

Laurence Siroky, Montana
Ken Smith, Indiana
John Moyle, New Jersey
Brian Long, West Virginia
Jack Byers, Colorado

National Hydropower Association

pending

National Watershed Coalition Liaison
One person to coordinate with the NWC, attend meetings on behalf of ASDSO. Report back to ASDSO Board and carry Board direction to the NWC.

NDSPA NID Work Group
ASDSO representatives to the NDSPA National Inventory of Dams Subcommittee.

Tony Niles, Chair, Corps
Tom Woosley (ASDSO/MT)
Jim Alexander (ASDSO/MO)
Tim Schaal (ASDSO/SD)
Dave Simon (FERC)
Mark Locke (USDA/NRCS)
Gene Zeizel (FEMA)

NDSPA Research Work Group
ASDSO representatives to NDSPA Research Subcommittee.

Bruce Muller (chair), Reclamation
Hal Van Aller (ASDSO/MD)
John Ritchey (ASDSO/NJ)
John Vrymoed, (ASDSO/CA)
William Myers (USACE)
Darrel Temple (USDA/ARS)
Dan Mahoney (FERC)
Gene Zeizel (FEMA)
Jon Phillippe (Alternate)
Jason Boyle, ND (Alternate)
Bob Dalton (Private Sector)

NDSPA Training Work Group
ASDSO is represented on the federal training subcommittee under the National Dam Safety Program. This subcommittee is responsible for developing training programs under the NDSP's training mandate. The subcommittee will also be the National Training Workshop task force, which will develop the topic agenda, and all necessary elements of the annual national dam safety training workshop. To be held at Emmitsburg every February.

Larry Siroky (ASDSO/MT), Chair
Dan Rodriquez, Corps
Joe Bills (FEMA)
Gene Zeizel (FEMA)
Paul Shannon (FERC)
Rodney Tornes (ASDSO/OH)
Steven Bradley (ASDSO/SC)
Chris Veesaert (BoR)
Francisco Silva-Tulla (Private Sector)

NDSPA Performance Measures Work Group

Ed Laatsch (chair), FEMA
Rita Henry (FEMA)
Gene Zeizel (FEMA)
Gus Tjoumas (FERC)
Anthony Niles (USACE)
Tommy Schmidt (USACE)
Bob Finucane (ASDSO/VT)
Mark Ogden (ASDSO/OH)
Charlie Cobb (ASDSO/AK)
Lori Spragens (ASDSO)
John France (Private Sector)
Mike Grounds (Private Sector)

DHS Dams Sector Government Coordinating Council

John Moyle (ASDSO/NJ)
Doug Johnson (ASDSO/WA)
Keith Banachowski (ASDSO/OH)
Mike Waggoner (ASDSO/CA)
Alternates
Jack Byers (CO)
Bill Browning (VA)
Pat Diederich (NE)
Dennis Dickey (PA)

DSH Dam Sector Coordinating Council
Lori Spragens, rep. ASDSO

NDSRB Task Group on Emergency Action Planning and Response

Gene Zeizel, DHS/FEMA
Larry Caldwell, Natural Resources Conservation Service
James Demby, DHS/FEMA
Thomas Donaldson, National Oceanic and Atmospheric Administration
National Weather Service, Mark Ferrari, Regional Director, State of New York, SEMO Region II
Mike Grounds, Beacon Resources
Rita Henry, DHS/FEMA
Bill Irwin (retired), Natural Resources Conservation Service
Don Kirkwood, Mine Safety and Health Administration
Steven Knecht, Montana Disaster & Emergency Services
Enrique Matheu, Department of Homeland Security, Office of Infrastructure Protection
Tony Niles, U.S. Army Corps of Engineers
Ken Rakestraw, Department of State, International Boundary and Water Commission
Paul Shannon, Federal Energy Regulatory Commission
Frederick Sharrocks, DHS/FEMA
Laurence Siroky, Montana Department of Natural Resources and Conservation
Kenneth E. Smith, Indiana Department of Natural Resources, Division of Water
David Snyder, Federal Energy Regulatory Commission
Grant Sorensen, Bureau of Reclamation
Don Taussig, Bureau of Reclamation
Gus Tjoumas (retired), Federal Energy Regulatory Commission
Kelvin Wu (retired), Mine Safety and Health Administration

NDSRB Task Group on Risk Criteria

Doug Johnson (WA)
Jack Byers (CO)

USSD Coordination

ASDSO president

NATIONAL DAM SAFETY REVIEW BOARD WORK GROUPS
OCTOBER 2006

Work Group	Chair	Current Membership	Member Affiliation
[1]Research Work Group	Brian Becker (BoR)	Hal Van Aller (ASDSO/MD) John Ritchey (ASDSO/NJ) Jason Boyle (ASDSO/ND) John Vrymoed (ASDSO/CA) William Myers (USACE) Darrel Temple (USDA/ARS) Dan Mahoney (FERC) Gene Zeizel (FEMA) Jon Phillippe (Alternate) Dan Marks (Alternate) Bob Dalton (Private Sector)	Four Federal Reps. Four State Reps. One Private Sector Rep. Two Private Sector Alternates One FEMA Rep.
Training Work Group	Laurence Siroky (ASDSO/MT)	Joe Bills (FEMA) Gene Zeizel (FEMA) Paul Shannon (FERC) Rodney Tornes (ASDSO/OH) Steven Bradley (ASDSO/SC) Bill Bouley (BoR) Francisco Silva-Tulla (Private Sector)	Two Federal Reps. Three State Reps. One Private Sector Rep. Two FEMA Reps.
National Inventory of Dams Work Group	Tony Niles (USACE)	Dave Benner (ASDSO/WY) Jim Alexander (ASDSO/MO) Tim Schaal (ASDSO/SD) Dave Simon (FERC) Mark Locke (USDA/NRCS) Gene Zeizel (FEMA)	Three Federal Reps. Three State Reps. One FEMA Rep.

Task Group	Chair/Lead	Current Membership	Member Affiliation
Emergency Action Planning Task Group	Gene Zeizel	Larry Caldwell (USDA/NRCS) James Demby (USDA/FS) Tom Donaldson (NWS) Mark Ferrari (ASDSO/NY) Mike Grounds (Beacon) Rita Henry (FEMA) Don Kirkwood (MSHA) Steve Knecht (ASDSO/MT) Enrique Matheu (DHS) Tony Niles (USACE) Ken Rakestraw (IBWC) Paul Shannon (FERC) Fred Sharrocks (FEMA) Laurence Siroky (ASDSO/MT) Ken Smith (ASDSO/IN) David Snyder (FERC) Gene Sorenson (BoR) Gus Tjoumas (FERC) Kelvin Wu (MSHA)	12 Federal Reps. 4 State Reps. 3 FEMA Reps. 1 Private Sector Rep.

Task Group/Steering Committee	Chair/Lead	Current Membership	Member Affiliation
Performance Measures Task Group	Fred Sharrocks	Rita Henry (FEMA) Gene Zeizel (FEMA) Gus Tjoumas (FERC) Anthony Niles (USACE) Tommy Schmidt (USACE) Robert Finucane (ASDSO/VT) Mark Ogden (ASDSO/OH) Charles Cobb (ASDSO/AK) Lori Spragens (ASDSO) John France (Private Sector)	Three FEMA Reps. Three Federal Reps. Four State Reps. Two Private Sector Reps.

[1] Brian Becker is acting for Bruce Muller.

		Mike Grounds (Private Sector)	
Risk Categorization Steering Committee	Bruce Muller	Gene Zeizel (FEMA) Bill Irwin (USDA/NRCS) Meg Galloway (ASDSO/WI) John Moyle (ASDSO/NJ)	Two Federal Reps. Two State Reps. One FEMA Rep.
Geotextiles Steering Committee	Gene Zeizel	James Evans (FERC) Steve Reinsch (USDA/NRCS) Eric Halpin (USACE) Mia Kannik (ASDSO/OH)	Three Federal Reps. One State Rep. One FEMA Rep.
Filter Guidance Steering Committee	Gene Zeizel	Gus Tjoumas (FERC) David Pezza (USACE) Eric Halpin (USACE) Steve Reinsch (USDA/NRCS) John France (Private Sector) John Falk (ASDSO/OR)	Three Federal Reps. One State Rep. One FEMA Rep. One Private Sector Rep.
Seepage Surveillance Steering Committee	Gene Zeizel	Gus Tjoumas (FERC) David Pezza (USACE) Eric Halpin (USACE) John France (Private Sector) Lori Spragens (ASDSO) Jerald LaVassar (ASDSO/WA)	Three Federal Reps. Two State Reps. One FEMA Rep. One Private Sector Rep.
Dam Breach Equations Steering Committee	Gene Zeizel	Christopher Thornton (Colorado State University) Brian Becker (BoR) Greg Hammer (ASDSO/CO) Jeff McClenathan (USACE) Ken Fearon (FERC) Pat Diederich (ASDSO/NE) Paul Olson (ASDSO/NM) Jim Gallagher (ASDSO/NH) Jim Alexander (ASDSO/MO)	Three Federal Reps. Five State Reps. One FEMA Rep. One Private Sector Rep.

APPENDIX B

National Dam Safety Program
(Available on the Web at FEMA)

Guidelines for Dam Safety

The Interagency Committee on Dam Safety has prepared and approved the following federal guidelines for federal agency dam owners and regulators. The guidelines may also be used by non-federal dam owners, regulators, and operators.

- Emergency Action Planning for Dam Owners (FEMA 64)
- Earthquake Analyses and Design of Dams (FEMA 65)
- Federal Guidelines for Dam Safety (FEMA 93)
- Selecting and Accommodating Inflow Design Floods for Dams (FEMA 94)
- Glossary of Terms (FEMA 148)
- Hazard Potential Classification System for Dams (FEMA 333)

Technical Manuals and Guides

These manuals and guides provide procedures and guidance for dam specialists and dam owners responsible for the design, construction, inspection, maintenance, and repair of dams.

- Technical Manual for Dam Owners: Impacts of Animals on Earthen Dams (FEMA 473)
- Technical Manual: Conduits through Embankment Dams (FEMA 484)
- Technical Manual for Dam Owners: Impacts of Plants on Earthen Dams (FEMA 534)
- Dam Owner's Guide to Plant Impact on Earthen Dams (FEMA L-263)
- Dam Owner's Guide to Animal Impacts on Earthen Dams (FEMA L-264)
- Conduits through Embankment Dams: Best Practices for Design, Construction, Identification and Evaluation, Inspection, Maintenance, Renovation, and Repair (FEMA L-266)

Research Needs Workshop Reports

Since 1999, National Dam Safety Program (NDSP) research funds have been allocated to workshops in nine priority areas.

- Seepage through Embankment Dams (FEMA 535)
- Dam Spillways (FEMA 536)
- Spillway Gates (FEMA 537)
- Hydrologic Issues for Dams (FEMA 538)
- Impacts of Plants and Animals on Earthen Dams (FEMA 540)

- Embankment Dam Failure Analysis (FEMA 541)
- Outlet Works
- Risk Assessment for Dams

National Dam Safety Program Information

These resources provide an overview of the NDSP and the types of publications and resources available to the public.

- National Dam Safety Program Biennial Report for Fiscal Years 2004 and 2005 (FEMA 576) New!
- The National Dam Safety Program: 25 Years of Excellence
- Catalog of FEMA Dam Dafety Resources

Videos and Software

The following resources are free to dam owners and operators and address emergency action planning and the safety of dams.

- Emergency Action Planning Video
- Dam Seepage Monitoring System

Many of the publications can be ordered from the **FEMA Publications Warehouse**. Call 1 (800) 480-2520 for ordering information.

FEMA Distribution Center
P.O. Box 2012
8231 Stayton Drive
Jessup, Maryland 20794-2012

APPENDIX C

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

Testimony of the
ASSOCIATION OF STATE DAM SAFETY OFFICIALS
for the
Joint Hearing of Subcommittees on Economic Development, Public Buildings, and Emergency Management
and
Subcommittee on Water Resources and Environment
Committee on Transportation and Infrastructure
U.S. House of Representatives
May 8, 2007

Dear Chairwoman Norton, Chairwoman Johnson and Members of the Subcommittees:

The Association of State Dam Safety Officials (ASDSO) is pleased to offer this testimony concerning the safety of the nation's dams and levees and the critical role that the federal government has in mitigating the disasters caused by unsafe dams and levees.

ASDSO is a national non-profit organization of more than 2,400 state, federal and local dam safety professionals and private sector individuals dedicated to improving dam safety through research, education and communications. We represent the dam safety programs of the states and our goal simply is to save lives, prevent damage to property and to maintain the benefits of dams by preventing dam failures. ASDSO focuses its attention on improving dam safety yet has become interested in the topic of levee safety because levees, ideally, are designed similarly to dams and act as flood control structures much the same way many dams do.

Dams and levees are a critical part of the nation's infrastructure and provide vital benefits such as flood protection, water supply, hydropower, irrigation and recreation. Yet these dams and levees have the potential for failure and tragic consequences. As downstream development of dams increases and dams continue to age and deteriorate, they demand greater attention and investment to assure their safety. Levee safety, although years behind the national effort for dams, demands the same level of attention and investment.

The state dam safety programs regulate 86% percent of the 83,000 dams on the National Inventory of Dams. With the exception of Alabama, all states, plus Puerto Rico, have in place regulatory programs overseeing the safety of dams. About half of these same programs have the authority to regulate levee safety, but most cannot due to lack of staffing and resources. Many states do not have laws on the books creating levee safety regulatory programs. The states and these programs look to Congress and the Federal government for their continuing leadership and support toward strong dam and levee safety programs.

The eyes of the nation were focused on dam safety in the 1970s when several dramatic dam failures resulted in catastrophic consequences, including many deaths. The first national efforts to improve dam safety through coordination at the federal level occurred after these terrible failures.

While the National Dam Safety Program has greatly improved the safety of our nation's dams, the safety of dams and levees demands much more attention from national policymakers. Events over the past two years illustrate the need.

The years of 2005-2006 saw the failure of the Wheeler Island levee in California, the catastrophe of New Orleans, the emergency evacuation of downtown Taunton, Massachusetts because of a failing upstream dam, the failure of Taum Sauk Dam in Missouri, the fatal collapse of Kaloko Dam in Hawaii, and public outcry over the deterioration of Herbert Hoover Dike in Florida and the looming threat posed by Wolf Creek Dam in Kentucky.

As in the 1970s, this series of events has fixed national attention on dam and levee safety. Yet good intentions do not solve problems that continue to grow as dams and levees deteriorate or need rehabilitation to bring them up to current safety standards. The obligation to assure that they are properly constructed, operated and maintained rests with owners, regulators and policymakers at both the federal and state levels.

The Association of State Dam Safety Officials respectfully requests that this Subcommittee recognize the enormous value of our nation's dams and the increasing concerns for public safety because of dams. We request your support for an increase in funding to continue the National Dam Safety Program and for passage of HR 1098 to create the National Dam Rehabilitation and Repair Program.

The Association is grateful for the reauthorization of the program through the Dam Safety Act of 2006 (PL 109-460), which extended and increased authorized funding levels for this successful program.

Congressman Salazar, the Association also appreciates your commitment and support through the introduction of HR 1098 to improve this critical national public safety program.

<u>The National Dam Safety Program</u>

After the 1976 Teton Dam failure and other deadly failures, and prompted by the Kelly Barnes Dam (Toccoa Falls) failure in Georgia, also in the late 1970s, President Carter realized that federal programs were needed to address the dam safety issue. Based on his administration's groundwork, the federal government has been leading the way by example with the dams they own and regulate. The **National Dam Safety Program** exists today administered by the DHS, Federal Emergency Management Agency. For 10 years, the program has been providing assistance to state dam safety programs, continuing education to dam engineers and technological advancements through research for the dam engineering profession. Additionally, the Program directs the US Army Corps of Engineers to maintain a national tracking system that catalogues dams in the US.

The National Dam Safety Program Act of 1996 (PL 104-303) created the national program. Congress reauthorized the program through the Dam Safety and Security Act of 2002 (PL 107-310) and made modest increases in the authorized funds. At the close of the 109th Congress, the National Dam Safety Act of 2006 was passed (PL 109-460). As authorized, 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.

The modest increases authorized for the National Dam Safety Program last year have not been budgeted as part of FEMA's Mitigation Directorate budget. In fact, funding levels for the State Assistance Grant Program have been creeping downward for the past five years. These grants need to be fully funded so

enough can go to states to allow for the hiring of more dam safety inspectors, more emergency planning focused on dam failure hazards can occur and better enforcement of unsafe structures can continue.

According to the National Inventory of Dams—a program authorized by the National Dam Safety Program and administered by the US Army Corps of Engineers—there are over 83,000 dams in the United States. For the vast majority of these dams, the responsibility of assuring their safety falls on the shoulders of the states through regulatory programs (the remaining dams are owned or regulated by federal agencies). Because of limited staff and limited funding, most states are overwhelmed by that challenge. Table 1 attached to this testimony provides state-by-state data on the number of dams, the number of staff, the state budget and the number of dams that are considered deficient in the table.

"Deficient" means that these dams have been identified as having hydrologic or structural deficiencies that make them susceptible to a failure triggered by a large storm event, an earthquake, progressive deterioration, or simply through inadequate maintenance.

According to reports submitted by the 50 state dam safety programs, the number of deficient dams has risen by 85%—from 1,818 to 3,361—since 1998. This increase dwarfs the modest gains in the number of state-regulated dams undergoing repairs. Most of these deficient dams (70%) are classified as high- or significant-hazard-potential dams, meaning that significant property damage and/or loss of life is expected in the event of dam failure. Eight states—Ohio, Pennsylvania, Indiana, New Jersey, North Carolina, Georgia, and New Mexico—report more than 100 dams of high- or significant-hazard potential that do not meet state dam safety criteria.

Also of concern is a significant nationwide increase in the number of high-hazard-potential dams (dams whose failure would cause loss of human life). Since 1998, the number of state-regulated high-hazard-potential dams has increased by 9%—from 9,175 to 10,013. This increase is not due to the construction of new dams, but the increased development downstream of existing dams. While the majority of these dams meet safety standards, their potential to cause loss of human life demands stringent oversight

According to the *Model State Dam Safety Program* (FEMA No. 316), a high hazard potential dam should be inspected every year; yet data submitted to the National Inventory of Dams indicates that only about half of state-regulated high hazard potential dams are inspected yearly.

