



ANNUAL REPORT 2014-15



Association of State Dam
Safety Officials, Inc.

July 2014 through June 2015



ON THE COVER

2014 National Rehabilitation Project of the Year: Rehabilitation of Eagle Mountain Lake Spillway Dam, Fort Worth, Texas by Tarrant Regional Water District and Parsons Brinckerhoff, Inc.

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GOAL 1: IMPROVE STATE DAM SAFETY PROGRAMS.

2014-15 PROJECTS:

Networking

Support and Coordinate State Representation to Committees and National Advisory Boards

Collect State Performance Data and Measure Progress

Provide Tools and Best Practices to the State Dam Safety Programs

NETWORKING

At the heart of ASDSO's support for states is the facilitation of communication between states. The annual conference provides a time for face-to-face coordination and inter-state learning. Improvements are made throughout the year to assist all state program leaders in getting to know one another. FY15 was a big transition year. Several state representatives retired or left state service and new state reps moved up or were hired. ASDSO always makes time to provide orientation programs and guidance to these new ASDSO reps.

STATE REPRESENTATION ON COMMITTEES AND NATIONAL ADVISORY BOARDS

State dam safety officials continue to sit on several national advisory boards and task forces including the National Dam Safety Review Board and the DHS Infrastructure Protection Dams Sector Government Coordinating Council.

ASDSO continues to support five State representatives who serve on FEMA's National Dam Safety Review Board. The five state representatives serving on the Review Board in FY15 were:

- Michele Lemieux (Montana)
- Michael Johnson (Arizona)
- David Gutierrez (California)
- Jim Gallagher (New Hampshire)
- Peter Goodman (Kentucky)

We want to thank Byron Lane (MI) and Brian Long (WV) for serving on the Review Board for many years. Byron stepped down in 2015. Brian retired from state government.

Many ASDSO volunteers also serve on the following National Dam Safety Review Board Work Groups (See Appendix 2 for a roster):

- Research Work Group
- Training Work Group
- National Inventory of Dams Work Group
- Emergency Action Planning Task Group
- Communication and Outreach Work Group

Several ASDSO state representatives sit on the Dams Government Coordinating Council (DGCC) and workgroups including the following:

- John Moyle (New Jersey); John Kale (alternate)
- Steve McEvoy (North Carolina)
- Jason Campbell (Illinois)
- Keith Banachowski (Ohio); Rodney Tornes (alternate)

- David Gutierrez (California); Randy Fessler (alternate)
- Robert Martinez (Nevada)
- Roger Adams (Pennsylvania); Tom Bold (alternate)
- Jim Gallagher (New Hampshire)

Several representatives stepped down and/or retired this past year including Steve McEvoy, Rob Martinez, Keith Banachowski, Rodney Tornes and Jason Campbell. Steve and Rob retired from state service, Jason moved to the private sector, and Ohio (Banachowski and Tornes) decided to step away from the council. New volunteers include Art Sengupta (FL) and Toby Vinson (NC).

TRACKING STATE DAM SAFETY PROGRAM IMPROVEMENTS AND DAM DATA

ASDSO continued to collect data from the states in 2014-15. In conjunction with the US Army Corps of Engineers Topographic Engineering Center, which houses the National Inventory of Dams, state performance data was tracked during FY15 for the 2014 calendar year. This data was analyzed by ASDSO and trend reports were generated. Each state received a "report card" or "dashboard" analysis of their program performance; comparing the state to nationally agreed-upon measures including number of inspections, number of emergency action plans on file and state budgets for dam safety.

Additionally, each state was asked to self-report how well their state's laws, regulations and policies compare to the Model State Dam Safety Program (the "Model"). The model outlines the key components of an effective dam safety program and provides guidance on the development of more effective and sustainable state programs to minimize risks created by unsafe dams. It contains chapters on Legislative Authorities, Permitting, Inspection, Enforcement, Emergency Action Planning and Response, Education and Training, and Public Relations.

ANALYZING STATE PROGRAM PERFORMANCE

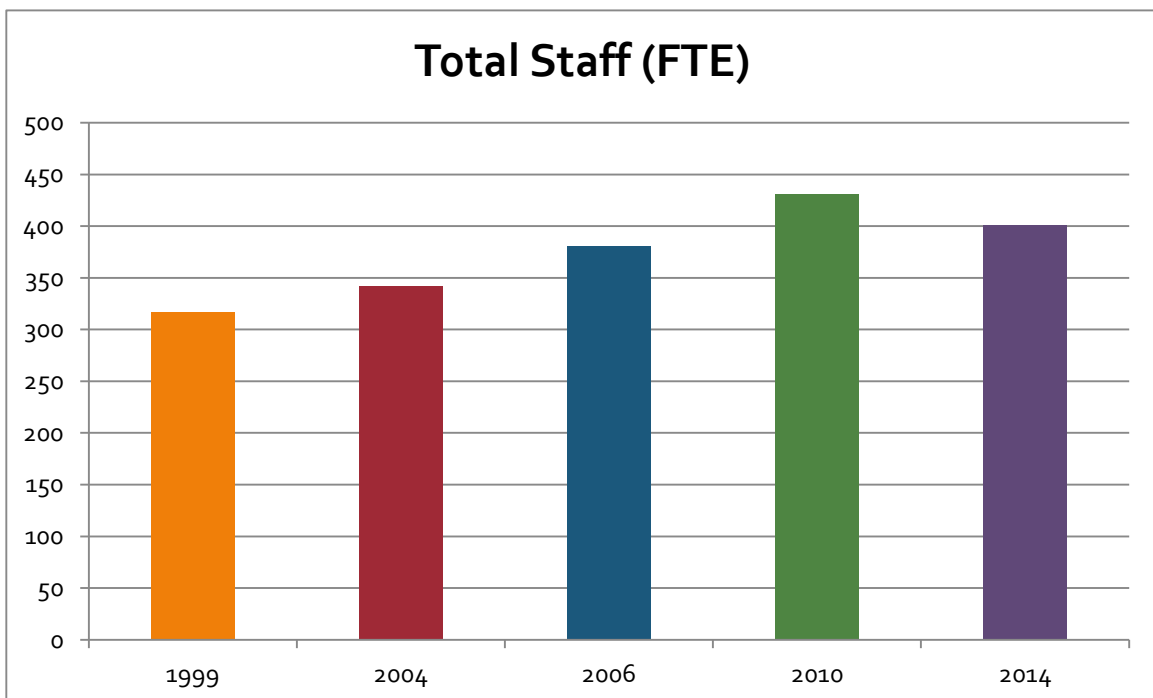
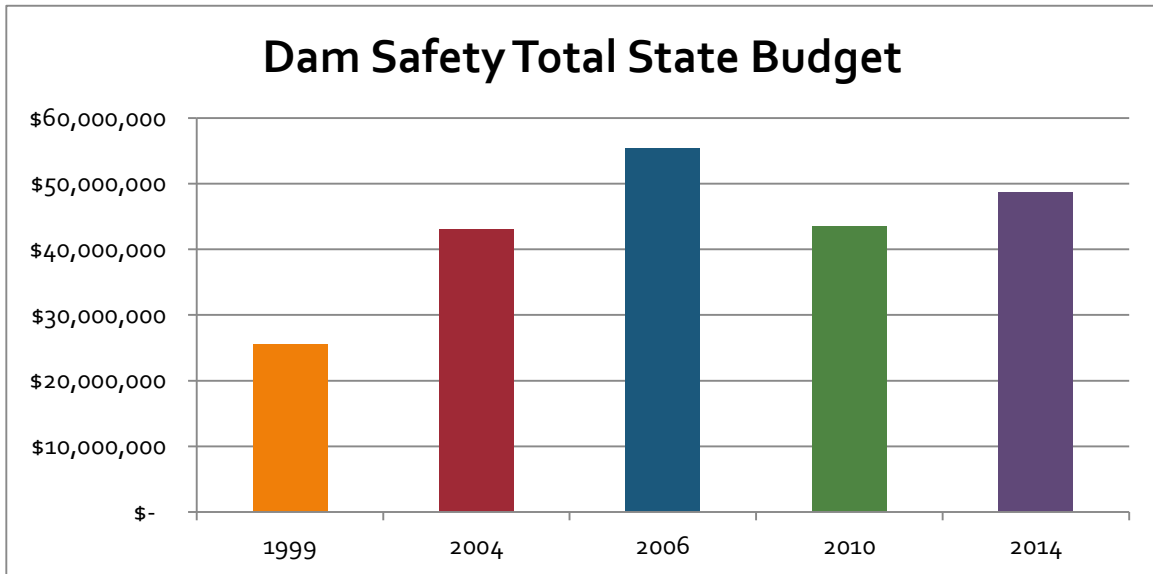
Authorities