The task for state dam safety programs is staggering. The state of New York oversees the safety of 1,906 dams with only eight full time employees. Maine's lone dam inspector is responsible for more than 800 dams, and in Texas, seven state employees keep watch over 7,000 dams—that's 1,000 dams per staff member.

Because of these problems, and the resulting risk to human life, local economies, and the environment, ASCE gave U.S. dams a grade of 'D' in its 2005 Report Card for America's Infrastructure. The combined effect of rapid downstream development, aging/non-compliant structures and inadequate past design practices, coupled with a predicted increase in extreme events, demands fully funded and staffed state dam safety programs, as well as substantial and proactive funding for dam repairs.

The need is real. The recent dam failures in Hawaii, Missouri, and New York, and the near failure in Massachusetts last year have brought into tragic focus the potential consequences of deteriorating and unsafe (deficient) dams. Recent extreme rainfalls in the Northeast last summer and this spring have caused serious concerns over the vulnerability of dams in New Jersey, New Hampshire, Maryland, New York and Pennsylvania.

Federal Leadership Role

There is a clear need for continued federal leadership 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:

- 1972 - Buffalo Creek Dam in West Virginia failed and killed 125 individuals;
- 1976 - Teton Dam failure in Idaho caused $1 billion in damages and 14 deaths;
- 1977 - Kelly Barnes Dam, in Toccoa Falls, Georgia failed, killing 39 Bible college students;
- 1977 - Failure of the Laurel Run Dam in Pennsylvania killed 40 people;

More recent failures have demonstrated the enormous damages that dam failures can produce:

- 1995 – Timber Lake Dam, near Lynchburg, Virginia, failed, killing two people.
- 1996 - Meadow Pond Dam in Alton, New Hampshire failed, killing one woman and causing $8 million in damages.
- 2003 - Failure of the Silver Lake Dam in Michigan 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. It also flooded a major power plant, causing the closure of two iron mines and temporarily putting 1,100 miners out of work.
- 2004 - Big Bay Lake Dam in Mississippi failed, destroying or damaging over 100 homes, two churches, three businesses, a fire station and a bridge. The failure caused lakeside property values to plunge, and prompted a $100 million lawsuit against the dam owner.
- 2005 - In July, the Hadlock Pond Dam in Washington County, New York failed, displacing residents and causing over $1 million in damages to residences and transportation arteries.
- 2005 – The cataclysmic flooding of New Orleans in September demonstrated the deadly potential posed by water retention structures.
- 2005 – In October, approximately 2,000 people were evacuated from Taunton, Massachusetts when the 173-year-old dam at Whittenton Pond threatened to break. Emergency construction of a second dam downstream of the failing structure averted a disastrous flooding of the downtown area.
- 2005 – Around the same time as the Taunton crisis, residents of Schoharie County, New York became aware of serious problems with Gilboa Dam, which impounds roughly 19 billion gallons of water. Engineers say that the dam could collapse under extreme weather conditions. If this happened, many residents would have only minutes to escape; the villages of Schoharie and Middleburgh would be submerged under 30 to 40 feet of water, and the floodwaters would carve a path of destruction up to 60 miles long. Action is being taken: Local officials have issued flood preparedness manuals and are working to identify residents who may have trouble evacuating if the dam fails, and crews are working on emergency repairs for the dam. The long-term plan calls for a $200 million rehabilitation project.
- 2005 - In December, the sudden failure of Taum Sauk Dam in Missouri released a wall of water through Johnson's Shut-Ins State Park. The flood demolished the home of the park superintendent and his family, who were swept at least a quarter-mile away into the early morning darkness. Miraculously, all five members of the family survived. Had the dam failed during the summer months, it is likely that many lives would have been lost, as the park is a popular destination for campers and swimmers.
- 2006 - In March, the failure of Kaloko Dam on the Hawaiian island of Kauai killed seven people and caused significant damage to property and the environment.
- 2006 –In late July, following a ten-hour storm that dumped a foot of rain in an area near Gaithersburg, Maryland, the Lake Needwood dam developed severe leakage as the lake rose 23 feet above normal pool. Roughly 2,200 people were evacuated from their homes for up to three days as workers labored feverishly to lower the lake.

Potential dam failures are not merely a local or state concern, 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 National Flood Insurance Program, the cost of one small dam failure can easily exceed the annual costs of the National Dam Safety Program.

Continuation and 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

The National Dam Safety Program has been 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.

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 at the National Performance of Dams Program at Stanford University as well as a national clearinghouse and library of dam safety bibliographic data at ASDSO.

Research funds are currently being used to provide security training, security assessment tools and best management practices for states to utilize in addressing potential terrorist actions against the 75,000 non-federal dams.

The most valuable benefit to the state programs comes from the State Assistance Program. The assistance is based on the number of dams in each of the participating states and is 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; and
- State policies that address dam site security at non-federal dams.

Use of these funds helps states meet their own unique challenges. States have utilized funds to perform dam failure and dam stability analyses, to hire additional staff to conduct inspections and to conduct owner education workshops. In addition, 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 disappointing to see that appropriations and FEMA's budgeting priority for the Program over the past few years are well below the authorized levels, just as we begin to realize the benefits of the state assistance program—dam safety inspections have increased, the number of Emergency Action Plans, used to notify and evacuate downstream populations in the event of a failure, have increased. Despite the growing number of unsafe dams, the increase in dam failures, and the increase in funding approved by Congress in the Dam Safety and Security Act of 2006 to $9.3 million, there is no line item within FEMA's budget for the National Dam Safety Program and budgeting at FEMA has not been close to authorized levels. States have not realized any increase in assistance. Budget reductions and stiff competition with other FEMA mitigation programs such as earthquake and hurricane planning have further reduced the state grant assistance funds.

Table 2, attached to this testimony, provides information on the amount of state assistance received for each state, the potential funding if fully appropriated at authorized levels and the amount each state will lose as a result of the reduced funding. Many state dam safety officials offered their thoughts on how additional grant funds could improve dam safety in their state (Table 3). The lost funds come at a difficult time when development below dams creates additional high hazard potential dams, dams continue to age and deteriorate and, now, security issues must be addressed by the states.

Need for a National Rehabilitation Program for Dams

While there have been modest gains in the number of dams being repaired, the number of state regulated dams identified as unsafe is increasing at a faster rate than those being repaired. The number of unsafe

dams has risen by 80% since 1998 to more than 3,200. This condition will undoubtedly continue to worsen without federal leadership and an investment in the safety of our country's dams.

The Association of State Dam Safety Officials, in its October 2003 report entitled *The Cost of Rehabilitating Our Nation's Dams*, estimated that $10 billion would be needed to repair the most critical dams over the next 12 years. Out of this, needed repairs at publicly owned dams are estimated at $5.9 billion with the remaining $4.1 billion needed for privately owned dams.

ASDSO endorses passage of H.R. 1098 to create a federally administered dam rehabilitation funding program. This federally sponsored program would provide funds to be cost-shared at 65 percent federal to 35 percent state/local for non-federal publicly owned dams. The legislation would provide funds to states based on the number of high hazard dams in each of the participating states. Table 4 shows state-by-state potential funding amounts.

While HR 1098 is a good start, it does not address privately owned dams. There are more than 52,000 privately owned dams in the US. ASDSO estimates that approximately 45% of these may be in need of rehabilitation. There is a great need to begin an assistance program at both federal and state levels to help private dam owners with their rehabilitation needs. It is a public safety issue since privately owned dams are at risk of failure just as are publicly owned dams.

The dams across the United States are aging. Of the 74,286 NID dams with a reported date of completion, nearly 33,000 were built prior to 1960. In other words, nearly half of our nation's dams are already fifty years old. Approximately 19,000 more dams were built during the 1960s; thus by 2020, over 70% of dams in the U.S. will have reached the half-century mark.

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

Does the country want the number of unsafe dams to continue increasing? Will the federal government find a way to assist dam owners or will future catastrophic dam failures with resulting loss of life continue to occur? It is a reasonable expectation of every American to be protected from preventable disasters such as dam failures.

ASDSO strongly urges the Subcommittee's support for H.R. 1098 to create a federally administered dam rehabilitation program in order to repair our nation's unsafe dams.

The Future of a National Dam Safety Program

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. The Program needs to continue and to be funded properly to meet public safety expectations and prevent more loss of life from dam failures.

Our country's dams are aging and deteriorating, the number of dams determined to be unsafe is increasing and there is a tremendous demand for funds to repair unsafe dams.

Madam Chairwomen and members of the Subcommittees, the Association requests, in the strongest terms possible, that you provide the necessary priority to the safety of our nation's dams by passing HR 1098, and that you demand aggressive management of the National Dam Safety Program to achieve the results that the people who live below our dams expect.

The Association stands ready to assist the Subcommittees and staff in any way to advance the cause of dam safety. Toward that goal, please contact me or our Executive Director, Lori Spragens at 859-257-5140 if we can support the Subcommittee's important work.

The Future of a National Levee Safety Program

The Association of State Dam Safety Officials endorses a federally administered National Levee Safety Program. ASDSO supports the work of our colleagues within the Association of State Floodplain Managers and the National Association of Flood and Stormwater Management Agencies, along with the members of these Subcommittees, FEMA and the Corps of Engineers to develop a roadmap toward making this a reality.

ASDSO passed a resolution in 2006 supporting the establishment of a National Levee Safety Program. This resolution acknowledges that levee safety is critical to public safety and the environment, and that levees and dams share many aspects of design, construction, maintenance, hazard potential, emergency action planning and security. Many of the state dam safety programs represented by ASDSO also have regulatory responsibility for levee safety. ASDSO offers the following principles for the development and implementation of a National Levee Safety Program.

1) Because of their expertise in the design, construction, operation and maintenance of levees, the U.S. Army Corps of Engineers should be tasked as the lead agency to develop and implement the program.

2) There should be a National Levee Safety Committee led by the Corps of Engineers with representatives from federal agencies that design, own, operate or maintain levees and that have responsibility for emergency preparedness or response. The committee must also have representation from state levee safety programs and local governments that own and operate levees. This committee should participate in the development of the strategic plan and goals of the program and advise the Corps on implementation.

3) The program must develop and maintain a comprehensive inventory of all current and future levees both federal and non-federal.

4) The program must provide national standards for the design, construction, inspection, maintenance and operation of all levees. Federal agencies that design, own, operate or maintain levees and state programs that participate in the program must be working toward those standards, with measurable steps and goals to determine acceptable performance in levee safety. As part of the national standards and because of the clear residual flood risk to natural flood plain areas behind levees, ASDSO supports reevaluation of the practice of levee certification and removing floodplain areas behind levees from national flood insurance requirements.

5) The program should encourage strong levee safety programs administered by the states to protect public safety and mitigate economic and environmental risks related to the failure of all levees not in the federal system. These programs should be fully integrated with state and local programs of flood risk management, especially floodplain management and dam safety.

6) There must be financial and other incentives to encourage states to undertake effective state levee safety programs.

7) The program must support research and training in levee safety engineering.

Table 1 Association of State Dam Safety Officials
2005 Statistics on Dams and State Safety Regulation

State	Total Dams in National Inventory	Dams Under State Regulation[2]		State-Determined Deficient Dams[3]			State Dam Safety Budget	Staff Dedicated to Dam Safety Regulation	
		Total	HH	Total	HH	SH		Total FTEs	Dams Per FTE
Alabama	2218	0	0	0	0	0	0	0	NA
Alaska	100	82	18	29	7	7	100,500	1	82
Arizona	328	252	93	34	28	6	715,801	9	28
Arkansas	1208	403	102	21	19	1	338,700	3.5	335
California	1495	1253	334	53	32	18	8,145,000	60	21
Colorado	1808	1898	340	19	7	3	1,735,600	15	127
Connecticut*	723	3086	227	22	9	10	472,000	4.3	164
Delaware	61	37	9	4	3	NR	317,230	0.5	74
Florida	853	805	72	45	8	30	NR	NR	10
Georgia	4814	4480	437	112	112	NR	704,013	9	542
Hawaii	132	135	96	48	30	6	164,000	1.75	75
Idaho	407	430	96	5	2	3	317,547	7.5	50
Illinois	1462	1464	184	NR	NR	NR	306,000	4.8	299
Indiana	1047	993	241	445	76	154	425,000	5	188
Iowa	3340	3469	78	18	10	8	110,000	1.25	2,618
Kansas	5707	5923	183	41	15	15	616,540	7.16	837
Kentucky	1057	1049	177	90	30	41	1,550,420	14	79
Louisiana	554	534	29	24	14	5	480,316	8	67
Maine	337	831	25	13	3	10	36,914	1.5	561
Maryland	319	376	66	27	8	5	468,020	4.75	82
Massachusetts*	1624	2977	296	40	22	18	500,000	4.0	744
Michigan	985	987	79	23	5	7	282,550	2.8	414
Minnesota	1030	1280	39	79	5	22	305,000	3.4	375
Mississippi	3433	3629	310	16	14	NR	267,767	4.3	845
Missouri	5206	653	455	36	35	1	254,464	5	132
Montana	3256	2880	102	15	11	4	366,531	5.25	549
Nebraska	2284	2227	129	NR	NR	NR	434,652	5.7	378
Nevada	461	637	147	25	4	2	225,514	2	265
New Hamp.	629	3017	75	8	0	4	677,294	8	383
New Jersey	820	1703	202	193	48	116	1,254,000	20	85
New Mexico	500	393	170	104	77	27	484,100	6	66
New York	1971	1861	384	51	51	NR	977,072	8.21	613
North Carolina	2892	4478	1006	143	93	28	1,162,608	16	280
North Dakota	838	1140	28	22	5	13	200,000	4.5	761
Ohio	1587	1672	411	825	170	285	1,415,024	12.5	133
Oklahoma*	4701	4527	166	31	8	3	122,000	2.5	1,811
Oregon	896	1204	122	3	2	1	NR	2.2	562
Pennsylvania	1517	3139	785	325	225	46	2,039,600	24	131
Puerto Rico	35	35	34	NR	NR	NR	600,000	9	4
Rhode Island	181	657	17	5	NR	1	113,976	1.2	548
South Carolina	2419	2317	153	4	2	1	200,000	2.5	951
South Dakota	2503	2349	47	61	8	7	NR	1.5	1,569
Tennessee	1168	646	148	7	3	2	339,278	8	78
Texas	6975	7022	815	108	103	3	552,886	7	1,073

Utah	858	665	188	NR	NR	NR	657,900	6	970
Vermont	357	567	57	1	1	NR	299,000	2.2	256
Virginia	1640	1421	136	120	49	38	678,569	6.25	224
Washington	745	954	145	28	16	12	1,967,028	8.2	117
West Virginia	558	359	267	36	33	3	479,773	6	95
Wisconsin	1140	3571	214	2	NR	NR	518,750	6.25	150
Wyoming	1468	1410	79	NR	NR	NR	2,039,600	4.98	283
TOTAL	82,647	87,877	10,013	3,361	1,403	966	36,418,537	363.45	415 (av)

*CT, MA, and OK did not submit budget, FTE, or deficient dams data for 2005. Figures shown are from 2004.

Table 2 FEMA National Dam Safety Program State Grant Assistance Funds

Reduced Grant amounts in FY 2003 and FY 2004, Grants at full funding and
Estimated cumulative state grant losses over four year period FY 2003 through FY 2006

STATE	FY 2003 Reduced Grant Authorized at $ 6 M Appropriated at $4 M	FY 2004 Reduced Grant Authorized at $ 6 M Appropriated at $4 M	FY 2003-2006 Annual Grant if fully funded at $ 6 M	FY 2003 & 2004 Lost grant assistance over past two years	FY 2003 thru FY 2006 Projected grant loss over four years at current levels
Alabama*	$0	$0	$0	$0	$0
Alaska	$25,715	$22,990	$44,091	-$39,477	-$81,680
Arizona	$29,834	$26,672	$51,153	-$45,800	-$94,762
Arkansas	$35,898	$32,093	$61,550	-$55,109	-$114,022
California	$64,139	$57,340	$109,971	-$98,463	-$203,724
Colorado	$74,716	$66,797	$128,108	-$114,702	-$237,323
Connecticut	$46,113	$41,226	$79,065	-$70,791	-$146,470
Delaware*	$0	$0	$0	$0	$0
Florida	$41,730	$37,307	$71,550	-$64,063	-$132,548
Georgia	$144,571	$129,248	$247,880	-$221,940	-$459,204
Hawaii	$27,099	$24,227	$46,464	-$41,602	-$86,076
Idaho	$36,886	$32,977	$63,245	-$56,626	-$117,162
Illinois	$64,303	$57,487	$110,253	-$98,716	-$204,247
Indiana	$61,074	$54,601	$104,717	-$93,758	-$193,990
Iowa	$123,487	$110,398	$211,728	-$189,572	-$392,232
Kansas	$229,727	$205,378	$393,887	-$352,668	-$729,686
Kentucky	$56,460	$50,476	$96,806	-$86,675	-$179,335
Louisiana	$33,064	$29,559	$56,691	-$50,759	-$105,022
Maine	$43,774	$39,134	$75,054	-$67,200	-$139,040
Maryland	$35,371	$31,622	$60,647	-$54,300	-$112,349
Massachuettes	$74,485	$66,590	$127,712	-$114,347	-$236,589
Michigan	$44,993	$40,224	$77,144	-$69,071	-$142,910
Minnesota	$50,726	$45,350	$86,975	-$77,873	-$161,123
Mississippi	$135,482	$121,121	$232,295	-$207,986	-$430,332
Missouri	$43,280	$38,692	$74,207	-$66,441	-$137,470
Montana	$117,226	$104,801	$200,994	-$179,961	-$372,347
Nebraska	$90,205	$80,644	$154,664	-$138,479	-$286,518
Nevada	$36,063	$32,241	$61,833	-$55,362	-$114,547
New Hampshire	$49,639	$44,377	$85,110	-$76,204	-$157,669
New Jersey	$76,002	$67,946	$130,311	-$116,675	-$241,405
New Mexico	$37,842	$33,831	$64,884	-$58,094	-$120,199
New York	$87,074	$77,844	$149,295	-$133,672	-$276,573
North Carolina	$164,711	$147,253	$282,411	-$252,858	-$523,174
North Dakota	$41,368	$36,983	$70,929	-$63,507	-$131,398
Ohio	$79,857	$71,393	$136,922	-$122,593	-$253,651
Oklahoma	$170,676	$152,585	$292,638	-$262,015	-$542,120
Oregon	$61,634	$55,101	$105,677	-$94,618	-$195,769
Pennsylvania	$63,678	$56,928	$109,181	-$97,755	-$202,260
Puerto Rico	$24,031	$21,484	$41,204	-$36,892	-$76,331
Rhode Island	$31,097	$27,801	$53,319	-$47,739	-$98,775
South Carolina	$96,762	$86,506	$165,906	-$148,545	-$307,345
South Dakota	$97,619	$87,272	$167,376	-$149,861	-$310,069
Tennessee	$42,027	$37,572	$72,059	-$64,518	-$133,490
Texas	$245,643	$219,607	$421,176	-$377,102	-$780,240
Utah	$40,314	$36,041	$69,122	-$61,888	-$128,049
Vermont	$33,986	$30,384	$58,272	-$52,174	-$107,950
Virginia	$38,930	$34,804	$66,749	-$59,764	-$123,653
Washington	$40,215	$35,952	$68,952	-$61,736	-$127,735
West Virginia	$33,064	$29,559	$56,691	-$50,759	-$105,022
Wisconsin	$54,681	$48,885	$93,755	-$83,943	-$173,683
Wyoming	$67,632	$60,463	$115,961	-$103,826	-$214,820

* No state dam safety program

Table 3

State Dam Safety Program Responses When Asked How They Could Use of Fully Funded National Dam Safety Program State Assistance Grant

Idaho

Our largest obstacle facing us now is the fleet of vehicles that we utilize to travel to dams. Due to state cut backs and restrictions on FEMA grant funds we have an aging fleet of trucks that have well over 100,000 miles. We are desperately in need of new vehicles to get inspectors out in the field to perform their work.

Missouri

The State of Missouri will lose roughly $93,000. Without this funding training opportunities for our engineering staff will have to be curtailed, educational programs for dam owners that were paid for using these funds will have to be reduced, and staff used to help with the data collection and updating of the National Inventory of Dams will not have adequate funding. Equipment purchases and upgrades will also have to be cut back.

Utah

Could have funded a full time construction inspector for last years very busy season or replaced the mid level engineer that our program lost 2 years ago. It's about 20% of our budget and could have helped heaps.

Alaska

The full amount proposed for Alaska would be marginally adequate to fund an assistant engineer, which I could use. The current amount is inadequate.

Illinois

Illinois had a program to hire-back a senior dam safety engineer to train junior engineers and assist in the analysis of highly technical dam permit applications and assist in field inspections. The full funding would have allowed additional hours of assistance and field inspections. All of the unfunded amount could have been directed to that program. As all funding was spent in FY 2006, the contract was not renewed. The funds available in the 2007 grant are only sufficient to pay the 1 staff engineer employed using the grant funds. Full funding would allow the reestablishment of the hire-back contract. We have only 1 senior (15+ yrs experience) dam safety engineer remaining after several retirements.

North Carolina

Had the grants been fully funded, North Carolina could have developed a comprehensive guidance document and made it available on the web site for engineers to assist them in developing plans, specifications, and documentation to construct, repair, modify and breach dams in the state. More specific guidance on developing emergency action plans could have been developed, and a system for reviewing, filing, and requesting updates for emergency action plans could have been implemented, along with working with the owners of all high hazard potential dams to develop EAPs. Two or more dam owner workshops per year could have been conducted to assist owners in operating and maintaining their dams. Also, we could have completed scanning of plan sheets of existing dams into our database to make them more accessible to our staff across the state and consultants working on repair plans. Each staff member could have attended more training such as that provided by ASDSO, EMI, and Bureau. This would have made our plan reviews more thorough and faster.

Kentucky

1. We would have purchased a siphon pump system, about 200 feet of 6" dia. flexible pipe, and a trailer. This would have been used for emergency dewatering of dams.

2. Due to limited staff, presently we inspect high hazard dams once every two years. Kentucky has over 175 high hazard regulatory dams. This money could have been spent in obtaining services of an outside contractor (an engineer) in order to inspect these dams every year.

West Virginia

WV could have hired a part-time technician to review EAPs - resulting in a measurable increase in public safety.

Texas

If we had an additional $526,000 over the last 3 years, we could have done the following:

Provided additional training to owners.

Outsourced additional inspections, possibly as many as 200 more. This would have helped us get all of the high hazard dams in Texas inspected over a 5 year period. This could have also helped us complete our security inspections.

Purchased another vehicle to perform inspections.

Vermont

In Vermont, the largest amount of grant money has been spent to hire part-time and temporary help to increase the number of inspections which we do—it has enabled us to get from about 30 inspections per year to 130 inspections per year. An inventory of emergency action plans has also been developed with the existing grant funding.

Inspections are important to open communications between dam owners and the state, and to identify urgent problems to the owners for correction.

The next most important thing is to develop, maintain, and exercise emergency action plans—for both safety and security reasons.

In Vermont, with additional funding, we would hire temporary or part time help to develop EAP templates, and work with owners to develop and maintain current EAPs. Updating notification flowcharts would be an important task.

Nebraska

The additional funding would certainly have had a major positive impact on our program. It would have allowed for additional staff, which would have positively impacted our construction inspection program and allowed for development of an owner outreach/education program. Also, we are in need of additional resources for hazard classification updates for certain low and significant hazard dams in metropolitan areas that may in fact be high hazard. We are working on this now, but the added funding would allow for a more timely resolution of this issue.

New Jersey

We could have utilized the funds for various projects including:

-digitizing inundation maps

-digitizing archival information

-additional student interns

-conduit inspection equipment

-additional staff training

-additional public outreach

Mississippi

As you know from the last National Dam Safety Performance Report, Mississippi ranks 45th in the nation in both FTEs and Dollars devoted to the Dam Safety program. The additional $96,000 per year for FY03 to FY06 would have allowed us to keep our part time contract inspectors on board to perform inspections during construction of

new dams and to perform random follow-ups for quality assurance on inspections performed by registered professional engineers. With current staffing of only about 3.5 FTE capable of doing field work, we can do little more than process applications, respond to complaints, and review design work performed by engineering firms without the benefit of independent field investigation or analysis.

New Mexico

With the additional funds New Mexico would hire a half-time engineer to work on preparing EAPs.

Tennessee

Our grant amount wound up at about $38,000/yr instead of $72,000/yr. Tennessee had 7 positions its dam safety program until 2005, when we had to give up one due to budget considerations. I believe we would still have that position if we had received the full grant amount. And of course, once you lose a position it becomes extremely difficult to get it back

Georgia

the additional money would have meant at least one more engineering position which could have done the following each year:

1. 50 inspections of high hazard dams and assisted on another 35 inspections

2. 20 plus dam break analyses to correctly classify dams as to potenial hazard or reviewed 10 plus sets of engineering reports and plans for bringing high hazard dams into compliance.

3. Produced 5 detailed engineering evaluation reports for non-compliant high hazard dams for compliance with state requirements.

4. Other duties as assigned

The net result would be more high hazard dams being safe.

Montana

- Revise and update our state minimum design standards.
- EAP's for significant dams.
- Training for dam owners—plant and animal management.
- Training for professional engineers on dam safety standards.
- Update repair and rehabilitation needs data on high hazard dams.
- Update the state inventory of dams.

Nevada

The Safety of Dams Program for the State of Nevada lost out on much needed enhancements due to less funding. The additional funding would have provided Nevada's program with the ability to possibly hire an additional staff person for at least a year. If we could look at possible funding over the three year period to be a very similar amount then we might be able to plan long range for additional augmentation and further development of the dam safety program. Any additional funds can only improve Nevada's as well as other state programs.

Table 4

Dam Repair & Rehabilitation Act of 2007
Funding Table by State
(Total Funding over 4 year program)

2005 NID ('03 data)	Total Funds=	$200,000,000	1/3 of funds	ratio 2/3 of funds	Total Grant
State	No. of HH Dams	Ratio of No. in State/Total			Amount
Alabama	18	0.0037	$1,307,190	$499,479.71	$1,806,669.25
Alaska	11	0.0023	$1,307,190	$305,237.60	$1,612,427.14
Arkansas	74	0.0154	$1,307,190	$2,053,416.58	$3,360,606.12
Arizona	43	0.0089	$1,307,190	$1,193,201.53	$2,500,391.07
California	365	0.0760	$1,307,190	$10,128,338.54	$11,435,528.08
Colorado	131	0.0273	$1,307,190	$3,635,102.32	$4,942,291.87
Connecticut	113	0.0235	$1,307,190	$3,135,622.62	$4,442,812.16
Delaware	1	0.0002	$1,307,190	$27,748.87	$1,334,938.42
Florida	1	0.0002	$1,307,190	$27,748.87	$1,334,938.42
Georgia	179	0.0373	$1,307,190	$4,967,048.21	$6,274,237.76
Hawaii	15	0.0031	$1,307,190	$416,233.09	$1,723,422.63
Idaho	14	0.0029	$1,307,190	$388,484.22	$1,695,673.76
Illinois	78	0.0162	$1,307,190	$2,164,412.07	$3,471,601.61
Indiana	62	0.0129	$1,307,190	$1,720,430.11	$3,027,619.65
Iowa	51	0.0106	$1,307,190	$1,415,192.51	$2,722,382.05
Kansas	111	0.0231	$1,307,190	$3,080,124.87	$4,387,314.41
Kentucky	84	0.0175	$1,307,190	$2,330,905.31	$3,638,094.85
Louisiana	9	0.0019	$1,307,190	$249,739.85	$1,556,929.40
Maine	28	0.0058	$1,307,190	$776,968.44	$2,084,157.98
Massachusetts	234	0.0487	$1,307,190	$6,493,236.21	$7,800,425.75
Maryland	41	0.0085	$1,307,190	$1,137,703.78	$2,444,893.32
Michigan	105	0.0219	$1,307,190	$2,913,631.63	$4,220,821.18
Minnesota	40	0.0083	$1,307,190	$1,109,954.91	$2,417,144.45
Mississippi	62	0.0129	$1,307,190	$1,720,430.11	$3,027,619.65
Missouri	74	0.0154	$1,307,190	$2,053,416.58	$3,360,606.12
Montana	64	0.0133	$1,307,190	$1,775,927.85	$3,083,117.40
Nebraska	59	0.0123	$1,307,190	$1,637,183.49	$2,944,373.03
Nevada	54	0.0112	$1,307,190	$1,498,439.13	$2,805,628.67
New Hampshire	34	0.0071	$1,307,190	$943,461.67	$2,250,651.21
New Jersey	110	0.0229	$1,307,190	$3,052,376.00	$4,359,565.54
New Mexico	61	0.0127	$1,307,190	$1,692,681.23	$2,999,870.78
New York	287	0.0597	$1,307,190	$7,963,926.47	$9,271,116.01
North Carolina	158	0.0329	$1,307,190	$4,384,321.89	$5,691,511.43
North Dakota	18	0.0037	$1,307,190	$499,479.71	$1,806,669.25
Ohio	240	0.0499	$1,307,190	$6,659,729.45	$7,966,918.99
Oklahoma	70	0.0146	$1,307,190	$1,942,421.09	$3,249,610.63
Oregon	40	0.0083	$1,307,190	$1,109,954.91	$2,417,144.45
Pennsylvania	356	0.0741	$1,307,190	$9,878,598.68	$11,185,788.22

Puerto Rico	29	0.0060	$1,307,190	$804,717.31	$2,111,906.85
Rhode Island	1	0.0002	$1,307,190	$27,748.87	$1,334,938.42
South Carolina	75	0.0156	$1,307,190	$2,081,165.45	$3,388,355.00
South Dakota	34	0.0071	$1,307,190	$943,461.67	$2,250,651.21
Tennessee	80	0.0166	$1,307,190	$2,219,909.82	$3,527,099.36
Texas	542	0.1128	$1,307,190	$15,039,889.00	$16,347,078.55
Utah	73	0.0152	$1,307,190	$2,025,667.71	$3,332,857.25
Virginia	92	0.0191	$1,307,190	$2,552,896.29	$3,860,085.83
Vermont	33	0.0069	$1,307,190	$915,712.80	$2,222,902.34
Washington	72	0.0150	$1,307,190	$1,997,918.83	$3,305,108.38
West Virginia	187	0.0389	$1,307,190	$5,189,039.20	$6,496,228.74
Wisconsin	75	0.0156	$1,307,190	$2,081,165.45	$3,388,355.00
Wyoming	17	0.0035	$1,307,190	$471,730.84	$1,778,920.38
	4805			Total	$200,000,000.00

** Bill defines public dams as non-federal publicly owned dams.*

ASDSO Testimony - May 8, 2007

Written Responses for the Record
to the Hearing Conducted
July 26, 2006
By the
Subcommittee on Economic Development, Public Buildings and Emergency Management

1. Do you support H.R. 4981, which reauthorizes and improves the National Dam Safety Act?

Yes, without question. H.R. 4981 authorizes an essential program necessary to improve the safety of our nation's dams. This Act and the National Dam Safety Program provide key elements supporting all state dam safety regulatory programs.

a. Do you have specific changes that would allow you to support it?

ASDSO supports H.R. 4981 as written. As with any proposal, however, refinements could improve the Act or the implementation and effectiveness of the national and state programs.

As an example, the Association believes that significant advances in the safety of the nation's dams are more likely to be achieved through the technical experience and leadership of a federal agency that is focused on engineering, structures, protection and problem-solving rather than on response and recovery. In light of proposed levee safety legislation, serious consideration should be given to the technical administration of both the dam safety and levee safety programs by the same federal agency—that is, the U.S. Army Corps of Engineers.

.

Other suggested changes include:

- Incentives to increase the number of Emergency Action Plans (EAPs) on dams
- Disclosure of dam-related issues to potential owners of dams, property bordering impoundments, and property within dam break inundation zones.

2. Do you support H.R. 1105, the Dam Rehabilitation and Repair Act of 2005?

Yes, without question. Inspections, education, and research alone will not improve the safety of dams. The proposed H.R. 1105 is a great step toward solving a long-standing dam safety problem.

There is an enormous demand for funding to repair unsafe dams, both publicly and privately owned. Most dam owners are not willfully negligent; however, many owners—both public and private—cannot afford expensive repairs. As thousands of dams constitute potentially serious hazards to downstream lives and property throughout our nation, the need for a rehabilitation funding program is clear.

a. Do you have specific changes that would allow you to support it?

ASDSO supports H.R. 1105 as written. We respectfully suggest consideration of expanding the Act to include privately owned dams. We suggest several approaches, all in cooperation with state dam safety agencies:

- Expansion of the proposed grant program to include privately owned dams
- Establishment of a low-interest loan program for dam repairs and upgrades
- Allowance of income tax credits or deductions for dam repairs and upgrades

3. H.R. 1105 does not fund private dams. What are the needs associated with privately owned dams?

Dam owners need a reliable source of funding for dam repairs and upgrades that will resolve safety and security issues. Of the approximately 79,000 dams in the National Inventory of Dams, most (64%) are owned by private businesses or citizens.

It is difficult for many private dam owners to find the funding to undertake rehabilitation work when necessary. Because of this difficulty, repairs are often postponed; dams deteriorate further; minor problems become major problems; remedies become more expensive.

To be safe, dams require maintenance. Occasionally, dams must undergo major repair, upgrades, or rehabilitation due to structure and component age, deterioration, outdated designs, improved techniques, and better understanding of events that can threaten dams, such as earthquakes and potential flooding conditions.

Likewise, a well-maintained dam may require an upgrade as a result of downstream development. (As potential risks posed by a dam increase, so do state-mandated technical standards.) Most dam owners have no power to control downstream land use; thus, a low-hazard-potential dam can become a high-hazard-potential dam within a single day. Suddenly, because of actions over which the dam owner has no control, the owner is in the difficult position of having to spend tens of thousands (and sometimes millions) of dollars for expensive upgrades, such as increasing a dam's spillway capacity or constructing an emergency spillway.

Funding assistance, through government or private sources, is inadequate at best. Only 15 states offer loan programs, and funding for at least two of these programs is in jeopardy. As a result, there are scores of U.S. dams long overdue for repairs, and many more scores of people whose lives and property are, accordingly, at risk

In some situations the needs associated with privately owned dams are more basic. Some owners do not realize their responsibility and liability in regard to the downstream public, property and environment. Adequate understanding of proper dam maintenance and upgrade techniques—as well as the need for a sound emergency action plan—are typical problems among many owners across the United States.

4. What, beyond those proposed by Mr. Kuhl and Ms. Kelly, are necessary to improve the program?

- A continued increase in authorized funding levels for HR 1105 with annual full appropriation to address our nation's $10 billion dam rehabilitation need
- An amendment to Ms Kelly's bill to include funding for privately owned dams, as their failure can have the same horrific consequences as failure of publicly owned dams
- A low-interest, revolving loan program to provide assistance to private dam owners.
- A requirement that dams rehabilitated under this program have an up-to-date and exercised emergency action plan
- Incorporation of a dam-break inundation clause on the state's uniform Sellers Disclosure of Property Condition statement. (California is the only state that currently requires sellers to disclose whether any portion of their property is located in a dam-break inundation zone [Cal. Gov't § 8589.4]).
- Encourage owners of high hazard dams to maintain minimal liability insurance.

5. Why should the federal government assist in funding state and local dams?

Dams provide a life-sustaining resource to people in all regions of the United States. They are an extremely important part of this nation's infrastructure—equal in importance to bridges, railroads, highways, and airports. They can serve several functions at once, including water supply, navigation, recreation, flood control, energy, irrigation, and waste impoundment.

A dam failure can have many effects aside from economic loss to the dam owner. Failures can have devastating long-range economic impacts on a region, cause loss of life and tremendous property damage, and increase federal expenditures for disaster relief. Numerous examples illustrate these points. (See *Dam Failures and Incidents* attachment.)

The National Flood Insurance Program and the President's Disaster Relief Fund are typically the sources for repair and recovery costs for flood-damaged areas. These repair and recovery costs—

even for a single dam failure—often far exceed the cost of preventive rehabilitation and dam safety program costs.