State Authorities	State Compliance		
	1989	1998	2015
Legislation (5)	64%	73%	86%
Inspection (4)	54%	68%	76%
Enforcement (4)	66%	79%	92%
EAP & Response (4)	51%	62%	75%
Permitting (3)	58%	67%	76%
Education & Training (3)		59%	75%
Public Relations (1)		13%	30%
Weighted Percentage	59%	66%	79%

This table presents the weighted average of state responses over time to a series of yes/no questions on the authorities for each chapter in the Model. The areas are listed and weighted by importance (weights indicated in parentheses). Higher percentages indicate greater alignment of the state programs with the model.

State Program Resources

The next two charts show the collective change in data from 1999 to 2014 for state budgets dedicated to dam safety and total staff focused on dam safety.

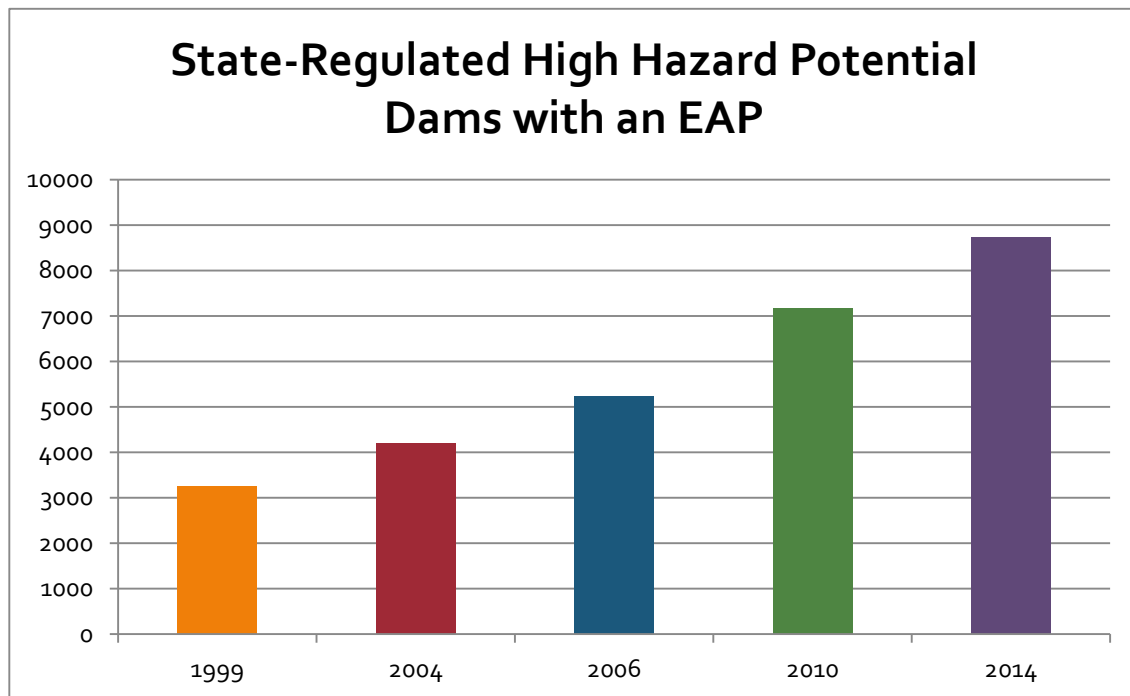


Emergency Action Plans (EAPs) for High-Hazard Potential Dams

Nationally the percentage of high-hazard potential dams with an EAP has increased from 35% to 75% for the period 1999 to 2014.

Nearly every state continues to show improvement in the number of EAPs for high-hazard potential dams with no state showing a significant decrease. Many states had increases of several hundred to several thousand percent.

Nationally, for the period 1999 to 2014, the average of individual state increases in EAPs was 640%. Hawaii continues to lead the other states with the greatest state increase of 5800% going from 2 EAPs in 1999 to 118 in 2014. In seven reporting years (2008-2014) the average of state increases was 122%, up from last year by 51%.



In 2014, twenty-three states reported percentages of high-hazard potential dams with an EAP at 90% or greater, up from just ten in 1999.

There is still work to be accomplished with seven states reporting less than 50% of high-hazard potential dams with an EAP.

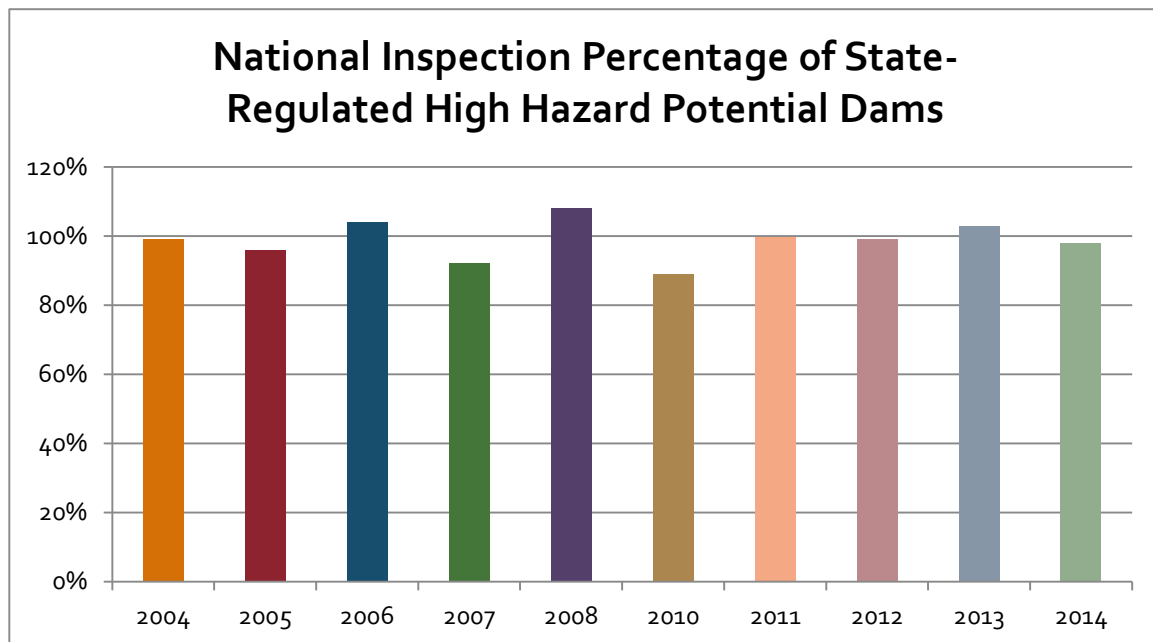
Inspections of High-Hazard Potential Dams

The chart on the next page shows the percentage of inspections completed for high-hazard potential dams based on the inspection frequency and schedule due for a particular state. Inspection percentages may vary above and below 100% for any given year based on a state's inspection frequency and scheduling (i.e., a state with an inspection frequency of every two years might inspect more than half of the dams in the first year, or greater than 100%, in order to take advantage of their close proximity).