Dam failures and their potential flood inundation areas do not respect state or national boundaries. This a significant concern as failures of several U.S. dams could cause loss of life and significant property damage in Canada, Mexico, or adjacent states. The recent near-failure of a dam in Juarez, Mexico and the subsequent evacuation of parts of El Paso presented a clear and timely demonstration of potential international implications of dam failures. The accompanying table shows a state-by-state look at dam inundation areas that cross state and international borders.

The Federal Government owns and regulates many dams, and, by example, clearly sets the course of what it means to be a responsible owner. If the Federal Government does not provide direction on this topic, no one will.

6. H.R. 4981 defines "state regulated dams." Could you please discuss the need for this statutory definition and the effect it will have on the existing program.

The National Dam Safety Board of Review has long recognized the need to have a more consistent definition of "state regulated dams" so all states can use a similar definition when reporting program numbers to FEMA. These numbers are ultimately used in federal state assistance funding level determination equations. A definition will assist in providing a fair distribution of limited financial resources.

The National Dam Safety Program (NDSP) is intended to assist and support state dam safety programs through many initiatives, including financial assistance awards. This financial assistance program was created to have states continue making programmatic improvements, working toward fulfilling all of the criteria in Section 8 e(2)(A).

Three criteria are judged by the dam safety community and the National Dam Safety Board of Review (NBR) to be the essential functions required to truly "regulate" dams:

a) the authority to inspect dams,

b) the authority to review design plans and

c) the authority to take enforcement actions.

Several states do not have these three critical statutory authorities, but, in accordance with the NDSP, should work toward acquiring them.

The funding levels for the financial assistance granted to each participating state are derived from a formula based on the number of dams listed as "state-regulated" in the National Inventory of Dams (NID). The greater this number, the greater financial assistance a state receives. State dam safety programs self-certify, to the NID, the number of "state-regulated" dams in their state. However, several states argue that having only one of the three essential functions constitutes "regulation" and are submitting inflated data to the NID according to their definition, despite the unmistakable determination of the NBR that all three are required.

The amendments in HR 4981 that address the definition of "state-regulated" are necessary in order to provide uniform rules for all states to determine what qualifies as "state-regulated" and to ensure uniform computation of the financial assistance awards. It is counter-productive to the philosophy of the NDSP and a disincentive to continue to reward inflated grants to states that lack the three requisite statutory authorities to truly regulate dams.

7. In your testimony you mention that H.R. 4981, the Dam Safety Act of 2006, defines "state regulated dam" which is critical to establishing funding levels and incentives to states. Please tell us more about why this is important.

The State Assistance Program provides funds to state agencies to help them improve their dam safety programs. The funding helps states carry out the essential functions of a dam safety program, including inspecting dams and permitting construction, rehabilitation, repair, alteration, and removal projects. The assistance is distributed among states based on numbers of dams that the

state programs regulate. Defining this type of dam allows the federal agency to fairly determine how much each state should receive. (Please also see the answer to question number 6.)

8. According to the numbers in your testimony, clearly many states do not have enough employees to run even just an adequate state dam safety program. Can you give us an idea of what kind of numbers are appropriate?

According to the Model State Dam Safety Program (FEMA 316/March 1998) guidebook, an effective dam safety program would have approximately 10.3 full time equivalent (FTE) professionals on staff per 200 dams regulated. That would be about 20 dams per FTE. In reality, the number of dams per FTE is 387—nearly *20-times the recommended workload.*

As the attached *State Staffing and Workload* chart shows, staffing of most state dam safety programs falls alarmingly short of recommended guidelines. Currently, only the State of California maintains a dam safety staff that mirrors the 20 dams per FTE benchmark.

Based on the total number of state-regulated dams in the U.S., the number of people working full-time in state dam safety programs throughout the U.S. should be increased tenfold. To reach the Model State Dam Safety Program recommended staffing levels, about 3,200 more professionals would be needed in addition to the states' existing total program staff of 353 FTE's. What this means is that while each state on average has 7 dam safety program staff, they need an on average an additional 64 more professionals in order to have an effective program.

While the Federally recommended model staffing levels will likely never be obtained, the disparity is stunning. A need to strive for better staffed programs clearly exists.

9. Clearly there are several competing priorities for State Dam Safety Officials. What is the most immediate concern?

The one over-arching priority of the Association and state dam safety programs is to reduce the risk of loss of life and property damage caused by dam failures.

The Association cannot single out just one issue when we are so alarmed at the number of un-inspected dams, or the fact that only 50% of the dams have an Emergency Action Plan in place, or the huge unmet funding need of $10 billion for repairing the nation's critical dams.

The many issues that are immediate concerns must not be viewed as competing priorities, but as equally important challenges that must be addressed simultaneously.

10. Since most of our nation's 80,000 dams are owned by private companies and individuals. How engaged are the state dam safety programs?

While individual state dam safety program staff are typically very committed to the cause of their programs, many state dam safety programs are not as engaged as anticipated in the Model State Dam Safety Program (FEMA 316/March 1998) guidebook. It was noted in question number 8 that many states do not have enough employees to run comprehensive or even adequate dam safety programs. The benchmark-anticipated full time equivalent (FTE) professionals, are not on staff in most states. (See *State Staffing and Workload* chart.)

Within their unique safety regulation process, state dam safety program personnel routinely communicate with private owners. This job is daunting, as ownership of dams is sometimes unclear, owners cannot be located, and many owners are unresponsive.

Larger, for-profit owners are often more engaged in dam safety than the smaller owners, lake associations, or individual owners. The smaller non-profit or individual owners are often willing to take appropriate actions but lack adequate financial resources.

11. It is good to know the number of Emergency Action Plans (EAPs), used to notify and evacuate downstream populations in the event of a failure have increased. Are EAPs exercised regularly?

Failure to exercise an existing EAP for a high-hazard-potential dam is akin to an elementary school that does not practice fire drills—should an emergency occur, unnecessary confusion and loss of time are guaranteed. Requirements for the update and exercise of EAPs vary by state. While some states judiciously review and practice their plans, others do not.

Even worse, many states do not require EAPs. While there has been some progress, EAPs have been established for only about half of U.S. dams that pose a risk to human life..

All states should require the creation of EAPs—including identification of inundation zones and procedures for notification and evacuation—for high-hazard-potential dams. These EAPs should include requirements for conducting exercises; however, there must first be something to exercise.

Unfortunately, due to the lack of dam break inundation maps, many people who live in dam break inundation zones are completely unaware that their homes and their lives could be at risk.

12. H.R. 1150, the Rehabilitation and Repair Act of 2005, does not address the needs of 52,000 privately owned dams of which almost half may be in need of rehab. Some say there is a need at both federal and state levels to help private dam owners. Does anyone have any recommendations as to how to go about it?

A few states across the country have established innovative funding programs to assist dam owners. States with successful programs can serve as examples for other states to follow.

There is currently no broad-based program at the federal level to assist dam owners with the funding of needed repairs. The establishment of funding assistance by the federal government and individual states is an important step in mitigating costly disasters caused by the failure of unsafe dams.

ASDSO recommends establishment of a federal assistance program for private owners. This would be the most effective means of providing a long-term, stable funding source for dam rehabilitation. FEMA and/or the U.S. Army Corps of Engineers (the Corps) could be the lead federal agencies.

The federal-state relationships under the current National Dam Safety Program could be continued and expanded to include a funding mechanism.

Direct funding to states, municipalities and private owners would be the most effective mechanism. Funding could be accomplished in various ways: loans similar to a state revolving fund, or loan/bond guarantees which would be popular with privately owned dams.

ASDSO completed a research report entitled, *THE COST OF REHABILITATING OUR NATION'S DAMS: A METHODOLOGY, ESTIMATE & PROPOSED FUNDING MECHANISMS*, (December 2002) that describes recommendations on this issue.

Other concepts include the following:

- Requiring and guiding private owners to develop a maintenance/ rehabilitation trust or escrow fund for the life of the structure. New dams should be required to have such a fund.
- Encouraging private owners to look for ways (possibly through creation of conservancy districts, or just donations) to transfer ownership of their dams to public entities.
- Creating a low interest revolving loan fund program for private dams, in addition to the current grant program proposal for public dams.
- Allowing an individual income tax deduction or exemption for funds a private dam owner spends for dam safety improvements.

13. It appears that all of the witnesses support H.R. 4981, the Dam Safety Act of 2006 and H.R 1105, the Dam Rehabilitation and Repair Act of 2005. Do you all have any recommendations or suggestions for enhancements to these bills?

Many possible improvement recommendations have been mentioned in answers to previous questions. However, we cannot overstate the need for <u>full appropriation of both bills</u>. The national

dam safety program in particular has not yet achieved even the limited vision of the enabling legislation, as appropriations have not matched authorized levels.

14. Federal agencies have been conducting vulnerability assessments and security improvements at federally owned dams. Some have asserted that the federal government has been slow at sharing this information with the states and private dam owners. Is this true? If so, why are there delays in sharing this critical information?

From a states' perspective, the federal government lacked a sense of urgency regarding the transfer of knowledge and techniques to improve dam security from federal agencies to state dam safety officials.

Following the terrorist attacks of 9/11, federal agencies took immediate, decisive steps toward exploring the vulnerability of dams to manmade attack and options to mitigate these vulnerabilities. Security experts completed vulnerability assessments on federal dams and labs were charged with conducting blast studies and other tests of dam security.

Although DHS has standing "sector coordinating councils" to facilitate communication between federal, state, and local governments and the private sector, the process is slow and unwieldy. Consequently, results of the laboratory studies and more practical data for improving on-site dam security are still not available to the states.

Differing state Freedom of Information policies have been cited as a major barrier to freely transferring this information from the federal level to the state level.

Another possible barrier is the number of federal agencies involved with dam safety and their actions immediately following 9/11. Several unique approaches to security upgrades resulted, and this lack of uniform procedures played a role in making the technology transfer process more challenging.

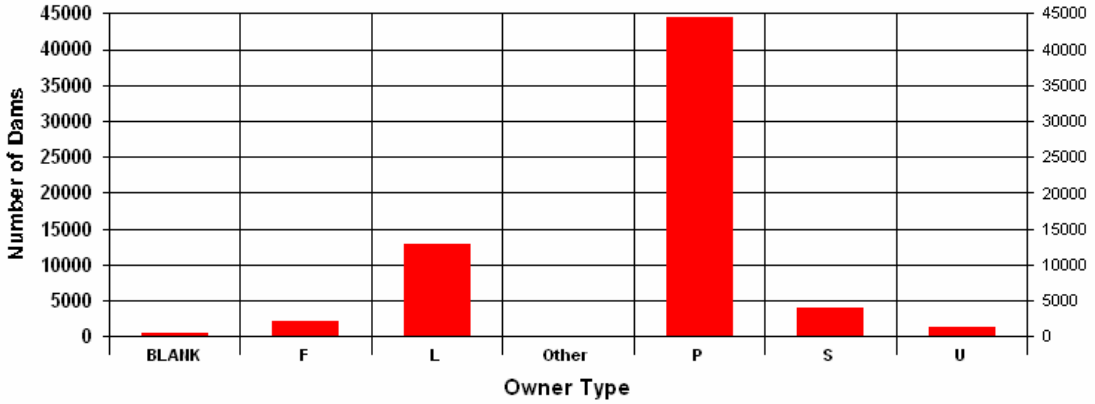
Whatever the cause, federal guidance on dam security issues, whether basic "best practices" policies or more detailed information, has been slow in coming to most state, local, and private dam owners.

State Dam Safety Program Staffing and Workload – 2005 Data *All data except for states marked with an asterisk is from the 2005 Dam Safety Program Management Tools (DSPMT) Report to the National Dam Safety Review Board. FTE=Full-Time-Equivalent Staff. Alabama has no dam safety program.*

State	Recommended FTEs per Model Program	Existing Total FTEs	Existing State-Reg Dams per FTE
Alaska	4	1	82
Arizona	13	9	28
Arkansas	20	4	115
California	63	60	21
Colorado	95	15	127
Connecticut*	2	4	177
Delaware	40	1	74
Georgia	7	9	429
Hawaii	22	2	77
Idaho*	73	8	57
Illinois*	50	5	305
Indiana*	173	5	199
Iowa*	296	1	2775
Kansas	52	7	827
Kentucky	27	14	75
Louisiana	42	8	67
Maine	19	2	554
Maryland	49	5	79
Michigan*	64	3	353
Minnesota	181	3	376
Mississippi	33	5	844
Missouri	144	5	131
Montana	111	5	549
Nebraska	32	6	391
Nevada	42	2	319
New Hamp.	85	8	106
New Jersey	20	20	85
New Mexico	93	6	66
New York	224	8	227
N. Carolina	57	16	280
N. Dakota	84	5	253
Ohio	60	13	134
Oklahoma	157	3	1509
Oregon*	2	2	547
Pennsylvania	33	24	131
Rhode Island	116	1	548
S. Carolina	117	3	927
S. Dakota	32	2	1566
Tennessee	351	8	81
Texas	33	7	1003
Utah	28	6	111
Vermont*	71	2	258
Virginia	48	5	284
Washington	18	8	116
West Virginia	179	6	60
Wisconsin*	71	6	571
Wyoming	4	5	283
	Recommended: 3537	**Actual: 353**	**Actual Average: 387** ***Recommended: 20***

2006 National Inventory of Dams (NID) Update Data Collection Results
Reporting Year: 2005
Prepared for ASDSO -- 3 March, 2006

Owner Type



F – federal
L – local
P – private
S – state
U – utility
(Blank – unknown)

Owner breakdown, as reported by states*:

Private businesses, utilities, or individuals - 64%

State governments - 5%

Local governments - 21%

*Federal agencies 3% - (This will increase to about 5%.)

Unknown (blank, invalid, or ownership in question) - approximately 5%

**Processing of federal agency reports is in progress.*

ASDSO Testimony - May 8, 2007

State-Regulated Dams and Emergency Action Plans (EAPs)

Dam Safety Program Management Tools National Dam Safety Review Board Report, 2005

SR = State regulated HH = High Hazard Potential SH = Significant Hazard Potential

State	SR HH dams	SR SH dams	SR HH w/ EAPs	SR SH w/ EAPs	% HH w/ EAPs	% SH w/ EAPs
Alabama	*NA – Alabama has no state dam safety program.*					
Alaska	18	32	7	15	39%	47%
Arizona	93	39	68	22	73%	56%
Arkansas	102	92	91	0	89%	0%
California	334	708	334	709	100%	100%
Colorado	340	330	329	316	97%	96%
Delaware	9	27	3	0	33%	0%
Florida	72	321	72	321	100%	100%
Georgia	437	NR	14	0	3%	NR
Hawaii	96	22	49	10	51%	45%
Idaho	96	141	92	34	96%	24%
Illinois	184	297	165	117	90%	39%
Indiana	241	250	6	1	2%	0%
Iowa	78	191	0	0	0%	0%
Kansas	183	247	91	14	50%	6%
Kentucky	177	213	6	0	3%	0%
Louisiana	29	65	21	4	72%	6%
Maine	25	80	23	48	92%	60%
Maryland	66	80	58	38	88%	48%
Michigan	79	133	77	128	97%	96%
Minnesota	39	154	35	0	90%	0%
Mississippi	310	81	32	2	10%	2%
Missouri	455	132	25	15	5%	11%
Montana	102	131	96	0	94%	0%
Nebraska	129	212	116	7	90%	3%
Nevada	147	124	93	4	63%	3%
New Hamp.	89	193	87	133	98%	69%
New Jersey	202	366	191	222	95%	61%
New Mex.	170	92	13	0	8%	0%
New York	384	757	201	53	52%	7%
N. Carolina	1006	657	195	25	19%	4%
N. Dakota	28	92	12	1	43%	1%
Ohio	411	559	145	110	35%	20%
Oregon	122	181	72	15	59%	8%
Pennsylvania	785	257	692	118	88%	46%
Puerto Rico	34	1	34	0	100%	0%
Rhode Island	17	41	2	1	12%	2%
S. Carolina	153	481	153	481	100%	100%
S. Dakota	47	144	30	6	64%	4%
Tennessee	148	205	148	5	100%	2%
Texas	815	758	87	12	11%	2%
Utah	188	203	182	50	97%	25%
Vermont	57	133	14	29	25%	22%
Virginia	136	278	118	156	87%	56%

Washington	145	196	114	59	79%	30%
West Virginia	267	75	182	57	68%	76%
Wisconsin	214	190	92	17	43%	9%
Wyoming	79	116	33	5	42%	4%
Total	**9338**	**10,077**	**4700**	**3360**	**Av: 57%**	**Av. 18%**

ASDSO Testimony - May 8, 2007

Survey of ASDSO State Reps, August 2006

Cross-Border Effects of Dam Failures
1.Would failure of any state-regulated dams in your state adversely affect neighboring states?
2. Which states have dams that pose a potential dam break threat to your state?