The national average for the inspection of high-hazard potential dams has remained relatively steady over the reporting period of 1998 to 2014.

In comparing 2014 to 1998, 38 states reported inspection activity for high-hazard potential dams equal to or greater than 100% of the 1998 activity. Six additional states are at 75% or greater (percentages in the range of 75% and above would likely represent no significant decrease in inspection activity due to scheduling fluctuations).

Improving the number/percentage of inspections shows that states are continuing to put a higher emphasis on this function. Inspections identify issues at dams and begins the likelihood that these issues will be fixed.



IDENTIFYING THE CONDITION OF DAMS

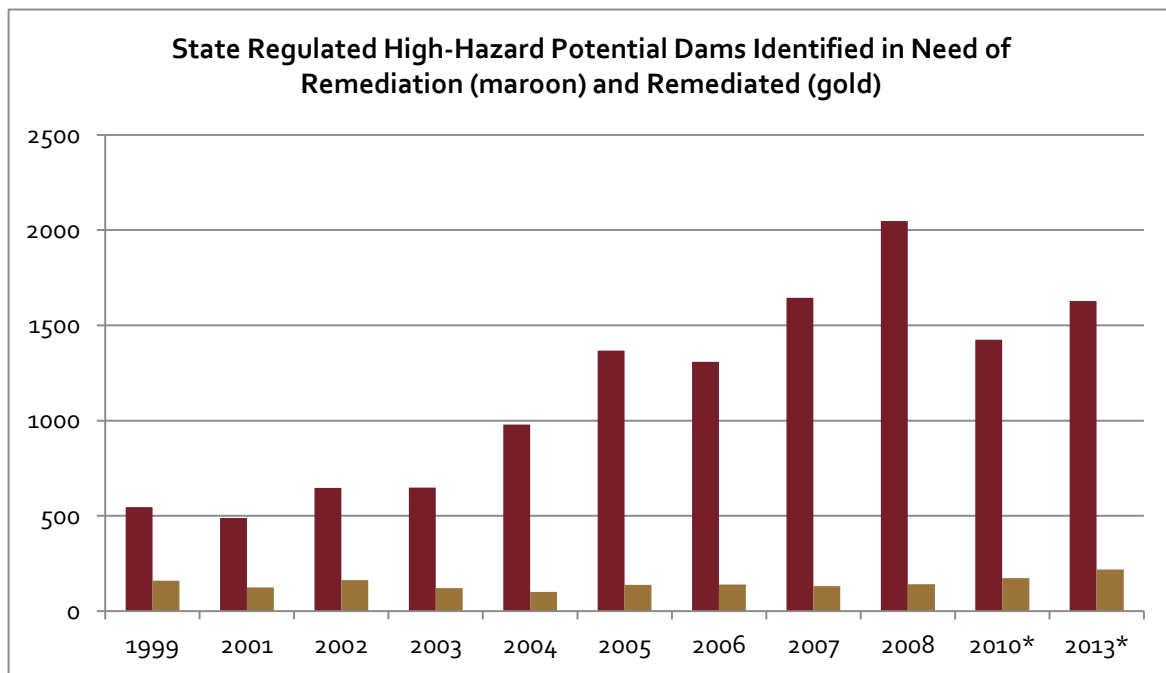
Identification/Remediation of Deficient High-Hazard Potential Dams

National Reporting of Condition of State-Regulated Dams

In 2009 the National Inventory of Dams (NID) began collecting condition rating data on high-hazard potential dams. Dams are rated as Satisfactory, Fair, Poor, Unsatisfactory or Not Rated. Dams with Poor or Unsatisfactory ratings are considered in need of remediation. As states enter the condition rating information from periodic inspection information, a clearer picture of state and national dam safety remediation needs will emerge.

Increased inspection efforts by the state programs have resulted in the significant increase in the number of identified deficient high-hazard potential dams.

There was no significant NID data collection in 2014-15, so these national numbers remain the same as 2013-14. Efforts in FY15 focused on communication with those states that are having a difficult time getting the condition data collected and sent to the NID. It was concluded that most of these states are in the process of developing plans for how to get more condition assessments completed and into the NID when the next data call takes place. ASDSO staff was able to put the few that needed assistance in touch with other states who could provide guidance.



*2010 & 2013 data from NID condition assessment with only 66% (2010) & 76% (2013) of State Regulated HHP dams being reported. Prior years' data was anecdotal totals reported by each state to ASDSO. The condition assessment field, instituted by the NID in 2009, will provide more accurate information on remediation needs than the anecdotal totals as the states report condition assessments for all HHP dams in coming years.

Actual remediations (shown in the gold bars on the chart above) still lag significantly behind identification of deficiencies. There remains a great need for increased enforcement efforts by states and for new rehabilitation and repair funding sources.

PROVIDING TOOLS AND BEST PRACTICES TO STATES

ASDSO continued in FY15 to provide better communication and guidance tools to the state dam safety officials. These included the following:

- Monthly State E-News.
- Virtual and face-to-face caucus meetings.
- Continued website tool enhancements.
- State surveys on topics of interest.

THE ASDSO PEER REVIEW PROGRAM

Since 1990, ASDSO has performed over 46 Peer Reviews, for 30 states, many of the largest federal dam safety programs and several private sector utility companies. The objective of the Peer Review Program is to provide professional guidance to dam safety programs to improve management. No states were reviewed in FY15.

For the fourth year, the US Bureau of Reclamation has utilized the program to enhance its annual review processes. This past year, the other bureaus within the Department of the Interior participated in ASDSO peer reviews. This included the National Park Service, the Office of Surface Mining and Reclamation Enforcement, the Fish and Wildlife Service, the Bureau of Land Management and the Bureau of Indian Affairs. The Tennessee Valley Authority received an independent review for its dam safety program through ASDSO's program.

Thanks go to the Peer Review Committee for overseeing these important projects. (For a complete list of all committee members go to Appendix 2.)

STATE SURVEYS COMPLETED IN FY15

2015

- Estimating Storage Capacity
- Dam Owner/Operator On-Site Training
- Digital Data Collection for Dam Inspections
- Single EAP for Multiple Dams

2014

- Dam Owner Certification
- Tax Districts for Dam Repairs
- Low-Head Dam Survey: Preliminary Summary (5-14-14) & State Responses
- State Policies on Hydraulic Fracturing
- NID Condition Assessment Ratings
- Cost Estimates for Dam Repairs, Removals, and Alterations
- Information Sharing Survey
- Labyrinth Spillways
- Changes in Runoff as a Result of Wildfire
- Economic Benefit of State Dam Safety Programs

GOAL 2: INCREASE AWARENESS OF DAM SAFETY AND ITS BENEFITS TO ALL STAKEHOLDERS.