State	*1. Would failure of any state-regulated dams in your state adversely affect neighboring states?*	*2. Potential threat from:*
AL	*(Alabama has no state dam safety program.)*	GA, TN
AK	Canada is planning to build a dam that would put Alaska at risk if it failed. A 902' high dam which would become the fifth tallest dam in the world is under permit review on a tributary of the Stikine River adjacent to Wrangell, Alaska. There is no threat to Canada from dams in Alaska.	Canada
AZ	Luna Dam is a significant hazard dam in Arizona, the failure of which would result in property damage in **New Mexico**.	NV, UT
AR	Little Flint Creek Dam located in Benton County, Arkansas, S18,T18N,R33W, if failed would impact Flint Ridge, **Oklahoma**. Normal volume of reservoir is 18300 acre-feet. Lake Erling Dam located in Lafayette County, Arkansas, S31,T19S,R23W, if failed would impact Springhill, **Louisiana**. Normal volume of reservoir is 2350 acre-feet.	MO, OK
CA	We have very few dams that are on the border. Four dams would impact **Nevada**.	NV
CO	Failure of dams in Colorado (12-18 dams that vary in hazard classification from high to significant) could affect **UT, NM, WY, NE, and KS**. The impacts would vary in magnitude from substantial flooding with damage and potential life lost to high channel flows. Colorado River: The only non federal dam on the main stem Colorado River is Dillon, Owned by Denver Water. It will affect Utah with a flow of about 5 times that of the historic peak flow in 1984 of 70,000 cfs. The only significant population center in Utah that would be significantly affected is Moab, in Colorado several cities would be impacted. Taylor Draw Dam (Kenny Reservoir) on the White River at Rangely is about 20 miles from the Utah border. Utah is pretty much uninhabited in this area. Some ranches along this stretch may be affected. Baxter Dam (McAndrews Lake) is now restricted, we are having some problems with the owner maintaining reduced reservoir levels (court action is pending). Failure could damage the Baxter Pass Road south of Bonanza, Utah. The dam is about 10 or 12 miles from the state line and about 30 or 35 miles up from the confluence with the White River in Utah. Lower Big Creek, Three Mile, and Ginger Quill Dams are just out of Wyoming in the North Platte River Basin with mainly ranch land downstream. Many more low hazard dams could affect adjoining states, but the impact would probably be minimal.	NM, UT

CT	There are one or two small dams in the northwest part of the state that could minimally affect **New York**.	MA, NH, NY
DE	(no response)	
D.C.	*Response from MD: Looking at Wash DC using VirtualEarth.com, there are three large reservoirs. They are: Dalecalia Reservoir, northwest DC, on the border with MD Georgetown Reservoir, west side of DC adjacent to Potomac River McMillan Reservoir, near Howard University in the center of DC* *Except for Dalecarlia, which I knwo is operated by the Corps of Engineers as part of the National Aqueduct system, I don't know if they have dams associated with them or if anyone is looking at them.*	
FL	No rivers flow out of Florida.	
GA	Yes, the failure of Buford Dam, which impounds Lake Lanier, could cause a domino effect of dam breaks on the Chattahoochee River, which is the border between Georgia and **Alabama**. Up north, failure of a federal dam (TVA's Blue Ridge Dam) could cause flooding in both **Tennessee** and **North Carolina**.	TN
HI	NA	NA
ID	Failures of approximately 18 Idaho dams could impact **Wyoming, Utah, Oregon and Washington.** Loss of life and extensive property damage is likely to occur. Most of these dams are federally owned or regulated, but a few are privately owned. The dams are: ID00077 Twin Lakes Dams ID00068 Oneida Dam ID00175 Glendale Dam ID00071 Lamont Dam ID00074 Weston Dam ID00079 Foster Dam ID00457 Smoky Canyon No. 2 ID00375 Texas Basin Dam ID00278 Deer Flat Dams ID00280 Arrowrock Dam ID00279 Anderson Ranch Dam ID00288 Lucky Peak Dam ID00056 Brownlee Dam ID00057 Oxbow Dam ID00055 Hells Canyon Dam ID00054 C J Strike Dam ID00287 Dworshak Dam ID00319 Albeni Falls Dam	NV, UT, WY
IL	I do not think any Illinois dams would materially impact other states. Might be a couple in Wisconsin that would impact Illinois . With large rivers on 3 sides (well 2.75) our water just blends in when it reaches the border.	IN, WI
IN	Staff estimates that there are at least 5 non-federally owned dams in Indiana that might adversely affect an adjacent state if they failed. The states impacted would be **Illinois, Michigan and Ohio.** One additional dam in Indiana impounds a lake (500+acre) located mostly in an adjacent state. Although the breach wave from this dam would damage Indiana, the loss of the lake could have a significant economic loss in the adjacent state. There is one federally owned dam that would likely affect an adjacent state. Since Indiana does not require breach inundation studies, the potential damage and loss of life in the adjacent state would be difficult to estimate.	MI, OH
IA	Failure of Lake Rathbun Dam would impact **Missouri.** The Rathbun Dam is owned and operated by the US Army Corps of Engineers. It is not regulated by the state of Iowa.	NE, WI
KS	Several small non-federal dams along the borders of **Nebraska, Missouri**, and **Oklahoma** could adversely affect the bordering states with minor flooding and potentially some economic loss. There are two larger dams located on streams	NE, OK

<table>
<tr><td></td><td>that cross the Missouri line that could impact the state of Missouri more significantly due to the size of the structures. However, we have no reason to believe that failure of these two dams would be a threat to life in Missouri. One of these dams is located in Cherokee County. It is a low head dam owned by the Empire District Electric Company on Spring Creek three stream miles from the Missouri line. There other dam is located in Linn County and is owned by Kansas City Power and Light Company. It is located approximately 17 stream miles from the Missouri line on the North Sugar Branch of the Marais Cygnes River. It is 76 feet high and impounds 85,000 acre-feet of water at the top of dam. We have not attempted to evaluate federal dams which might impact border states.</td><td></td></tr>
<tr><td>KY</td><td>Should it fail, Wolf Creek Dam, a federal dam which impounds L. Cumberland, would have a devastating and widespread impact on Tennessee. KY has no dams on the state inventory that would affect a neighboring state. Surface Mining may have some. (Coal waste dams not included in estimate – Martin County tailings impoundment failure of Oct. 2000 contaminated the Big Sandy River, affecting WV, possibly other states..)</td><td>VA</td></tr>
<tr><td>LA</td><td>Two federally regulated dams would affect parts of Texas. One is Caddo Lake (USACE) and the other is Toledo Bend (FERC).</td><td>AR, TX</td></tr>
<tr><td>ME</td><td>Several of the Federal Dams including FERC-regulated structures most certainly would affect other states. There are 4 dams upstream of NH and 11 dams upstream of Canada . Twenty-one dams are on the NH/ME border (Salmon Falls River), and four are on the Canada/ME border (St Croix River). Altogether, 15 dams upstream of NH or Canada could cause cross-border damages. Some could be very bad. Aziscohos for instance could conceivably take out most NH Towns along the Androscoggin River.</td><td>NH</td></tr>
<tr><td>MD</td><td>Yes, 6 dams that could impact WV, VA, and PA. Failures could cause property damage and may result in loss of life. The dams are: Dam/Reservoir Names: Ft. Ritchie/Lower Lake Royer (Dam No. 70), Jennings Randolph (Dam No. 69) Savage (Dam No. 14), Frostburg Reservoir (Dam No. 9), Potomac River Dam Nos. 4 and 5 (Dam Nos. 78 & 138).</td><td>DC, PA</td></tr>
<tr><td>MA</td><td>NH response: Lastly, I know that the two dams in Massachusetts that are part of the field trip for the Boston Conference would also impact other states if they were to fail. The failure of the Wachusett Dam would cause significant flooding along the Nashua River in New Hampshire, and the Quabbin Reservoir Dams would cause significant flooding in Connecticut.</td><td>NH, NY</td></tr>
<tr><td>MI</td><td>We estimate there to be about 13 Michigan dams that could impact our neighboring states with 12 potentially impacting Wisconsin and 1 impacting Indiana.</td><td>IN, WI</td></tr>
<tr><td>MN</td><td>We don't think failure of any high hazard dam regulated by Minnesota DNR would result in adverse impacts in other states or Canada. Failure of some of the low or significant hazard dams may cause some damages in adjacent states, but we don't have information available to provide a good answer to that question.</td><td>WI</td></tr>
<tr><td>MS</td><td>No</td><td></td></tr>
<tr><td>MO</td><td>Yes, 3 state regulated dams (2 HH, 1LH) would affect Oklahoma & 4 (1 SH, 3 LH) would impact Arkansas:
<table>
<tr><th>ID # \</th><th>Dam Name</th><th>County</th><th>Ht (Ft)</th><th>Surf Area of Lake (Acres)</th><th>Haz Class</th><th>State Impacted</th></tr>
<tr><td>MO20511</td><td>Lost Creek E-1</td><td>Newton</td><td>46</td><td>90</td><td>1</td><td>Oklahoma</td></tr>
<tr><td>MO20781</td><td>Lost Creek A-1</td><td>Newton</td><td>49</td><td>55</td><td>1</td><td>Oklahoma</td></tr>
<tr><td>MO20354</td><td>Fisher Lake</td><td>McDonald</td><td>40</td><td>20</td><td>3</td><td>Oklahoma</td></tr>
</table></td><td>IA, NE</td></tr>
</table>

	MO31953	Fourche Creek #8	Ripley	49	55	3	Arkansas	
	MO31778	Fourche Creek #9	Ripley	44	23	3	Arkansas	
	MO31860	Fourche Creek #11	Ripley	45	69	3	Arkansas	
	MO31408	Fourche Creek #7	Ripley	68	170	2	Arkansas	
MT	For the most part, Montana state boundaries fall on a drainage divide to the south. Near the north, there are a few reservoirs that flow into **Canada** (Lake Sherburne comes to mind). The only dam I know that has an interstate inundation area is Noxon Rapids Dam which extends into **Idaho** (FERC regulated dam).							ID, Canada
NE	The failure of 3 dams in Nebraska could affect neighboring states: Gavins Point Dam (SD01094), Harlan County Dam (NE01066), and Kingsley Dam (NE01048). The failure of Gavins Point Dam, located across the Missouri River on the Nebraska-South Dakota border, could affect towns along the Missouri River in **Nebraska, South Dakota, Iowa, and Missouri.** The failure of Harlan County Dam, located on the Republican River in south-central Nebraska, could affect towns along the Republican River in Nebraska and Kansas and along the Kansas River in **Kansas**. A breach routing analysis of Kingsley Dam (when full) was carried downstream to the point where the Platte River empties into the Missouri River on the Nebraska-Iowa border. At that point, the Platte River would still be one foot above the 500-year flood level, so I imagine that could cause some additional downstream flooding along the Missouri River in Nebraska and Iowa. The extent of the flooding downstream of Gavins Point Dam would depend on if the flooding was only due to a failure at Gavins Point Dam, a failure in series of Fort Randall Dam and Gavins Point Dam, or a failure in series of Oahe Dam, Big Bend Dam, Fort Randall Dam, and Gavins Point Dam. Using the worst-case scenario, towns in South Dakota that could be flooded include: Yankton (part of the town), Vermillion (part), Akron (part), Westfield (part), North Sioux City (all of the town), and Riverside (all). Towns in Iowa that could be flooded include: Sioux City (part), Sergeant Bluff (all), Salix (all), Sloan (all), Hornick (all), Whiting (all), Onawa (all), Turin (all), Blencoe (all), Little Sioux (all), Mondamin (all), Modale (all), Missouri Valley (part), Carter Lake (all), Council Bluffs (most), Pacific Junction (all), Glenwood (part), Bartlett (all), Percival (all), Thurman (part), Riverton (part), and Hamburg (most). Towns in Missouri that could be flooded include: Watson (all), Phelps City (all), Corning (all), Craig (all), and Mound City (part). Towns in Kansas that could be flooded due to a failure of Harlan County Dam include: Republic (part), Scandia (most), Concordia (part), Clyde (all), Clifton (part), Morganville (all), Clay Center (part), Wakefield (part), Milford (all), Camp Forsyth (all), Junction City (part), Fort Riley (all), Ogden (part), Manhattan (a small part), Belvue (all), Rossville (all), Perry (most), and Lawrence (part). I would guess that a failure of Kingsley Dam could cause some flooding in Iowa at Pacific Junction and Bartlett.							WY
NV	Dams on both forks of the Owyhee River (small argument with BIA over jurisdiction on some) flow into rural **Idaho**; Boulder and Davis Dams on the Colorado River (technically not state Regulated as they are under BuRec) affect **Arizona** and **California**, as well as **Mexico**; a few small dams that have unknown but likely minimal threats to **Oregon, Utah, California** and **Idaho**. There are federal dams in CA that would greatly impact northern NV.							CA, UT
NH	New Hampshire has 5 significant hazard dams on the Salmon Falls River, the border between **Maine** and New Hampshire in the southern parts of the States, whose failures would have impacts on roads and residences in Maine.							ME, MA, VT

	There are 6 high hazard and 2 significant hazard dams on the Connecticut River, the boundary between New Hampshire and **Vermont**. Several different Vermont municipalities could be impacted upon dam failure. One of the high hazard dams on the Connecticut River (the Moore Reservoir) would also impact Massachusetts, in addition to Vermont, if it were to fail. There is one high hazard dam on the Spickett River whose failure could have impacts on roads and homes in **Massachusetts** if it were to fail. The Corps inundation maps for their flood control dams that are located in NH don't extend to Massachusetts, but based on the depth of flooding where they do terminate, I estimate that the failure of the Everett Dam and the Franklin Dam would impact Massachusetts and the failure of their Surry Mountain and Otter Brook Dams would impact Vermont and Massachusetts. Also, in addition to the dams that Bethann mentions on our border with Maine, there are several dams on the Androscoggin River in New Hampshire that would impact Maine if they were to fail, but I believe Tony Fletcher has already described them in his narrative.	
NJ	Yes, we have three dams that could impact **PA** and **NY**. Of the three, one dam would result in major flooding along the Delaware River. Merrill Creek Reservoir and Yards Creek Reservoir impact PA and Wawayanda Lake impacts NY. NJ is aware of 7 reservoirs in PA that would have an impact in NJ and 7 reservoirs in NY that also would result in significant flooding along the Delaware River.	NY, PA
NM	Costilla Dam, on the Rio Costilla, is a large high hazard potential earthen dam where failure would impact **Colorado**. Ute Lake Dam is a large significant hazard dam where failure would impact **Texas.**	AZ
NY	Yes - there are several dams which impound the upper Delaware River. Some of these are state-regulated. Others are FERC licensed, but may become state regulated if the owner applies for license surrender. There are also about 5 other High Hazard dams with inundation areas in other states to the east and south of New York, namely **NJ, CT, MA, VT, PA.** Swinging Bridge Dam - has been in the news due to a depression that formed on the dam's crest in May 05 (currently FERC regulated). Repairs are in progress under FERC regulatory authority. Failure could affect communities on the Delaware River in NY, PA, and NJ. 2 NYC water supply dams on the upper Delaware River (Cannonsville Dam and Downsville Dam) - failure could affect communities along the Delaware in NY, PA, and NJ. *(NJ Response: NJ is aware of 7 reservoirs in PA that would have an impact in NJ and 7 reservoirs in NY that also would result in significant flooding along the Delaware River.)*	NJ, VT
NC	We are researching the data to find the North Carolina Dam Safety Program high hazard dams that could affect other states. At this time, I know of four major state regulated dams that could cause damage in **South Carolina**: • TRANS-024, Toxaway Lower Dam, Toxaway River, 21,000 acre-feet, damage would be • environmental upstream of and in Lake Jocassee. • POLK-009, Turner Shoals (Lake Adger) Dam, Green River, a tributary to the Broad • River, 16,000 acre-feet, loss of life and damage to property and	GA, VA

	• infrastructure possible in South Carolina. • RUTHE-003, Lake Lure Dam, Broad River, 45,000 acre-feet, loss of life, damage to • property and infrastructure possible in South Carolina • CLEVE-018, Moss (Kings Mountain) Lake Dam, Buffalo Creek, a tributary to the Broad • River, 51,000 acre-feet. Loss of life and damage to property and • infrastructure in South Carolina possible. • CLEVE-044, Hughs Lake Dam • CLEVE-003, Kings Mountain City Lake Dam #2 • CLEVE-013, Kings Mountain Lake Dam #1 • MECKL-023, Arrowood • ANSON-026, Bonsal Tailings Dike • HENDE-107, Headwaters Saddle Dam (I will need to add the saddle dike separate from the main dam. Saddle dike is what may affect SC) **Dams Regulated by the North Carolina Utilities Commission that would affect South Carolina:** HENDE-001, Summit Lake, Green River, a tributary to Broad River **Dams that may affect Virginia:** • ALLEG-010, Mountain Lake Dam • WATAU-027, Beech Mountain • NCUC Regulated Dams that could affect Virginia: • Lake Hyco, Hyco River • Lake Mayo, Mayo Creek • Belews Creek Dam, Dan River	
ND	Yes, two or three dams would impact **South Dakota**. Not sure how bad it might be, probably a few homes. Other states whose dams could potentially impact North Dakota include Montana, South Dakota, Minnesota, though I'm not aware of any. I'm quite sure there are a couple of dams in Canada could impact ND.	MT, MN, SD, Canada
OH	On the west side, we have Grand Lake St. Marys , and if that goes, it will affect **Indiana.** On the northeast side, the Mahoning River flows into PA. The inundation mapping for Lake Hamilton indicated shallow flooding along the Mahoning in **PA**. Also, Lake Evans, which is upstream of Hamilton and would cause Hamilton to fail, should be included. USACE structures contributing to the Mahoning include Mosquito Creek, MJ Kirwin (West Branch), and Berlin. Impact from Lake Milton and Meander Creek dams is unknown because of lack of inundation mapping. These five are 20-45 miles from the border.	IN, PA
OK	Yes, about 10 dams could affect **Arkansas, Texas, and Kansas**, with loss of up to 50 lives.	AR, MO, TX
OR	Several of the Federal Dams including FERC-regulated structures most certainly would.	ID, NV
PA	Yes. We have state regulated dams and federally regulated dams that would impact areas in other states if they failed. We estimate that we have 21 state regulated dams that would impact other states upon failure. The states are **New York, Ohio, West Virginia, Maryland and New Jersey**. Probably the two dams that would cause the largest impact in other states if they failed are Thomas W. Koon Dam and Lake Gordon Dam. These two dams are located back-to-back on Evitts Creek in Bedford County, Southern Pennsylvania. They are water supply dams owned by the City of Cumberland, Maryland. Failure would impact the Cumberland metro area with a population of up to 1000, one school and one	MD, NJ, NY, OH, WV

	assisted care living facility potentially impacted. *(NJ Response: NJ is aware of 7 reservoirs in PA that would have an impact in NJ and 7 reservoirs in NY that also would result in significant flooding along the Delaware River.)*	
PR	NA	NA
RI	No	
SC	SC and Georgia are separated by the Savannah River and any State Regulated Dam failure in either state would probably not have any adverse impact.	NC
SD	No state-regulated dams that would adversely affect other states.	NE. ND, WY
TN	Windstone Dam in Hamilton County, TN is about 1/2 mile above the state line and would cross into Catoosa County, **GA**. It might cause flooding of a road and some private property, although no loss of life would be expected. I did not include any Corps or TVA dams. A number of them would probably have **multi-state effects**. Nickajack Dam in TN just above the **Alabama** line would. A number of TVA dams in NC and VA probably would affect TN.	GA, KY, NC, VA
TX	Yes, there are two dams that could affect **Louisiana and Oklahoma**. One of the dams is Toledo Bend Dam on the border of Texas and Louisiana. It has a FERC license but is still a state-regulated dam. It is the largest body of water in Texas. Failure could affect a considerable number of people in both states. The other dam is Palo Duro Dam in the panhandle. Consequences would be less. There are 2 dams on the Rio Grande, both owned by the International Boundary and Water Commission, so they are not state-regulated. both would have major impact on **Mexico** if they would fail.	LA, NM, OK, Mexico
UT	A dozen or so would affect **Wyoming, Idaho, Nevada, Arizona, Colorado**. Several could involve loss of life, but mostly it is property damage. Woodruff and Long Park dams would substantially affect Wyoming The **Quail Creek failure affected Arizona and Nevada in 1989** and Sand Hollow Dam would do the same today.	ID, NV, WY
VT	Yes. Many, say a dozen—not counting some that drain into **Quebec**, and several on the Connecticut River between **NH** and VT. Harriman dam, VT00025 is above the mothballed Yankee Rowe nuclear powerplant in Mass. Pownal Tanning Dam VT00220, is expected to have some truly nasty sediments that would be **New York** bound	NH, NY
VA	It is believed that flooding could be caused in **North Carolina, West Virginia, Kentucky and Tennessee**. Of course we are talking primarily for short distances into those states and probably minimal flooding.	MD, NC
WA	None	ID
WV	Yes, at least one. Lake Lynn Dam near Morgantown WV. (ID#: WV06128) would affect Pt. Marion, **Pennsylvania** if it failed. (Map available) *(KY included in next column because of coal waste dams, which are not considered in this estimate.)*	*KY*, MD, PA, VA
WI	Yes, the most significant potential for adverse impact are from failure of dams on the Menominee or Montreal Rivers between Wisconsin and Upper **Michigan**, or on the Mississippi and St. Croix Rivers between Wisconsin and **Minnesota/Iowa**. All of these dams, except for the Saint Croix Falls Dam, are regulated by FERC or the Corps. Saint Croix Falls Dam is a high hazard state regulated dam that could	MN, IL (state regulated) MI, IA (FERC or

	affect developed areas along the St. Croix River in Minnesota. There are about a dozen dams on rivers that originate in Wisconsin and flow into northern **Illinois** that could case some property damage but would not likely cause loss of life.	Corps regulated)
WY	6 federal and 2 private dams in WY could affect parts of **Nebraska, Idaho, South Dakota and Utah**. Other than the 2 biggest federal dams, no dollar amounts have been calculated.	ID, UT