2014-15 PROJECTS:

Expand Awareness and Educational Campaigns

Promote Responsible Dam Ownership

Promote Dam Safety Through Media Engagement

Coordinate with Key Stakeholders

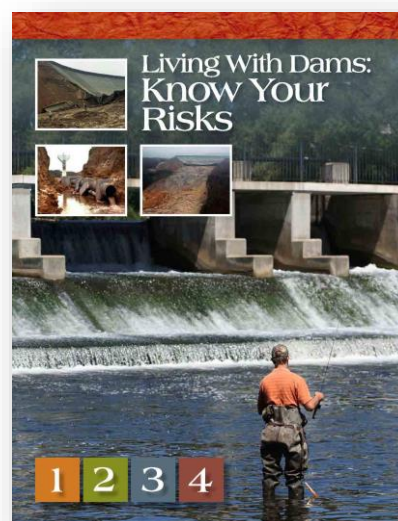
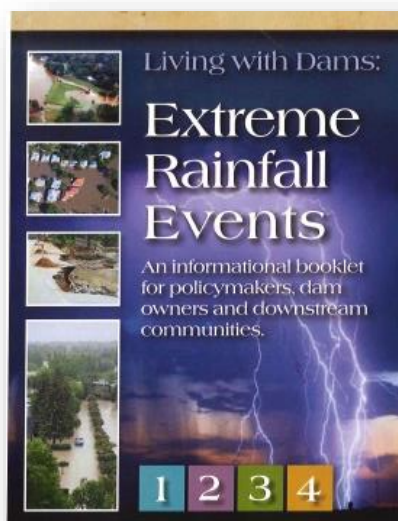
Advocate for Strong Federal & State Dam Safety Programs

EXPAND AWARENESS AND EDUCATIONAL CAMPAIGNS.

Release of Second in the Series: *Living Near Dams: Extreme Rainfall Events*

Bridging the gap between public awareness/education, owner outreach and legislative advocacy, a new booklet development project was completed in FY15 to focus on extreme rainfall events and their effect on dams and public safety. It will be the second in a series of outreach booklets called, *Living Near Dams*. Thanks go to the Dam Owner Outreach Committee for creating both of these booklets.

The *Living Near Dams* series can be accessed in e-book form at www.livingneardams.org.



Carving Out ASDSO's Role in Educating the Public About the Hazards of Low Head Dams

Hazardous Hydraulic Structures (HHS) are structures in river channels that form submerged hydraulic jumps and can create a rotating circular hydraulic current that can capture and confine unwary boaters or swimmers. Once entrained, swimmers have great difficulty escaping these deadly currents and often the only way out is a counter-intuitive swim towards the bottom of the river and out the downstream corner of the hydraulic. HHS can be formed naturally in river rapids and pour overs or by man-made Ogee overflows, spillways, weirs, grade controls, fish barriers, diversion structures, levees and low head dams. In the lexicon of western river runners they are called 'Keeper Holes'. There has been an average of 13 deaths per year from these HHS since 2000, far exceeding the number of deaths caused by dam failures. Although this is not



strictly a *state* regulatory issue (most of these structures are not regulated for safety of the structure), the Association of State Dam Safety Officials has agreed to devote some of its time and resources to a problem that we all share.

Tasks started in FY15:

- Define, quantify, qualify and inventory existing HHS. Determine the size and scope of the problem in each state.
- Form partnerships with other organizations to create a national public safety campaign.
- Develop public information programs including but not limited to; pamphlets, publications, education, training and awareness of the location and dangers of these structures for owners and all stakeholders.
- Develop owner and engineering guidelines and/or standards for design, mitigation, signage, maintenance, corrective measures, retrofit and repair of HHS.

PROMOTE RESPONSIBLE DAM OWNERSHIP

Dam Owner Education Program

It is essential that dam owners, especially those owning small, non-federal or non-federally regulated dams, are educated about their responsibilities as dam owners. One way that ASDSO reaches out to owners is through its workshop program. In FY15, ASDSO continued to increase the number of dam owners trained throughout the U.S.

Workshops held in FY15:

Georgia – October 21, 2014 – Atlanta – 61 Attendees

Arkansas – May 2, 2015—Little Rock—18 Attendees

Wisconsin—May 19, 20 and 21, 2015—Eau Claire – 40 Attendees

Green Bay -- 37 Attendees

Jefferson -- 26 Attendees

Indiana—June 16, 2015—Nashville—71 Attendees

The ASDSO Industry Directory was distributed to several thousand dam owner contacts in New Jersey and Arkansas thru a targeted campaign. Thanks go to these two states for providing their contact lists.

PROMOTE DAM SAFETY THROUGH MEDIA ENGAGEMENT

Our Communications Committee continues to oversee projects to more effectively coordinate ASDSO's communication with the media and the general public about dam safety. ASDSO leaders will typically field inquiries by national, regional or state media outlets several times during the year. FY15 was no different. A list of news stories that had ASDSO input plus others that discussed dam or levee safety issues follows below.

Decade Anniversary Dam Failure Press Releases – The Communications Committee worked with the Dam Failures and Incidents Committee to release information stories about historic dam failures.

Social Media – ASDSO's YouTube® channel, Facebook® page and LinkedIn® discussion forums are slowly growing in popularity.

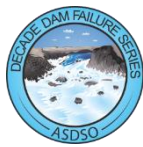
National Dam Safety Awareness Day—National Dam Safety Awareness Day was established by FEMA in 1999 to commemorate the devastation that occurred on May 31, 1889, when the South Fork Dam near Johnstown, Pennsylvania failed. ASDSO assisted FEMA in promoting awareness leading up to May 31 of 2015 by issuing one of its Decade Dam Failure information releases and partnering with the American Society of Civil Engineers (ASCE) Government Relations office on an awareness blog.

ASDSO Press Releases

ASDSO's FY15 press releases were aimed toward legislative advocacy, promoting dam safety as a profession and raising public awareness of dam safety.

7/8/2014 – ASDSO Awards Dam Safety Scholarships

1/27/2015 - ASDSO Supports Rebuild America Act of 2015



12/16/2014 - December 23 Marks 50th Anniversary of Lower Hell Hole Dam Failure

5/29/2015 - Historic Dam Failures Serve as Reminders of the Need for Continuing Vigilance and an Ongoing Commitment to Ensure All Dams Are Safe

6/17/2015 - ASDSO Marks 20th Anniversary of Timberlake Dam Failure

Public & Media Interest: Dam Safety in National News Stories

The following is a summary of FY15 media inquiries and news stories citing ASDSO:

The *Associated Press* is doing a year-long story on infrastructure. They contacted ASDSO in September for info.

Inside Edition contacted ASDSO in August for help with another infrastructure series. ASDSO solicited information from the states and the AdCom and provided this to the producer.

The *Minneapolis Star-Tribune* contacted ASDSO in October in regard to a story on aging dams, rehab costs, and dam ownership (*Remove or revive? Dakota County aims to update old dams, 11/4/14*).

A graduate student contributing to a story for the *Dallas Morning News* contacted ASDSO in November and December with questions on dam safety in Texas and nationwide.

A reporter with the *Arizona Republic* contacted ASDSO in December in regard to a story on the Tempe Dam (*Tempe plans two-year warranty on 50-year dam, 12/2/14*).

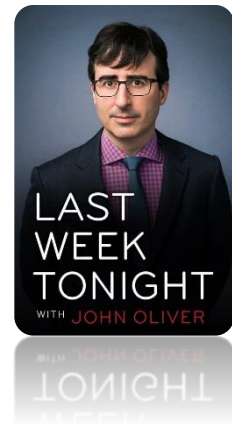
A University of Alabama journalism student: U.S. dam safety legislation and lack of Alabama program.

NPR Marketplace requested information from ASDSO on U.S. dam conditions statistics.

The Diane Rehm's Show requested experts for a show on dam removal (has not aired to date).

ASDSO participated in a media conference call with the Ohio Department of Natural Resources and the US Army Corps on Buckeye Lake in Ohio.

HBO's *Last Week Tonight with John Oliver* contacted ASDSO to get information on dam safety nationwide and specifically statistics on the lack of a program in Alabama. The show on Failing Infrastructure aired on March 1, 2015.



WISH-TV in Indianapolis, IN requested information about EAPs in Indiana.

BuzzFeed News requested facts about tailings dam safety in the U.S. after the Canadian Mount Polley dam failure.

NPR Here & Now requested facts about public safety at low-head dams.

Kent State University journalism student requested information on EAPs in Ohio and the U.S.

Capital News Service asked for statistics on dam safety in Virginia.

KXAN TV in Austin spoke with ASDSO leaders about dam security in Texas and the U.S.

Office of U.S. Senator Amy Klobuchar (D-MN): ASDSO cited in press release on the BRIDGE Act (Building and Renewing Infrastructure for Development and Growth in Employment)

The *Columbus Dispatch* inquired about enforcement laws in Ohio compared to the other states.

WXII News, New York cited ASDSO in story on Mt. Morris Dam.

COORDINATING WITH KEY STAKEHOLDERS: WORKING WITH OUR FEDERAL PARTNERS

Federal agency representatives make up about 20% of the ASDSO membership. About 14% of dams in the USA are owned or regulated by federal agencies. Each federal agency that plays a role in dam safety has a unique relationship with ASDSO.

There is a long-standing relationship with FEMA's National Dam Safety Program and a relatively newer one with the Office of Infrastructure Protection, Dams and Water Infrastructure Section. Both programs are under the umbrella of the Department of Homeland Security (DHS). ASDSO representatives continue to serve in leadership positions. Jon Garton (IA) co-chairs the Training Workgroup and David Gutierrez (CA) chairs the Research Workgroup under the National Dam Safety Program. John Moyle (NJ) co-chairs the Education Workgroup and Lori Spragens co-chairs the Information Sharing Workgroup under the Infrastructure Protection Coordinating Council.

All federal agencies graciously offer their expertise as subject matter experts or committee volunteers on an as-needed basis.

New in 2014, ASDSO is supporting the effort to update the *Federal Guidelines on Dam Safety*, written in the 1980s by the federal Interagency on Dam Safety (ICODS). David Gutierrez (CA) and Lori Spragens have represented ASDSO on the task force this past year.

Independent Peer Reviews Provided in 2014-15 to Federal Agencies

- The US Bureau of Reclamation
- U.S. Fish and Wildlife Service
- The National Park Service
- The Bureau of Land Management
- The Bureau of Indian Affairs
- The Office of Surface Mining and Reclamation Enforcement
- The Tennessee Valley Authority

The Member Agencies of the Interagency Committee on Dam Safety (ICODS)

DHS, Federal Emergency Management Agency, National Dam Safety Program

DHS, Office of Infrastructure Protection, Dams Sector

USDA Natural Resource Conservation Service

US Army Corps of Engineers

Federal Energy Regulatory Commission

Department of the Interior (Bureau of Reclamation, Fish and Wildlife Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Office of Surface Mining)

Department of Labor, Mine Safety and Health Administration

International Boundary and Water Commission

Department of Energy

Tennessee Valley Authority

ASDSO would like to acknowledge and thank Steve Durgin and the Natural Resources Conservation Service for many years of support and partnership. The NCRS provides funding support for ASDSO's Training Program.

COORDINATING WITH KEY STAKEHOLDERS: PARTNERING WITH OTHER ASSOCIATIONS - HIGHLIGHTS

Midwest Levees and Rivers Technical Exchange

ASDSO joined with many other organizations to support the Society of American Military Engineers (SAME) in planning the Midwest Levees and Rivers Technical Exchange in October 2014. ASDSO provided speakers and exhibited at the event.

The Interstate Council on Water Policy (ICWP)

ASDSO was asked and agreed to join with a number of other organizations in urging Congress to continue and provide adequate funding for the National Streamflow Information Program administered by the U.S. Geological Survey. The Interstate Council on Water Policy has spearheaded this effort for several years, educating lawmakers on the need for and multiple uses of streamgauge information, especially in light of current experiences with extreme storms and droughts.

The US Society on Dams (USSD)

ASDSO and USSD continue to work jointly on projects and share information routinely. The following projects are underway:

- Explore improvement opportunities in the area of on-site dam operator training.
- Coordinate on student/kids website pages and public outreach.
- Collaborate to find research opportunities for improved dam engineering.

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 developing the dams section of the ASCE Infrastructure Report Card to exchanging information and talents with the ASCE Institutes.

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. NWC keeps ASDSO informed on its push to get full funding for the Small Watershed Program. ASDSO, in turn, provides letters of support and additional testimony when required.

ADVOCATE FOR STRONG FEDERAL & STATE DAM SAFETY PROGRAMS

Challenging Congress and FEMA to Provide Full Funding for the National Dam Safety Program

The National Dam Safety Program Act (NDSPA) was last reauthorized in May 2014. This modest yet vital program (app. \$13 million) enables the states to improve their dam safety programs, which translates into reduced risks to life and property. Along with our partner, the ASCE Government Relations office, ASDSO leaders worked hard in FY15 to push for full funding.

ASDSO Passes Resolution Applauding New FEMA Ruling

In late 2014, the Federal Emergency Management Agency revised the Hazard Mitigation Grant and Pre-Disaster Mitigation Programs guidelines so that unsafe dams could be included in the eligible list of risk reducing structural improvements that municipalities can include in applications for funding. At the 2014 Annual Business Meeting, state voting members passed a resolution supporting FEMA's change in policy.

Association of State Dam Safety Officials
Board of Directors and State Representatives
Resolution Number 1-2014

WHEREAS, the Association of State Dam Safety Officials (ASDSO) advocates for and leads efforts to improve the safety of dams to reduce risk to lives and property from dam failure, and

WHEREAS, there are dams in every state that are deficient, with many considered deficient due to the fact that, while well maintained, they have not been upgraded to today's safety standards, and

WHEREAS, a well-maintained and properly designed dam greatly reduces flooding risk from dam failure to downstream lives and property, and

WHEREAS, the U.S. dam inventory increasingly is challenged by a lack of funding sources for rehabilitation needs, and

WHEREAS, the Federal Emergency Management Agency recently revised the Hazard Mitigation Grant and Pre-Disaster Mitigation Programs guidelines so that unsafe dams could be included in the eligible list of risk reducing structural improvements that municipalities can include in applications for funding, and

WHEREAS, ASDSO acknowledges the unique and important role that FEMA's Hazard Mitigation Assistance Programs serve within the world of public safety;

NOW THEREFORE BE IT RESOLVED, by the Board of Directors and the State Representatives of the Association of State Dam Safety Officials, meeting on September 21, 2014, that the Association of State Dam Safety Officials acknowledges and fully supports the significant decision by FEMA to clarify its Hazard Mitigation Assistance Programs guidance to include costs for dam repair to improve public safety/flood risk reduction in the U.S.



Tom Woosley
President, September 21, 2014



A good friend to infrastructure funding and dam safety, PA Congressman Bill Shuster stopped by Dam Safety '14 while on business in San Diego. He spoke about his continued interest in funding programs that reduce the risk of dam failure.

State-Specific ASCE Infrastructure Report Cards

ASDSO provided review and input to state-specific report cards for several states including Arkansas, Utah, Iowa, Nevada and Virginia. ASDSO staff and several states also worked with ASCE to complete a grading criteria guideline for the dams section of the state-specific report cards.