Potential International Impact	
Canada	Dams in ME, MT & VT could affect Canada. Canadian dams could threaten AK.
Mexico	Dams in NV & TX could affect Mexico, and Mexican dams could affect TX. Warren Samuelson, head of dam safety in TX, was notified on Aug. 8, 2006 of an unsafe dam in Juarez, Mexico. The Army Corps of Engineers had inspected the dam and declared the dam unsafe and could breach at any time. If a dam breach occurs it will cause serious flooding in downtown El Paso. Precautionary evacuations of 1500-2000 people were ongoing. Two ports of entry had been closed. The Texas Department of Public Safety was assisting with evacuations and monitoring as the City of Juarez is pumping water out of the dam. Although TX does not have jurisdiction, this is an example of a dam that could have devastating effects on an area on the other side of a border.

ASDSO Testimony - May 8, 2007

Selected Dam & Levee Failures and Incidents in the U.S. from 2000-2006
Association of State Dam Safety Officials (www.damsafety.org)

Date	Dam	Location	Reported Effects to the Public	Property Damage Overview	Comments
7/28-29, 2006	Needwood Dam	Gaithersburg, MD	2,200 + evacuated for 3 days	NEAR FAILURE	65' high, 40-year-old earth dam sprang 7 leaks at toe; lake reached 23' above flood stage
6/7/2006	Geary levee	Upper Klamath Lake, Oregon		Flooded Highway 140 & 2,000 acres of farmland, $4.5 M to repair highway.	
3/14/2006	Kaloko Reservoir Dam	Island of Kauai, Hawaii	7 deaths	Extensive environmental damages, several homes destroyed, crops destroyed	Earth dam built in 1890
12/14/2005	Taum Sauk	Lesterville, MO	3 children critically injured	Toops family home demolished; family of 5 swept away. State highway washed out; at least 3 trucks swept from road.	Instrumentation failure caused to much water to be pumped into reservoir
10/18/2005	Whittenton Pond Dam	On Mill R., Taunton, MA	2,000 + evacuated, including a housing development for the elderly	NEAR FAILURE	173-year-old wooden dam , about 100' across, about 12' high,
9/2005	Levees	New Orleans, LA	About 1,500 deaths	Billions in property damage	
7/2/2005	Hadlock Pond dam	NY	At least 4 homes destroyed, about 12 with moderate to severe damage	Roads washed out, power outages. State Rte 149 closed, major link between upstate NY & VT. About $1Million in damages.	Embankment dam completed 5/05. 220-acre lake, 12-15' deep. Heavy rain during first filling caused piping failure. Suspected construction flaw.
11/24/2004	Keith Lake dam	St. Clair County, near Odenville, Alabama	Downstream homes evacuated	Decreased property values, environmental damages, ~20% damage to downstream dam	Lake ~1200 yards long, 450 yds wide, 40' deep. 60-70' earth dam. Earth dam. Failure not covered by media.
10/11/2004	Victor Lake (aka Upper Stinchomb)	Fayette County, Georgia	They had to rescue around 20 people.	Approximately 20 trailers received damage.	15 acre lake that failed suddenly and flooded part of a trailer park.
7/13/2004	21 dams failed. Another 26	South New Jersey	350 homes flooded	Extensive, >$30 million estimate	Heavy rains, 13" in 12 hrs

	dams damaged.				
7/3/2004	Small earth dam	Decatur, Arkansas		At least 5 businesses damaged	Heavy rains, 5-6”
6/3/2004	Levee – Upper Jones Tract	Near Stockton, CA	About 20 houses affected	Thousands of acres of crops destroyed. Declared federal disaster, with $90 million in damage.	350-foot section washed out.
5/4/2004	Lake Susan dam	Montreat, North Carolina	Several homes evacuated	The Montreat Conference Center, owner of the 79-year-old dam, plans to repair the dam and has raised $900,000 for repairs.	Collapse of a 35' section of the dam's upstream wall.
4/24/2004	Small earth dam on 10-acre lake	Pearl County, Mississippi	2 homes flooded, 1 car swept off road		Heavy rains, 6-10”, dam near Anchor Lake subdivision, between Picayune and Poplarville
3/12/2004	Big Bay Lake dam	Near Purvis, Southern Mississippi	98 homes damaged or destroyed	2 churches, fire station, and bridge damaged or destroyed; SBA estimate: >$2.2 million. $2.5 million dam, > $50K Red Cross	900 -1,100 acre lake; 3.5 billion gallons; quarter-mile-wide flood path extending at least 17 miles downstream
8/9/2003	Private dam	Penn Run, Indiana County, W. Pennsylvania	Up to 200 campers evacuated from Yellow Creek Camp Ground		A private dam about three miles upstream overtopped.
6/22/2003	Lake Manatee gate failure	Florida	2 homes destroyed; 600 homes evacuated		Dam did not fail; gate stuck in closed position, causing lake to swell beyond its banks.
6/14/2003	Polk Township dam	Polk Township, Pennsylvania	20 homes evacuated, nursing home put on alert while the dam was stabilized.		Officials also concerned about Twin Lakes Dam in Smithfield Township;.
5/27/2003	Lake Upchurch and McLaughlin Lake dams	North Carolina		Lake Upchurch dam reconstruction costs estimated at more than $350,000.	4 additional dams damaged; another 16 overtopped during rainfall event (4-6” in less than 24 hrs)
5/26/2003	Hope Mills	Hope Mills, North Carolina	1,600 evacuated	est. $2.1 M damages; estimated cost of rebuilding dam: $6M	Heavy rains, stuck dam gate
5/13/2003	Silver Lake & Tourist Park dams	Near Marquette, Michigan		$102 M, incl $127,000 in emergency/ public safety, $3 M in roads/ bridges, $10.4 M in utilities, $4 M fisheries, soils & trees &	Silver Lake fuse plug failure, resulting overtopping & failure of Tourist

				$84 M in economic loss	Park dam
5/7/2003	privately owned dam	East Ellijay, Georgia	6 houses evacuated, 3 trailers damaged.		Heavy rains
5/5/2003	Rumph's Pond dam (private, low hazard)	Dorchester County, South Carolina		Minimal damage to Norfolk Southern Railway property; about $144,000 in damages to the dam	Sabotage suspected; criminal charges filed. 21-acre lake, 13' high dam, 70 acre-foot impoundment
9/2002	Windy Hills Lake dam	Harrison County, Mississippi	Man died after driving around a barricade placed at a washout from the failure.		
8/12/2001	Hearns Pond Dam	Delaware		$500,000. Washout of U.S. 13A near Seaford, Delaware.	Heavy rain
10/11/2000	Massey Energy coal waste impoundment	Martin County, Kentucky		300 M gals of slurry released into the Big Sandy and Ohio rivers.	Dam did not fail but bottom of impoundment collapsed into mine shaft.

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

Testimony of the
ASSOCIATION OF STATE DAM SAFETY OFFICIALS
on the
Current Dam Safety Needs in the United States
Subcommittee on Economic Development, Public Buildings, & Emergency Management
Committee on Transportation and Infrastructure
U.S. House of Representatives
July 26, 2006

Dear Chairman Shuster and Members of the Subcommittee:

The Association of State Dam Safety Officials (ASDSO) is pleased to offer this testimony concerning the condition of the nation's dams and the critical role that the federal government has in assuring the safety and security of dams.

ASDSO is a national non-profit organization of more than 2,300 state, federal and local dam safety professionals and private sector individuals dedicated to improving dam safety through research, education and communications. We represent the dam safety programs of the states and our goal simply is to save lives, prevent damage to property and to maintain the benefits of dams by preventing dam failures. The state dam safety programs regulate 95% percent of the 79,000 dams in the United States. The states and these programs look to Congress and the Federal government for their continuing leadership and support.

The eyes of the nation were focused on dam safety in the 1970s when several dramatic dam failures occurred, resulting in catastrophic consequences. The federally owned Teton Dam failed in 1976, causing 14 deaths and over $1 billion in damages. Failures like Teton are a constant reminder of the potential consequences associated with dams and the obligations to assure that dams are properly constructed, operated and maintained.

The recent dam failures in Hawaii, Missouri, and New York, and the near failure in Massachusetts last year have brought into tragic focus the potential consequences of deteriorating and unsafe (deficient) dams. Recent extreme rainfalls in the Northeast this summer brought further attention to the vulnerability of dams in Maryland, New York and Pennsylvania.

After the Teton failure and other deadly failures, and prompted by the Kelly Barnes Dam (Toccoa Falls) failure in Georgia, also in the late 1970s, President Carter realized that federal programs were needed to address the dam safety issue. Based on his administration's groundwork, the federal government has been leading the way by example with the dams they own and regulate. Additionally, the **National Dam Safety Program** exists today administered by the DHS, Federal Emergency Management Agency. For 10 years, the program has been providing assistance to state dam safety programs, continuing education to dam engineers and technological advancements through research for the dam engineering profession. Additionally, the Program directs the US Army Corps of Engineers to maintain a national tracking system that catalogues dams in the US.

Dams are a critical part of the nation's infrastructure and provide vital benefits such as flood protection, water supply, hydropower, irrigation and recreation. Yet these dams have the potential for failure and tragic consequences. As downstream development of dams increases and dams continue to age and deteriorate, they demand greater attention and investment to assure their safety.

The Association of State Dam Safety Officials respectfully requests that this Subcommittee recognize the enormous value of our nation's dams and the increasing concerns for public safety because of dams. We request your support for passage of HR 4981 to continue the National Dam Safety Program and HR 1105 to create the National Dam Rehabilitation and Repair Program.

Mr. Chairman, the Association is grateful for your support and leadership in championing the reauthorization of the program through the Dam Safety and Security Act of 2002, which extended and made important additions to this successful program.

Congressman Kuhl, the Association also appreciates your commitment and support through the introduction of HR 4981 to continue this critical national public safety program.

The National Dam Safety Program

The National Dam Safety Program Act of 1996 (PL 104-303) created a national program that focused on improving the safety of the nation's dams. Congress reauthorized the program through the Dam Safety and Security Act of 2002 (PL 107-310) 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, and training and research; and through facilitating the exchange of technical information between federal dam safety partners and the states. As authorized, the program provides $6 million 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 $500,000 each year to be used for training of state dam safety engineers and $1.5 million annually 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. And now, these research funds can be used to develop better methods to assess and improve the security of dams.

According to the National Inventory of Dams—a program authorized by the National Dam Safety Program and administered by the US Army Corps of Engineers—there are over 79,500 dams in the United States. For the vast majority of these dams, the responsibility of assuring their safety falls on the shoulders of the states through regulatory programs (the remaining dams are owned or regulated by federal agencies). Because of limited staff and limited funding, most states are overwhelmed by that challenge. Table 1 attached to this testimony provides state-by-state data on the number of dams, the number of staff, the state budget and the number of dams that are considered unsafe, referred to as "deficient" in the table.

Deficient or unsafe means that these dams have been identified as having hydrologic or structural deficiencies that make them susceptible to a failure triggered by a large storm event, an earthquake, progressive deterioration, or simply through inadequate maintenance. Currently states have identified approximately 3,400 dams as being deficient, or unsafe. The number of unsafe dams has risen by 33% since 1998. In New York the state lists 51 unsafe dams all of which are classified as high hazard potential. In Pennsylvania there are 325 unsafe dams and 225 of these are classified as high hazard potential. Indiana has 76 high-hazard potential dams determined to be deficient.

There are over 10,000 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. Every member of this Subcommittee has high hazard dams in their home state. There are 785 high hazard potential dams in Pennsylvania, 815 high hazard potential dams in Texas and 25 high hazard potential dams in Maine. According to the National Inventory of Dams about 40% to 50% of the high hazard potential dams are not being inspected yearly. According to the *Model State Dam Safety Program* (FEMA No. 316), a high hazard potential dam should be inspected every year.

The task for state dam safety programs is staggering; in New York where there are over 5,030 dams there are only 8.2 full time employees assigned to the dam safety program. Indiana has about 1,100 dams with only 1 engineer and 2 inspectors and 2 engineering geologists in their dam safety program; and Maine, which has more than 639 dams, only has a staff of 1.5 full time employees.

HR 4981 provides for continuing the program and makes several important changes, which include defining a "state-regulated dam" which is critical to establishing the funding levels and incentives to states. Another change in HR 4891 is the addition of a condition assessment to be included in the updates to the National Inventory of Dams. In addition, HR 4981 provides modest increases in the authorized funds for state assistance, training, research and updates to the National Inventory.

Federal Leadership Role

There is a clear need for continued federal leadership 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:

- 1972 - Buffalo Creek Dam in West Virginia failed and killed 125 individuals;
- 1976 - Teton Dam failure in Idaho caused $1 billion in damages and 14 deaths;
- 1977 - Kelly Barnes Dam, in Toccoa Falls, Georgia failed, killing 39 Bible college students;
- 1977 - Failure of the Laurel Run Dam in Pennsylvania killed 40 people;

More recent failures have demonstrated the enormous damages that dam failures can produce:

- 1995 – Timber Lake Dam, near Lynchburg, Virginia, failed, killing two people.
- 1996 - Meadow Pond Dam in Alton, New Hampshire failed, killing one woman and causing $8 million in damages.
- 2003 - Failure of the Silver Lake Dam in Michigan 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. It also flooded a major power plant, causing the closure of two iron mines and temporarily putting 1,100 miners out of work.
- 2004 - Big Bay Lake Dam in Mississippi failed, destroying or damaging over 100 homes, two churches, three businesses, a fire station and a bridge. The failure caused lakeside property values to plunge, and prompted a $100 million lawsuit against the dam owner.
- 2005 - In July, the Hadlock Pond Dam in Washington County, New York failed, displacing residents and causing over $1 million in damages to residences and transportation arteries.
- 2005 – The cataclysmic flooding of New Orleans in September demonstrated the deadly potential posed by water retention structures.
- 2005 – In October, approximately 2,000 people were evacuated from Taunton, Massachusetts when the 173-year-old dam at Whittenton Pond threatened to break. Emergency construction of a second dam downstream of the failing structure averted a disastrous flooding of the downtown area.
- 2005 – Around the same time as the Taunton crisis, residents of Schoharie County, New York became aware of serious problems with Gilboa Dam, which impounds roughly 19 billion gallons of water. Engineers say that the dam could collapse under extreme weather conditions. If this happened, many residents would have only minutes to escape; the villages of Schoharie and Middleburgh would be submerged under 30 to 40 feet of water, and the floodwaters would carve a path of destruction up to 60 miles long. Action is being taken: Local officials have issued flood preparedness manuals and are working to identify residents who may have trouble evacuating if the dam fails, and crews are working on emergency repairs for the dam. The long-term plan calls for a $200 million rehabilitation project.
- 2005 - In December, the sudden failure of Taum Sauk Dam in Missouri released a wall of water through Johnson's Shut-Ins State Park. The flood demolished the home of the park superintendent and his family, who were swept at least a quarter-mile away into the early morning darkness. Miraculously, all five members of the family survived. Had the dam failed during the summer months, it is likely that many lives would have been lost, as the park is a popular destination for campers and swimmers.
- 2006 - In March, the failure of Kaloko Dam on the Hawaiian island of Kauai killed seven people and caused significant damage to property and the environment.
- 2006 –In late July, following a ten-hour storm that dumped a foot of rain in an area near Gaithersburg, Maryland, the Lake Needwood dam developed severe leakage as the lake rose 23 feet above normal pool. Roughly 2,200 people were evacuated from their homes for up to three days as workers labored feverishly to lower the lake.

Potential dam failures are not merely a local or state concern, 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. Continuation and 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

The National Dam Safety Program has been successful in assisting the state programs. The training program is one aspect of this success ($500,000/annually). 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.

The Research Program ($1.5 million/annually) 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 at the National Performance of Dams Program at Stanford University as well as a national clearinghouse and library of dam safety bibliographic data at ASDSO.

Research funds are currently being used to provide security training, security assessment tools and best management practices for states to utilize in addressing potential terrorist actions against the 75,000 non-federal dams. The small increase ($500,000) in the funding levels authorized by the 2002 act was intended to address dam site security. Dam site security is now an urgent area of concern for state dam safety officials, both in training needs and in research to better understand and respond to potential threats to dams.