Starting a Dam Safety Program in Alabama

ASDSO continued to work with our partners at the American Society of Civil Engineers and the American Council of Engineering Companies of Alabama toward legislation this fiscal year establishing a new state dam safety program in Alabama (Alabama is the only state in the US without such a program). Efforts this fiscal year focused on meeting with stakeholders in the state and developing language for a bill to be introduced in the 2015 session of the Alabama Legislature. ASDSO provided support to ACEC and ASCE on the stakeholder meetings and the development of the draft bill language. Unfortunately, the draft bill was not introduced during the legislative session. This has always been viewed as a multi-year effort and ASDSO will continue working with the Alabama partners in the coming year.

Defending Dam Safety Regulation in Indiana

On January 20, 2015 Indiana State Representative William Friend introduced House Bill 1538 (HB1538) in the Indiana General Assembly. The bill would have required the Indiana Department of Natural Resources to *only* consider the potential downstream hazard from a dam at the time of the dam's construction in determining the classification of the dam. This was an attempt by Rep. Friend to address hazard creep issues for dam owners. ASDSO notified our partners (ASDSO members, ASCE, and Indiana ACEC) about concerns with the bill and sent a letter to Rep. Friend explaining that HB1538 could allow hundreds of high-hazard potential dams to be operated at low-hazard potential standards, thereby placing innocent citizens at an unnecessarily increased risk. The letter offered to work with the representative in identifying other means of addressing hazard creep that did not increase failure risk. In a meeting with Indiana ASDSO members and Indiana ACEC, Rep. Friend indicated that he introduced the bill to raise awareness of the hazard creep issue but he understood the concerns and did not intend to pursue its passage at this time.

GOAL 3: INCREASE THE TECHNICAL EXPERTISE OF DAM SAFETY PROFESSIONALS AND OWNERS/OPERATORS.

2014-15 PROJECTS:

Hold an Annual National Conference and Regional Conferences

Provide a Technical Training Program

Manage an Information Resources Center

Provide the Journal of Dam Safety

Distribute a Monthly Electronic Newsletter

Provide and Promote Technical Research

Promote Dam Engineering as a Profession: Outreach to Students

HOLD AN ANNUAL NATIONAL CONFERENCE AND REGIONAL CONFERENCES.

Dam Safety '14 – At a Glance

Location: San Diego, California

Attendance: 875

Exhibitors: 100+

Number of Presentations: 110

Thanks go to the 2014 Conference Program Planning Committee: Chair: John Ritchey, P.E.; Jason Campbell, P.E.; Eric J. Ditchey, P.E.; John W. France, P.E.; David A. Gutierrez, P.E.; Garrett Jackson, P.E.; Matthew Lindon, P.E.; Daniel W. Osmun, P.E.; Mark W. Pabst, P.E.; and Gregory S. Paxson, P.E.



The 2015 Northeast/Council for Safe Dams Regional Conference—At a Glance

Location: Ocean City, Maryland

Attendance: 225

Exhibitors: 37

Number of Presentations: 45

Thanks go to the Conference Program Planning Committee: John Ritchey, P.E.; Roger Adams, P.E.; Visty Dalal, P.E.; Eric Ditchey, P.E.; Alon Dominitz, P.E.; Steve Doyon, P.E.; Joseph Kula, P.E.; and David Twing, P.E.

**2015 ASDSO
NORTHEAST REGIONAL
CONFERENCE
MAY 11-13, 2015
OCEAN CITY, MD**

ASDSO'S TRAINING PROGRAMS

Technical Education Programs

ASDSO continued using its Program of Study for Dam Safety as a roadmap for training, and completed eight classroom courses and eleven webinars in FY15.

The classroom courses presented are identified as core courses in the Program of Study, meaning the topics are essential in providing an engineer with a well-rounded knowledge of dams. Core courses are slated to be offered on a regular biennial rotation in the coming years.

Web-based courses were presented live and then recorded and archived for later view.

FY15 Classroom Training in Review

Inspection and Assessment of Dams (NRCS-Sponsored), November 5-7, 2014, 59 attendees.

Interactive Preparedness: Emergency Action Planning For Dam and Levee Safety, February 4-5, 2015, 34 attendees.

Dam Failure Incidents and Lessons Learned, March 3-5, 2015. 35 attendees.

HEC-HMS, March 31-April 2, 2015. 36 attendees.

Plans and Specifications Review and Construction Inspections For Dams, Levees And Ancillary Structures, May 5-6, 2015. 33 attendees.

Conduits, Valves & Gates, June 2-3, 2015. 36 attendees.

Soil Mechanics for Earth Dam Design And Analysis, June 22-23, 2015, 57 attendees.

Inspection and Assessment of Dams (NRCS-Sponsored), August 11-13, 2015, 51 attendees.

FY15 Web-Based Training in Review

July 8, 2014 Webinar: Stepped Chute Spillway Design for Embankment Dams. 269 attendees

August 12, 2014 Webinar: Seepage Monitoring and Analysis of Embankment Dams. 522 attendees

UPCOMING TRAINING

Classroom Courses

Inspection and Assessment of Dams, November 17-19, 2015

HEC-RAS, February 23-26, 2016

Fundamentals of Reinforced Concrete Design of Hydraulic Structures, March 29-31, 2016

Seepage Through Earthen Dams, April 26-28, 2016

Inspection and Assessment of Dams (NRCS Sponsored) May 24-26, 2016

Stability Analysis of Embankment Dams, June 28-30, 2016

Inspection and Assessment of Dams (NRCS Sponsored), Oct/Nov, 2016

Webinars

Rainfall and Dam Safety-From PMP to the 100 Year Storm, October 13, 2015

Human Factors in Dam Failures and Incidents, November 10, 2015

Seepage Rehab Methods, December 8, 2015

Two-Dimensional Modeling for Dam Breach Analysis, January 12, 2016

Dam Safety with 3D Spillway Weirs, February 9, 2016

Foundation Cutoff Walls for Dams, March 8, 2016

Pipes for Outlet Works for Embankment Dams – A Webinar for Dam Owners, April 12, 2016

Cracking and Hydraulic Fracturing in Embankment Dams & Levees, May 10, 2016

- October 14, 2014 Webinar: Foundation Preparation and Treatment for Dam Construction. 466 attendees
- November 12, 2014 Webinar: Rehabilitation of Concrete Dams. 195 attendees
- December 9, 2014 Webinar: Earthquake Hazards, Ground Motions and Dynamic Response. 436 attendees.
- January 13, 2015 Webinar: Introduction to Public Safety Risk Evaluation and Treatment for Dams and Levees. 266 attendees.
- February 10, 2015 Webinar: Introduction to Hydrologic Modeling Using Geospatial Information. 371 attendees.
- March 10, 2015 Webinar: Designing Slope Protection for Dams and Levees. 386 attendees.
- April 7, 2015 Webinar: Seismic Stability Evaluation for Earth Dams. 286 attendees.
- May 11, 2015 Webinar: Event Tree Principles and Applications for Dam Safety Risk Assessment. 207 attendees
- June 9, 2015 Webinar: Waterproofing Systems for Dams. 185 attendees.

The Interactive Training Calendar

A directory of engineering and dam safety-related training opportunities is available on ASDSO's website. The user-friendly directory is searchable by date, sponsoring organization, and topic. Currently, the listings include conferences, seminars and workshops in the U.S. and abroad, as well as a number of distance learning opportunities.

Self-Paced Training

All ASDSO webinars are available on-demand, either on the web in archived format, or as a CD available in the bookstore. 273 webinar CDs were sold in the ASDSO bookstore in FY15.

ASDSO TECHNICAL JOURNAL AND E-NEWS

One of the most popular member benefits continues to be the technical journal, *The Journal of Dam Safety*, provided quarterly to members. And ASDSO continued its monthly electronic news delivery service in FY15. This is a timely and efficient way to get information out to members. E-News copies are posted on the website.