The most valuable benefit to the state programs comes from the State Assistance Program. The assistance is based on the number of dams in each of the participating states and is 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; and
- State policies that address dam site security at non-federal dams.

Use of these funds helps states meet their own unique challenges. States have utilized funds to perform dam failure and dam stability analyses, to hire additional staff to conduct inspections and to conduct owner education workshops. In addition, 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 disappointing to see that appropriations and FEMA's budgeting priority for the Program over the past two years are well below the authorized levels, just as we begin to realize the benefits of the state assistance program—dam safety inspections have increased, the number of Emergency Action Plans, used to notify and evacuate downstream populations in the event of a failure, have increased. Despite the growing number of unsafe dams, the increase in dam failures, and the increase in funding approved by Congress in the Dam Safety and Security Act of 2002 to $8.6 million, appropriations have remained at the previous level of $5.9 million. States have not realized any increase in assistance. Budget reductions and stiff competition with other FEMA mitigation programs such as earthquake and hurricane planning have further reduced the state grant assistance funds by almost 22%.

Table 2, attached to this testimony, provides information on the amount of state assistance received for each state, the potential funding if fully appropriated at authorized levels and the amount each state will lose as a result of the reduced funding. The lost funds come at a difficult time when development below dams creates additional high hazard potential dams, dams continue to age and deteriorate and, now, security issues must be addressed by the states.

Need for a National Rehabilitation Program for Dams

While there have been modest gains in the number of dams being repaired, the number of state regulated dams identified as unsafe is increasing at a faster rate than those being repaired. The number of unsafe dams has risen by 33% since 1998 to more than 3,300. This condition will undoubtedly continue to worsen without federal leadership and an investment in the safety of our country's dams.

The Association of State Dam Safety Officials, in its October 2003 report entitled *The Cost of Rehabilitating Our Nation's Dams*, estimated that $10 billion would be needed to repair the most critical dams over the next 12 years. Out of this, needed repairs at publicly owned dams are estimated at $5.9 billion with the remaining $4.1 billion needed for privately owned dams.

ASDSO endorses passage of H.R. 1105 to create a federally administered dam rehabilitation funding program. This federally sponsored program would provide funds to be cost-shared at 65 percent federal to 35 percent state/local for non-federal publicly owned dams. The legislation would provide funds to states based on the number of high hazard dams in each of the participating states. Table 3 shows state-by-state potential funding amounts.

While HR 1105 is a good start, it does not address privately owned dams. There are more than 52,000 privately owned dams in the US. ASDSO estimates that approximately 45% of these may be in need of rehabilitation. There is a great need to begin an assistance program at both federal and state levels to help private dam owners with their rehabilitation needs. It is a public safety issue since privately owned dams are at risk of failure just as are publicly owned dams.

The America Society of Civil Engineer's 2005 Report Card for America's Infrastructure gave Dams in the United States a grade of "D." The dams across the United States are aging; 85% of the dams will be 50 years or older by the year 2020. Downstream development within the dam failure flood zone places more people at risk. When homes are built in the dam failure flood zone, a "low hazard potential" dam (low hazard: failure is not expected to cause loss of life or significant property damage) becomes a high hazard potential dam. Therefore, the dam no longer meets dam safety criteria as the potential consequences of a failure now include loss of life.

Does the country want the number of unsafe dams to continue increasing? Will the federal government find a way to assist dam owners or will future catastrophic dam failures with resulting loss of life continue to occur? It is a reasonable expectation of every American to be protected from preventable disasters such as dam failures.

ASDSO strongly urges the Subcommittee's support for H.R. 1105 to create a federally administered dam rehabilitation program in order to repair our nation's unsafe dams.

Dam Security of Non-Federal Dams

The events of September 11, 2001 have focused unprecedented attention on the security of our nation's critical infrastructure, including dams. Dams, in fact, have been identified by intelligence and law enforcement agencies in specific threat alerts. Federal agencies that own dams, such as the US Army Corps of Engineers and the Bureau of Reclamation, have been conducting vulnerability assessments and security improvements on these federally owned dams. Sharing of federal government expertise, and providing federal coordination and assistance to the states and to private dam owners is happening, but at a very slow pace.

There are clearly thousands of non-federal dams that are potential targets based on type of construction, size, purpose (water supply, hydro power, flood control); and on the population and infrastructure at risk below the dam. Federal leadership is urgently needed to provide technical and financial assistance to states for training, for conducting vulnerability assessments and for identifying and implementing security improvements on dams determined to have inadequate security programs.

ASDSO supports the continuing efforts of the Department of Homeland Security to focus expertise and funding on improving dam security programs at federal, state and local levels.

The Future of a National Dam Safety Program

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. The Program needs to continue and to be funded properly to meet public safety expectations and prevent more loss of life from dam failures.

Our country's dams are aging and deteriorating, the number of dams determined to be unsafe is increasing and there is a tremendous demand for funds to repair unsafe dams.

Mr. Chairman and members of the Subcommittee, the Association requests, in the strongest terms possible, that you provide the necessary priority to the safety of our nation's dams by passing HR 4981 and HR 1105, and that you demand aggressive management of the National Dam Safety Program to achieve the results that the people who live below our dams expect.

The Association stands ready to assist the Subcommittee and staff in any way to advance the cause of dam safety. Toward that goal, please contact me or our Executive Director, Lori Spragens at 859-257-5140 if we can support the Subcommittee's important work.

ASDSO Testimony – July 26, 2007

Table 1 Association of State Dam Safety Officials
2005 Statistics on Dams and State Safety Regulation

State	Total Dams in National Inventory	Dams Under State Regulation[2]		State-Determined Deficient Dams[3]			State Dam Safety Budget	State Staff Dedicated to Dam Safety Regulation	
		Total	HH	Total	HH	SH		Total FTEs	Dams Per FTE
Alabama	1,403	0	0	0	0	0	0	0	NA
Alaska	105	82	18	29	7	7	100,500	1	82
Arizona	334	252	93	34	28	6	715,801	9	28
Arkansas	1,207	1,172	102	21	19	1	338,700	3.5	335
California	1,483	1,255	334	53	32	18	8,145,000	60	21
Colorado	1,688	1,898	340	19	7	3	1,735,600	15	127
Connecticut*	723	706	238	22	9	10	472,000	4.3	164
Delaware	61	37	9	4	3	NR	317,230	0.5	74
Florida	780	804	72	45	8	30	NR	NR	10
Georgia	4,158	4,874	437	112	112	NR	704,013	9	542
Hawaii	123	131	96	48	30	6	164,000	1.75	75
Idaho	396	372	96	5	2	3	317,547	7.5	50
Illinois	1,318	1,434	184	NR	NR	NR	306,000	4.8	299
Indiana	1,073	938	241	445	76	154	425,000	5	188
Iowa	3,275	3,272	78	18	10	8	110,000	1.25	2,618
Kansas	5,650	5,993	183	41	15	15	616,540	7.16	837
Kentucky	1,055	1,100	177	90	30	41	1,550,420	14	79
Louisiana	367	534	29	24	14	5	480,316	8	67
Maine	639	841	25	13	3	10	36,914	1.5	561
Maryland	303	389	66	27	8	5	468,020	4.75	82
Massachusetts*	1,500	2,977	333	40	22	18	500,000	4.0	744
Michigan	955	1,158	79	23	5	7	282,550	2.8	414
Minnesota	1,059	1275	310	79	5	22	305,000	3.4	375
Mississippi	3,322	3,633	39	16	14	NR	267,767	4.3	845
Missouri	4,850	661	455	36	35	1	254,464	5	132
Montana	3,301	2,882	102	15	11	4	366,531	5.25	549
Nebraska	2,156	2,156	129	NR	NR	NR	434,652	5.7	378
Nevada	497	530	147	25	4	2	225,514	2	265
New Hamp.	659	3,614	89	8	NR	4	677,294	8	452
New Jersey	805	1698	202	193	48	116	1,254,000	20	85
New Mexico	521	393	170	104	77	27	484,100	6	66
New York	1,971	5,030	384	51	51	NR	977,072	8.21	613
North Carolina	2,720	4,482	1006	143	93	28	1,162,608	16	280
North Dakota	784	3,426	28	22	5	13	200,000	4.5	761
Ohio	1,640	1,664	411	825	170	285	1,415,024	12.5	133
Oklahoma*	4,672	4,527	185	31	8	3	122,000	2.5	1,811
Oregon	875	1,237	122	3	2	1	NR	2.2	562
Pennsylvania	1,482	3,134	785	325	225	46	2,039,600	24	131
Puerto Rico	34	36	34	NR	NR	NR	600,000	9	4
Rhode Island	185	657	17	5	NR	1	113,976	1.2	548
South Carolina	2,388	2,377	153	4	2	1	200,000	2.5	951
South Dakota	2,452	2,354	47	61	8	7	NR	1.5	1,569
Tennessee	1,043	623	148	7	3	2	339,278	8	78
Texas	7,069	7,510	815	108	103	3	552,886	7	1,073
Utah	752	5,821	188	NR	NR	NR	657,900	6	970
Vermont	363	563	57	1	1	NR	299,000	2.2	256
Virginia	1,591	1,400	136	120	49	38	678,569	6.25	224

Washington	856	957	145	28	16	12	1,967,028	8.2	117
West Virginia	555	571	267	36	33	3	479,773	6	95
Wisconsin	1,154	940	214	2	NR	NR	518,750	6.25	150
Wyoming	1,420	1,410	79	NR	NR	NR	2,039,600	4.98	283
TOTAL	79,772	95,780	10,094	3,361	1,403	966	36,418,537	363.45	415 (av)

*CT, MA, and OK did not submit budget, FTE, or deficient dams data for 2005. Figures shown are from 2004.

Table 2 FEMA National Dam Safety Program State Grant Assistance Funds

Reduced Grant amounts in FY 2003 and FY 2004, Grants at full funding and
Estimated cumulative state grant losses over four year period FY 2003 through FY 2006

STATE	FY 2003 Reduced Grant Authorized at $ 6 M Appropriated at $4 M	FY 2004 Reduced Grant Authorized at $ 6 M Appropriated at $4 M	FY 2003-2006 Annual Grant if fully funded at $ 6 M	FY 2003 & 2004 Lost grant assistance over past two years	FY 2003 thru FY 2006 Projected grant loss over four years at current levels
Alabama*	$0	$0	$0	$0	$0
Alaska	$25,715	$22,990	$44,091	-$39,477	-$81,680
Arizona	$29,834	$26,672	$51,153	-$45,800	-$94,762
Arkansas	$35,898	$32,093	$61,550	-$55,109	-$114,022
California	$64,139	$57,340	$109,971	-$98,463	-$203,724
Colorado	$74,716	$66,797	$128,108	-$114,702	-$237,323
Connecticut	$46,113	$41,226	$79,065	-$70,791	-$146,470
Delaware*	$0	$0	$0	$0	$0
Florida	$41,730	$37,307	$71,550	-$64,063	-$132,548
Georgia	$144,571	$129,248	$247,880	-$221,940	-$459,204
Hawaii	$27,099	$24,227	$46,464	-$41,602	-$86,076
Idaho	$36,886	$32,977	$63,245	-$56,626	-$117,162
Illinois	$64,303	$57,487	$110,253	-$98,716	-$204,247
Indiana	$61,074	$54,601	$104,717	-$93,758	-$193,990
Iowa	$123,487	$110,398	$211,728	-$189,572	-$392,232
Kansas	$229,727	$205,378	$393,887	-$352,668	-$729,686
Kentucky	$56,460	$50,476	$96,806	-$86,675	-$179,335
Louisiana	$33,064	$29,559	$56,691	-$50,759	-$105,022
Maine	$43,774	$39,134	$75,054	-$67,200	-$139,040
Maryland	$35,371	$31,622	$60,647	-$54,300	-$112,349
Massachuettes	$74,485	$66,590	$127,712	-$114,347	-$236,589
Michigan	$44,993	$40,224	$77,144	-$69,071	-$142,910
Minnesota	$50,726	$45,350	$86,975	-$77,873	-$161,123
Mississippi	$135,482	$121,121	$232,295	-$207,986	-$430,332
Missouri	$43,280	$38,692	$74,207	-$66,441	-$137,470
Montana	$117,226	$104,801	$200,994	-$179,961	-$372,347
Nebraska	$90,205	$80,644	$154,664	-$138,479	-$286,518
Nevada	$36,063	$32,241	$61,833	-$55,362	-$114,547
New Hampshire	$49,639	$44,377	$85,110	-$76,204	-$157,669
New Jersey	$76,002	$67,946	$130,311	-$116,675	-$241,405
New Mexico	$37,842	$33,831	$64,884	-$58,094	-$120,199
New York	$87,074	$77,844	$149,295	-$133,672	-$276,573
North Carolina	$164,711	$147,253	$282,411	-$252,858	-$523,174
North Dakota	$41,368	$36,983	$70,929	-$63,507	-$131,398
Ohio	$79,857	$71,393	$136,922	-$122,593	-$253,651
Oklahoma	$170,676	$152,585	$292,638	-$262,015	-$542,120
Oregon	$61,634	$55,101	$105,677	-$94,618	-$195,769
Pennsylvania	$63,678	$56,928	$109,181	-$97,755	-$202,260
Puerto Rico	$24,031	$21,484	$41,204	-$36,892	-$76,331
Rhode Island	$31,097	$27,801	$53,319	-$47,739	-$98,775
South Carolina	$96,762	$86,506	$165,906	-$148,545	-$307,345
South Dakota	$97,619	$87,272	$167,376	-$149,861	-$310,069
Tennessee	$42,027	$37,572	$72,059	-$64,518	-$133,490
Texas	$245,643	$219,607	$421,176	-$377,102	-$780,240
Utah	$40,314	$36,041	$69,122	-$61,888	-$128,049
Vermont	$33,986	$30,384	$58,272	-$52,174	-$107,950
Virginia	$38,930	$34,804	$66,749	-$59,764	-$123,653
Washington	$40,215	$35,952	$68,952	-$61,736	-$127,735
West Virginia	$33,064	$29,559	$56,691	-$50,759	-$105,022
Wisconsin	$54,681	$48,885	$93,755	-$83,943	-$173,683
Wyoming	$67,632	$60,463	$115,961	-$103,826	-$214,820

* No state dam safety program

ASDSO Testimony – July 26, 2007

Table 3
Dam Repair & Rehabilitation Act of 2005
Funding Table by State
(Total Funding over 4 year program)

State	Number of Public Dams (high hazard)*	Est. Repair Costs for Public Dams	Potential Funding from Rehab Program
Alabama	16	$ 36,969,700.00	$3,161,671.19
Alaska	10	$ 11,560,420.00	$2,821,747.50
Arkansas	79	$ 67,919,960.00	$5,881,060.71
Arizona	54	$ 114,906,520.00	$4,375,684.37
California	308	$ 680,357,460.00	$20,012,174.14
Colorado	137	$ 266,708,760.00	$8,649,010.77
Connecticut	112	$ 98,129,550.00	$7,774,921.28
Delaware	0	$ 0.00	$2,336,142.23
Florida	7	$ 11,560,420.00	$2,336,142.23
Georgia	178	$ 233,293,720.00	$10,979,916.07
Hawaii	16	$ 17,386,010.00	$3,015,989.61
Idaho	14	$ 21,316,500.00	$2,967,429.08
Illinois	81	$ 73,818,340.00	$6,075,302.82
Indiana	58	$ 59,767,500.00	$5,298,334.39
Iowa	55	$ 82,082,480.00	$4,764,168.59
Kansas	112	$ 137,899,360.00	$7,677,800.22
Kentucky	88	$ 108,209,770.00	$6,366,665.99
Louisiana	10	$ 12,986,750.00	$2,724,626.44
Maine	32	$ 37,776,600.00	$3,647,276.46
Massachusetts	253	$ 62,876,580.00	$13,650,745.07
Maryland	49	$ 160,772,990.00	$4,278,563.32
Michigan	101	$ 89,409,830.00	$7,386,437.06
Minnesota	37	$ 35,398,170.00	$4,230,002.79
Mississippi	75	$ 47,358,250.00	$5,298,334.39
Missouri	14	$ 23,784,100.00	$5,881,060.71
Montana	70	$ 111,236,810.00	$5,395,455.44
Nebraska	63	$ 74,479,790.00	$5,152,652.81
Nevada	65	$ 77,427,070.00	$4,909,850.17
New Hampshire	53	$ 46,980,370.00	$3,938,639.63
New Jersey	119	$ 94,309,450.00	$7,629,239.69
New Mexico	1	$ 2,562,500.00	$5,249,773.86
New York	262	$ 314,455,910.00	$16,224,453.01
North Carolina	177	$ 185,596,360.00	$9,960,145.00
North Dakota	17	$ 29,124,820.00	$3,161,671.19
Ohio	77	$ 87,634,780.00	$13,942,108.23
Oklahoma	129	$ 167,029,090.00	$5,686,818.61
Oregon	49	$ 93,556,280.00	$4,230,002.79
Pennsylvania	301	$ 354,823,900.00	$19,575,129.39
Puerto Rico	28	$ 67,719,700.00	$3,695,836.99
Rhode Island	1	$ 2,562,500.00	$2,336,142.23
South Carolina	156	$ 155,408,770.00	$5,929,621.24
South Dakota	33	$ 29,515,560.00	$3,938,639.63
Tennessee	82	$ 76,155,580.00	$6,172,423.88
Texas	576	$ 655,973,320.00	$28,607,387.46
Utah	15	$ 19,517,070.00	$5,832,500.19
Virginia	109	$ 44,731,860.00	$6,755,150.20
Vermont	33	$ 199,605,940.00	$3,890,079.10
Washington	105	$ 106,452,520.00	$5,783,939.66

West Virginia	202	$ 313,903,950.00	$11,368,400.29
Wisconsin	174	$ 106,767,120.00	$5,929,621.24
Wyoming	15	$ 28,030,120.00	$3,113,110.66
TOTAL	**4,808**	**$5,937,810,880**	**$350,000,000**