MANAGE AN INFORMATION RESOURCE CENTER

Resources/Library

ASDSO continues to expand and update its collection of technical resources, which includes:

- An online bibliography of dam safety publications of ASDSO, federal agencies, and various publishers
- The latest dam safety news
- State dam safety program statistics
- A "Resources by Topic" pages section, based on the ASDSO technical training program
- Subject-specific surveys in the "Members Only" section of the website
- ASDSO's Dam Failure and Incidents Committee archive of materials related to specific dam failures

The Web Site

The website acts as a one-stop-shop for information on ASDSO and on dam safety. Members can access downloadable technical materials, perform literature searches through ASDSO's online bibliography of dam safety publications, and look up other members by name or by state. The public can learn basic information about dams and dam safety and everyone can access the various agencies and partners which deal with dam safety.

The On-Line Bookstore

Many individual papers and articles have been added to ASDSO's on-line bookstore, available through the Publications and Resources section of the ASDSO website. Also available are materials from new webinars and technical seminars listed above.

The State Dam Safety Program Performance Data Collection and Analysis Program

ASDSO, in partnership with the U.S. Army Corps of Engineers, collects and analyzes state program performance data so that states can see how they compare to other states and to the Model State Dam Safety Program. ASDSO uses the data to provide reports to state and federal lawmakers and others. ASDSO and the U.S. Army Corps of Engineers conducted the performance data call in February 2015. ASDSO develops national and individual state performance data reports for use by ASDSO, the states and the National Dam Safety Program to promote dam safety.

Association of State Dam Safety Officials

JOIN Today! Donate Login

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Resources by Topic

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Dam Failure Investigations
Dam Removal
Dam Safety Program Management
Dam Security & Protection
Emergency Action Planning
Hydraulics
Hazard and Size Classification
Environmental
Geotechnical
Hydrology
Inspections
Risk Informed Decision-Making
Seismic
Structural
Surveillance & Monitoring of Dam Performance
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Picture Gallery
Research Links
Links to Other Websites
Dam Owner Website

Home > Technical Resources > Resources by Topic

Resources by Topic

About the Program of Study

ASDSO's Program of Study is a compilation of more than 50 basic and advanced topics that cover the full range of training for a professional career in dam safety. [More info.](#)

Resources by Topic

Click on the general topic area to view proficiencies, available training, resources and references, and links.

PROGRAM MANAGEMENT	RISK-INFORMED DECISION MAKING
DAM SECURITY & PROTECTION	ENVIRONMENTAL
INSPECTIONS	CONSTRUCTION MANAGEMENT
SURVEILLANCE & MONITORING	DAM REMOVAL
HYDRAULICS	TAILINGS DAMS
HYDROLOGY	DAM FAILURE INVESTIGATIONS
GEOTECHNICAL	HAZARD AND SIZE CLASSIFICATION
SEISMIC	EMERGENCY ACTION PLANNING

ASDSO's Resources by Topic Webpage

The Dam Failure & Incident Database

ASDSO has partnered with DHS Infrastructure Protection and the US Army Corps of Engineers in the development of the Significant Incident Report (SIR) database. The web-based SIR database provides information to dam regulators, owners and others in the dam safety community on dam incidents and failures. Information collected includes basic information on the dam, the cause of the incident/failure, and consequences of the failure. This fiscal year, ASDSO collected and entered into the database incident data from multiple sources including the states, dam owners and news reports. Unfortunately, DHS and the Corps of Engineers became unable to support non-federal governmental use of the tool along with the other modules of the system known as DSAT. The system was taken off-line in the middle of FY15. ASDSO maintains possession of the failures database and will define a path going forward to continue to collect and store this important information.

Taking on Technical Topics of Interest

ASDSO has two standing committees that are considered more technically focused than the other committees. One focuses on design and construction issues: it is the Dam Design and Construction Technical Issues Committee. During the year, co-chairs Jeremy Franz and Joe Monroe and the committee continued to write an issue brief to summarize and discuss current design review practices and procedures used by state and federal agencies with the goal of helping regulatory agencies to get involved with the design review process earlier.

The second committee, the Dam Failures and Incidents Committee, assists the States (in partnership with other stakeholders) to improve the current practice of investigating dam failures. With great leadership from its chairman, Mark Baker, the committee continues to grow in membership and is taking on additional tasks. In FY15, the committee spent considerable time and expertise in researching information on historic dam failures and took on the task of creating press releases to highlight lessons learned from dam failures. This information went into each Decade Dam Failure press release that was sent out to the media in FY15. The committee is also working toward updating *its Dam Failure Investigation Guideline*. This past year Mark Baker utilized committee funding to present a paper entitled, *50th Anniversary, The Race to Save Fontenelle Dam* in several locations in the Pacific Northwest and also to do research on dam failures and incidents.

The committee also makes recommendations for improving lessons learned from dam failures. To that end, the committee assisted Gannett Fleming on a new project funded by the National Dam Safety Program to construct a dam failures lessons learned website.

The committee continued to identify and purchase many papers, case histories, photographs and videos for future research needs. Several lessons learned papers were completed on significant historic dam failures. A track for the 2014 annual conference on historic dam failures lessons learned was developed.

Watch for the launch of the new website: www.damfailures.org soon. This is a joint project of FEMA, Gannett Fleming and ASDSO and will highlight lessons learned from dam failures.

PROMOTION OF DAM ENGINEERING AS A PROFESSION: OUTREACH TO STUDENTS AND YOUNG PROFESSIONALS

Students at Dam Safety 2014

2014 Student Paper Competition Winners

Three winning papers were selected for this year's competition:

Potentials for use of Social Vulnerability Assessments to Aide Decision Making for the Colorado Dam Safety Branch

Laura E. Ferre, Graduate Student; and Deborah S.K. Thomas, Associate Professor, University of Colorado Denver; and Bill McCormick, P.E., P.G., Chief of Dam Safety, CO Division of Water Resources

Effect of Mineralogy on the Post-Earthquake Shear Strength of Clay-Like Materials

Beena Ajmera, E.I.T, NSF Graduate Research Fellow and Charles E. Via Doctoral Fellow; and Thomas Brandon, Ph.D., Associate Professor, Virginia Polytechnic Institute and State University; and Binod Tiwari, Ph.D., Associate Professor, California State University, Fullerton

Multi-stage rapid drawdown analysis using the finite element method

Daniel R. VandenBerge, P.E., Ph.D. Candidate; and Thomas L. Brandon, Ph.D., Associate Professor, Virginia Tech



Left to right: Vinoth Muthia (ASDSO student outreach committee co-chair), Laura Ferre, Beena Ajmera, Peter Nicholson (ASDSO student outreach committee co-chair), Brittany Lewis (ASDSO student outreach coordinator), Daniel VandenBerge

Additionally, the following students were invited to present a poster:

An Online Algorithm of Erosion Detection Using Aquifer Storage Properties

Charles W. Chang; Andrew Schreiber; and Jesse T. Holzer, pH Global LLC and University of Wisconsin-Madison

The Analysis of Sediment Migration in Dam Failure/Removal Cases – Numerical Approach

Farzam Safarzadeh-Maleki, Ph.D. Candidate; and Abddul A. Khan, Associate Professor, Clemson University

Undergraduate Scholarships

ASDSO awarded the 2014-15 Memorial Undergraduate Scholarship to:

Jamie Bond - Jamie is a senior at the Oregon Institute of Technology, majoring in civil engineering. She is a member of the American Society of Civil Engineers, where she participated in the steel bridge competition as the team co-captain, and worked on increasing membership for her school's student chapter of the Institute of Transportation Engineers. She currently works for the U.S. Army Corps of Engineer's Walla Walla District, where she assists with levee inspections.