** Bill defines public dams as non-federal publicly owned dams.*

APPENDIX D
2006-07 Sustaining Members & Patrons

Friend Level $1 - $50

Houston Engineering, Inc., Fargo, ND
Karl F. Acimovic, P.E., Coventry, CT
A. Peter Barranco, Jr., P.E., Montpelier, VT
David S. Benner, Cheyenne, WY
Laila Berre, US Army Corps of Engineers, Omaha, NE
Gilles Bureau, GEI Consultants, Piedmont, CA
Art Clay, P.E., KY Div. of Water, Frankfort, KY
Ronald A. Corso, Mead & Hunt, Vienna, VA
Charles K. Cover, Federal Energy Regulatory Commission, Crownsville, MD
John W. Dexter, Bellevue, MI
Ramendra Dutta, KY Department of Environmental Protection, Frankfort, KY
Rajindra Gosine, P.G., P.E., Brownsburg, IN
Waliul Y. Hafiz, Amergen - Exelon, Clinton, IL
Rodney E. Holderbaum, Gannett Fleming, Inc., Camp Hill, PA
James B. Hummert, URS Corporation, Saint Louis, MO
Hasan T. Kocahan, Hydroplus Inc., Falls Church, VA
Sebastien Lacroix, Hydroplus Inc., Rueil - Malmaison,
Mark E. Landis, P.G., P.E., Schnabel Engineering, Greensboro, NC
Jerald M. LaVassar, WA Department of Ecology, Olympia, WA
Robert R. Lepke, Price County, Phillips, WI
John Lowe, III, Yonkers, NY
Gerard M. Lutticken, P.E., Petaluma, CA
Daniel J. Mahoney, Federal Energy Regulatory Commission, Washington, DC
Rudolph V. Matalucci, Ph.D., P.E., Rudolph Matalucci Consultants, Inc., Albuquerque, NM
Arthur C. Miller, P.E., Watershed Concepts, State College, PA
Thomas E. Montgomery, Parsons, TN
Janis C. Murphy, P.E., Freese & Nichols, Inc., Fort Worth, TX
William M. Myers, US Army Corps of Engineers, Vicksburg, MS
Donald W. Newton, Maryville, TN
Young K. Park, Park Eng.P.C., Wyckoff, NJ
Steve J. Poulos, GEI Consultants, Inc., Woburn, MA
Traci M. Powell, P.E., IN Department of Natural Resources, Indianapolis, IN
Keith A. Pytlik, P.E., North Jersey District Water Supply Commission, Wanaque, NJ
Rebecca Ragon, US Army Corps of Engineers-TEC, Alexandria, VA
Wayne Saar, Lake Russell, Sterling, PA
Gurmukh S. Sarkaria, Santa Rosa, CA
Richard A. Shoemaker, P.E., Mason, TX
James R. Talbot, P.E., GEI Consultants, Inc., Saint Leonard, MD
Marilyn Thomas, KY Division of Water, Frankfort, KY
Rodney Tornes, P.E., OH Dept of Natural Resources, Columbus, OH
Salvatore J. Triano, P.E., Crossland Engineering, PLLC, Holmes, NY
Ken Weaver, Fremont, CA

Supporter Level $51 - $150

Beacon Resources, Madison, AL
D'Appolonia Engineering, Monroeville, PA
Genterra Consultants, Inc., Irvine, CA
GZA GeoEnvironmental Inc., Norwood, MA
Hayes, Seay, Mattern & Mattern, Roanoke, VA
Larson Design Group, Inc., Williamsport, PA
PBS & J, Austin, TX
Donald L. Basinger, P.E., Schnabel Engineering, Greensboro, NC
Jason Boyle, P.E., MN Department of Natural Resources, Saint Paul, MN
H. Joseph Buhac, P.E., Columbus, OH
Larry Caldwell, USDA - NRCS, Stillwater, OK
Jeris A. Danielson, Danielson & Associates, La Junta, CO
Delbert Downing, Salem, NH
Robert B. Finucane, P.E., VT Department of Environmental Conservation, Waterbury, VT
Phil C. Gerhart, P.E., Gerhart Consultants, Inc., Springville, UT
Robert Goehring, ECS Southeast, LLC, Marietta, GA
Ralph Grismala, ICF Intern., Pawcatuck, CT
Lawrence A Hansen, AMEC Earth & Environmental, Inc., Tempe, AZ
Daniel M. Hill, Columbus, OH
Dennis L. Hurtz, P.E., Olsson Associates, Lincoln, NE
I.M. Idriss, Santa Fe, NM
Mark J. Jensen, USDA - NRCS, Des Moines, IA
Douglas L. Johnson, P.E., WA Department of Ecology, Olympia, WA
Jonathan D. Keeling, P.E., FMSM Engineers, Lexington, KY
Thomas A. Kelly, P.E., West Hills, CA
Richard J. Knitter, P.E., Mount Horeb, WI
Mathew Lindon, P.E., Utah Dam Safety, Salt Lake City, UT
James MacBroom, Milone & MacBroom, Cheshire, CT
Donald Martino, Middletown, PA
Debora J. Miller, MWH Americas, Perth, WA
William M. Pennington, Jr. PE, CA Department of Water Resources, Sacramento, CA
Joel Reed, Augusta, ME
Monroe B. Savage, Jr., P.E., US Army Corps of Engineers, Vicksburg, MS
Melvin G. Schaefer, MGS Engineering Consultants, Inc., Olympia, WA
John H. Scott, P.E., Federal Energy Regulatory Commission, San Francisco, CA
Francisco Silva, Geo Engineering & Envrionment, Lexington, MA
Kenneth E. Smith, P.E., IN Department of Natural Resources, Indianapolis, IN
A. Leon Smothers, Morehead, KY
Robert E. Snow, P.E., D'Appolonia Engineering, Monroeville, PA
Richard J. Tucker, RJ Asc., Waltham, MA
John S. Ung, P.E., Federal Energy Regulatory Commission, Atlanta, GA
Harald W. Van Aller, MD Department of the Environment, Cambridge, MD
Jeffry J. Volk, Moore Eng., West Fargo, ND
Stephen Whiteside, P.E., CDM, Raleigh, NC
Kenneth R. Wright, Wright Water Engineers, Denver, CO
Gideon Yachin, Geo-Technical Services, Inc., Harrisburg, PA
Douglas M. Yadon, P.E., P.G., Short Elliott Hendrickson, Inc., Fort Collins, CO
Rodney Yeoman, P.E., Natural Resources Conservation Service, Columbus, OH

Partner Level $151-$300

RJH Consultants, Inc., Englewood, CO
William B. Bingham, Gannett Fleming, Inc., Harrisburg, PA
John M. Healy, P.E., Hanson Professional Services, Inc., Springfield, IL
Robert J. Huzjak, RJH Consultants, Inc., Englewood, CO
Thomas A. Kelly, P.E., West Hills, CA
Mark B. Ogden, P.E., OH Department of Natural Resources, Columbus, OH
John D. Smart, Littleton, CO
Robert E. Tepel, San Jose, CA
Stephen W. Verigin, P.E., GEI Consultants, Inc., Rancho Cordova, CA

Benefactor Level $301+

Civil Dynamics, Inc., Stockholm, NJ
Marks Enterprises of NC, PLLC, Arden, NC
Mead & Hunt, Madison, WI
TREVIICOS Corporation, Boston, MA
Alton P. Davis, Jr., Alton P. Davis, Jr. Engineering Consulting, West Ossipee, NH
John W. France, P.E., URS Corporation, Denver, CO
Charles E. Karpowicz, P.E., Water Resources Management, Fairfax, VA
Paul Mauer, Jr., IL Department of Natural Resources, Springfield, IL
Karl W. Myers, P.E., Piedmont Geotechnical Consultants, Roswell, GA
J. Bruce Pickens, P.E., Mount Vernon, OH
Shelley Ramos, US Army Corps of Engineers, Albuquerque, NM
Arlan Ruen, Ruen Drilling, Inc., Clark Fork, ID
Bruce A. Tschantz, P.E., University of Tennessee, Knoxville, TN
Stephen W. Verigin, P.E., GEI Consultants, Inc., Rancho Cordova, CA

Sustaining Members

AMEC Earth & Environmental, Inc., Tempe, AZ
ASI Constructors, Inc., Pueblo, CO
Barnard Construction Company, Inc., Bozeman, MT
Boyle Engineering Corporation, Lakewood, CO
Buck, Seifert & Jost, Inc., Norwood, NJ
California Department of Water Resources, Sacramento, CA
CARPI USA, Roanoke, VA
Christopher B. Burke Engineering, Ltd., Indianapolis, IN
D'Appolonia Engineering, Monroeville, PA
Gannett Fleming, Inc., Harrisburg, PA
GEI Consultants, Inc., Centennial, CO
Golder Associates Inc., Redmond, WA
Hayward Baker Inc., Odenton, MD
Kleinfelder, Inc., Golden, CO
Lawson-Fisher Associates, South Bend, IN
Missouri Department of Natural Resources, Dam Safety Program, Rolla, MO
New Jersey Department of Environmental Protection, Dam Safety Section, Trenton, NJ
O'Brien & Gere Engineers, Blue Bell, PA
Ohio Department of Natural Resources, Division of Water Engineering Group, Columbus, OH
Pennsylvania Department of Environmental Protection, Div. of Dam Safety, Harrisburg, PA
Portland Cement Association, Birmingham, AL
Schnabel Engineering, West Chester, PA
TCB, Denver, CO
United States Army Corps of Engineers, Washington, DC
URS Corporation, Oakland, CA

APPENDIX E
ASDSO Founders' Circle

SUSTAINING MEMBERS

ASI RCC, Buena Vista, CO

Dr. B. Dan Marks, Arden, NC

Barnard Construction Company, Inc., Bozeman, MTI

Boyle Engineering Corporation, Lakewood, CO

Buck, Seifert & Jost, Inc., Norwood, NJ;

CA Department of Water Resources, Sacramento, CA (Crest Level)

CARPI USA, Roanoke, VA

Christopher B. Burke Engineering, Ltd., Indianapolis, IN

D'Appolonia Engineering, Monroeville, PA

ECI, Greenwood Village, CO

Freese & Nichols, Inc., Fort Worth, TX

Gannett Fleming Inc., Harrisburg, PA

GEI Consultants Inc., Centennial, CO

Hutton Construction, LLC, Cedar Grove, NJ

Lawson-Fisher Associates, South Bend, IN

MWH Americas, Inc., Chicago, IL

New Jersey Dept. of Environmental Protection, Trenton, NJ

Portland Cement Association, Skokie, IL

Schnabel Engineering, West Chester, PA

URS Corporation, Denver, CO

US Army Corps of Engineers, Washington, DC

PATRONS

Friend Level $1 - $50

Acharya, Mr. Sarbes, US Department of Energy, Germantown, MD

Acimovic, Mr. Karl F., P.E., Coventry, CT

Aujla, Mr. Harjap Singh, NJ Department of Environmental Trenton, NJ

Bureau, Mr. Gilles, GEI Consultants, Piedmont, CA

Galloway, Ms. Meg, WI Dept of Natural Resources Madison, WI

Giver, Mr. L. David, Giver Engineering, Inc., San Antonio, TX

Grounds, Mr. Michael, Beacon Resources, Madison, AL

Hawk, Mr. John K., Federal Energy Regulatory Comm., Chicago, IL

Hummert, Mr. James B., URS Corporation, Saint Louis, MO

Idriss, Mr. I.M., University of California, Davis, CA

Kocahan, Mr. Hasan T., Hydro plus Inc., Falls Church, VA

Accoutered, Mr. John M., Hydro Civil Consultants, Inc., Littleton, CO

LaVassar, Mr. Jerald M., WA Department of Ecology, Olympia, WA

Like, Mr. Robert R., Price County, Phillips, WI

Lowe, Mr. John, III, Yonkers, NY

Magee, Mr. John K., P.E., R&M Consultants, Inc., Anchorage, AK

Mathis, Mr. James E., P.E., Ingrate Consultants, Inc., Atlanta, GA

Misslin, Mr. Michael D., Dept. of Conservation & Recreation, Boston, MA

Myers, Mr. Theodore A., P.E., NY State Dept. of Environmental Conservation, Buffalo, NY

Nicholson, Dr. Peter G., University of Hawaii, Kailua, HI

Newton, Mr. Donald W., Maryville, TN

Pennington, Mr. William M., Jr. PE, CA Department of Water Resources, Sacramento, CA

Pytlik, Mr. Keith A., P.E., North Jersey District Water Supply, Wanaque, NJ

Sarkaria, Mr. Gurmukh S., Santa Rosa, CA

Seibel, Mr. Dennis C., P.E., US Army Corps of Engineers, Baltimore, MD

Smothers, Mr. A. Leon, Mount Sterling, KY

Temple, Mr. Darrel M., USDA - ARS, Stillwater, OK

Veltrop, Dr. Jan A., Skokie, IL

Wing, Mr. James K., Federal Energy Regulatory Commission, New York, NY

Yachin, Mr. Gideon, Geo-Technical Services, Inc., Harrisburg, PA

Supporter Level $51 - $150

Basher, Mr. Charles, P.E., Integrated Science & Engineering, Fayetteville, GA

Bingham, Mr. William B., Gannett Fleming, Inc., Harrisburg, PA

Bowyer, Mr. John S., Jr., P.E., Concord, NH

D'Appolonia Engineering, Monroeville, PA

Downing, Mr. Delbert. Salem, NH

Findlay, Mr. R. Craig, PH.D., P.E.. Findlay Engineering, Inc.. Yarmouth, ME

Hill, Mr. Daniel M.. Burgess & Niple, Inc., Columbus, OH

Keeling, Mr. Jonathan D., P.E.. FMSM Engineers. Saint Louis, MO

Kelly, Mr. Thomas A., P.E., West Hills, CA

Lindon, Mr. Mathew, P.E., Utah Dam Safety, Salt Lake City, UT

Ogden, Mr. Mark B., P.E., Ohio Division of Water, Columbus, OH

Savage, Mr. Monroe B., Jr., P.E., US Army Corps of Engineers, Vicksburg, MS

Schaal, Mr. Timothy G., SD Dept of Environment & Natural, Pierre, SD

Schaefer, Mr. Melvin G., MGS Engineering Consultants, Inc., Olympia, WA

Scott, Mr. John H., P.E., Federal Energy Regulatory Comm., San Francisco, CA

Shoemaker, Mr. Richard A., P.E., HDR Engineering, Inc., Austin, TX

Tucker, Mr. Richard J., RJ Associates, Waltham, MA

Ung, Mr. John S., P.E., Federal Energy Regulatory Comm., Atlanta, GA

Partner Level $151-$300

Benner, Mr. David S., Wyoming State Engineer's Office, Cheyenne, WY

Cecilio, Mr. Catalino B., Catalino B. Cecilio Consulting, San Jose, CA

Irwin, Mr. William, USDA Natural Resources Conservation Service, Washington, DC

Benefactor Level $301 +

Davis, Mr. Alton P., Jr., Alton P. Davis, Jr. Engineering Consulting, West Ossineke, NH

France, Mr. John W., P.E., URS Corp., Denver, CO

Healy, Mr. John M., P.E., Hanson Professional Services, Inc., Springfield, IL

Mauer, Mr. Paul, Jr., Department of Natural Resources, Springfield, IL

Mills, Mr. George E., GEM Consulting, Pickerington, OH

Pickens, Mr. J. Bruce, P.E., Mount Vernon, OH

Smith, Mr. Kenneth E., P.E., IN Dept. of Natural Resources, Indianapolis, IN

Snider, Mr. Steven H., Jenny Engineering, Lagrangeville, NY

Tschantz, Bruce, University of Tennessee (retired), Knoxville, TN

APPENDIX F

Statement of Revenues & Expenditures (July 1, 2006- June 30, 2007)*

REVENUES		
	BUDGET	ACTUAL
Dues	$163,350.00	$176,295.00
Sustaining Members	$65,000.00	$62,500.00
Donations	$27,500.00	$26,350.00
Seminars/Workshops	$169,500.00	$152,905.00
Annual Conference	$379,340.00	$461,625.00
Advertising Revenues	$14,500.00	$30,504.00
Publication Sales	$16,400.00	$12,059.00
Contracts	$659,029.00	$618,781.00
Interest	$10,000.00	$29,840.00
All Other Revenues (incl. NID from escrow)	$20,500.00	$11,965.00
TOTAL REVENUES	**$1,525,119.00**	**$1,582,824.00**
EXPENDITURES		
Controllable Expenses	-	
Salaries	$255,938.00	$242,206.00
Travel & Meetings	$122,235.00	$183,794.00
Printing & Copying	$27,421.00	$32,923.00
Postage	$17,372.00	$30,719.00
Supplies & Equipment	$17,227.00	$12,232.00
Independent Contractors	$264,600.00	$148,085.00
Scholarships	$10,000.00	$10,000.00
Annual Conference	$264,382.00	$304,065.00
Newsletter/Journal	$47,000.00	$48,581.00
Dues/Subscriptions/Acquis.	$2,000.00	$2,907.00
Staff Education	$3,500.00	$1,403.00
ASDSO Committee Expenses	$39,672.00	$33,668.00
Misc.	$5,600.00	$4,357.00
Subtotal	**$1,076,947.00**	**$1,054,940.00**
Semi-Controllable Expenses		
Fringe Benefits	$47,349.00	$42,458.00
Payroll Taxes	$16,636.00	$14,918.00
Insurance	$4,260.00	$5,074.00
Website/IT Support	$28,000.00	$49,634.00
Depreciation	$5,000.00	$5,000.00
Bank Charges	$600.00	$565.00
CC Merchant Services Fees	$14,000.00	$14,960.00
NID/Training Grants to States	$259,233.00	$188,009.00
Subtotal	**$375,078.00**	**$320,618.00**

Summary	FY07 Budget	Actual
Beginning Net Assets	$438,801.00	$438,801.00
Revenues	$1,525,119.00	$1,582,824.00
Expenditures	$1,516,903.00	$1,441,905.00
Difference	$8,216.00	$140,919.00
Est. Ending Net Assets	**$447,017.00**	**$579,720.00**

Fixed Expenses		
Rent	$27,084.00	$27,084.00
Office Equip. Leases/Utilities	$20,394.00	$21,241.00
Maintenance/Server Lease	$5,400.00	$4,922.00
Auditing Fees	$12,000.00	$13,100.00
Subtotal	**$64,878.00**	**$66,347.00**
EXPENDITURES	**$1,516,903.00**	**$1,441,905.00**
Increase in Net Assets	**$8,216.00**	**$140,919.00**

* Final accounting audit pending