(L to R) Emily Keck, ASDSO Scholarship Committee Chairman John Moyle, and Jamie Bond.

Emily Keck - Emily is a senior at Rowan University, majoring in civil and environmental engineering. She is a member of several organizations, including the American Society of Engineers, Engineers without Borders, and The Society of Women Engineers. She has been involved in several extracurricular activities, including repairing homes with the Appalachia Service Project. Emily recently worked for the New Jersey Department of Environmental Protection's Bureau of Dam Safety and Flood Control, where she reviewed engineering reports and plans and assisted with safety inspections.

Each will receive a \$5,000 scholarship for the 2014-2015 academic year.

As the fiscal year drew to a close, the Scholarship Committee and the Board of Directors awarded one winner for the 2015-16 scholarship: Timothy Sabins, of the University of South Carolina.

ASDSO is proud to recognize these fine scholars, who personify the profession's commitment to the health, safety, and welfare of the public.

Career Center

ASDSO regularly posts resumes of students and recent graduates seeking internships, co-ops or entry-level positions in the field of dam safety. Notices of these listings are sent to ASDSO members through a "Career Connections" email as well as the monthly e-news. In FY15 several resumes were posted by students seeking positions from institutions such as the University of Mississippi, University of Kentucky, and University of Illinois.

Employers can also post student internship opportunities on the Career Center free of charge. Positions were posted by prominent organizations including the Bureau of Reclamation, Fuss & O'Neill, O'Brien & Gere, NJ Department of Environmental Protection, and Maine Emergency Management Agency. There were 79 employment opportunities posted to the Career Center for the general membership.

**GOAL 4: DEVELOP AND IMPLEMENT FINANCIAL
INSTRUMENTS TO IMPROVE DAM SAFETY
PROGRAMS.**

2014-15 PROJECTS:

**Research the Concept of Creating Funding Mechanisms to Support Dam
Rehabilitation for Public and Private Dam Owners**

RESEARCH THE CONCEPT OF CREATING FUNDING MECHANISMS TO SUPPORT DAM REHABILITATION FOR PUBLIC AND PRIVATE DAM OWNERS.

ASDSO's leaders acknowledge that this project will require a substantial amount of research and planning. One step closer in FY15, the Board of Directors created a standing committee to focus on this issue. The first step was to do a survey of the membership to see what knowledge is available on current funding mechanisms. The survey was completed at the end of the fiscal year. Tom Woosley (GA) is chairing this new committee.

**GOAL 5: PROMOTE AND FACILITATE A
CONSISTENT APPROACH TO DAM SAFETY
REGULATION AND TECHNICAL CRITERIA IN ALL
STATES AND FEDERAL AGENCIES.**

2014-15 PROJECTS:

**Collect State Data on Technical Criteria Used and Provide Best
Practices to States**

**Research How States Review Engineering Plans and Look at the
Feasibility of Creating Guidelines**

**COORDINATE STATE DISCUSSIONS OF HOW RISK-INFORMED DECISION-MAKING
CAN WORK IN A REGULATORY ENVIRONMENT**

COLLECT STATE DATA ON TECHNICAL CRITERIA AND PROVIDE BEST PRACTICES TO STATES

ASDSO project manager Mark Ogden continued to compile all the survey data that ASDSO has on state technical criteria and determine the best way to summarize it and make it available to the states to assist them with understanding best practices. Although the Strategic Plan calls for these criteria to be housed in a searchable database, it was concluded that the best way to make this data available was to simply post all of the criteria on the ASDSO website. This project began in FY15 and includes information on Non-Jurisdictional Dam Definition, Inflow Design Flood Requirements for High Hazard Potential Dams, Inflow Design Flood Requirements for Significant Hazard Potential Dams, Spillway Design Requirements for Low Hazard Potential Dams, State Dam Safety Program Fees, State Inspection Program (Owner-Responsible or State Inspection), State Emergency Action Plan Authority, and State Regulatory Seismic Criteria.

RESEARCH HOW STATES REVIEW ENGINEERING PLANS AND LOOK AT THE FEASIBILITY OF CREATING GUIDELINES

The ASDSO Advisory Committee created a task group in 2012 to research how states are reviewing engineering design and to see if there is a need for guidelines to assist state reviewers. Led by Greg Paxson (Schnabel Engineering), this group completed its project and submitted an issue brief to the Board in January 2015. The team, plus members of the Board and the Dam Design Committee, will be writing an article for the journal and hosting a “soapbox session” at the 2015 annual conference in New Orleans.

More to come in the future from this group.

COORDINATE STATE DISCUSSIONS OF HOW RISK-INFORMED DECISION-MAKING CAN WORK IN A REGULATORY ENVIRONMENT

Risk-informed decision-making has become a widespread tool among federal and private sector dam owners. Discussions of usage by regulators, in particular state regulators, is evolving. During the fiscal year, it became clear that many states are having their own tools made related to understanding consequences better. Some are doing studies on the pros and cons of various tools. Work continued during the year to share this information among all the state representatives, including making sure that the National Dam Safety Program national course at FEMA’s EMI Training Center, which focused on mapping tools, reported on the various state initiatives.

GOAL 6: SUPPORT LEVEE SAFETY ACTIVITIES CONSISTENT WITH DAM SAFETY PRINCIPLES AND INTERESTS.

2014-15 PROJECTS:

Partner with Like-Minded Organizations to Improve Levee Safety

**Coordinate with Levee Partners to Present Webinars on the
International Levee Handbook**

Coordinate Levee Safety Track at the Annual Conference

PARTNER WITH LIKE-MINDED ORGANIZATIONS TO IMPROVE LEVEE SAFETY

ASDSO Signs onto the U.S. Levee Safety Coalition Charter

Last year, the idea of forming a partnership with other like-minded organizations was launched by ASDSO and the U.S. Society on Dams (USSD). This year, the charter was written and signed with four other organizations joining ASDSO and USSD.

The mission of the Coalition is the advancement of levee safety across the country through:

- Good engineering practices,
- Sound public policy; and,
- Increased awareness and education within communities of practice and the public.

It is envisioned that the coalition will pursue its mission through support of a National Levee Safety Program and working with other professionals, local, state and federal government flood management agencies such as the United States Army Corps of Engineers, and other interested parties.

Charter

For

United States Levee Safety Coalition

Preamble

The United States Levee Safety Coalition (Coalition) is a group of professional organizations that have joined together to support and advance levee safety in the United States of America. This coalition is committed to the common cause of preserving and protecting public safety, life and property, through the responsible engineering design, construction, operation, maintenance, management and removal of parts or portions of the existing and future vast levee infrastructure system in the United States.

Mission

The mission of the Coalition is the advancement of levee safety across the country through:

- Good engineering practices,
- Sound public policy; and,
- Increased awareness and education within communities of practice and the public.

It is envisioned that the coalition will pursue its mission through support of a National Levee Safety Program and working with other professionals, local, state and federal government flood management agencies such as the United States Army Corps of Engineers, and other interested parties.

Goals

The Coalition goals will change with time and will need to be updated periodically. As an initial set of goals the founding members have identified the following:

- The existence of a National Levee Safety Program.
- Improvement in the quality of leadership in levee safety.
- Improvement in the level of professional expertise, experience and qualifications of levee professionals.
- Levee safety professionals from organizations, government, and the private sector working together and maximizing resources and efficiency.
- An aligned vision of levee safety across the Coalition's member organizations.
- Widespread use of risk-based approaches for levee safety engineering and management.

July 28, 2015

Authority

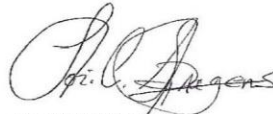
The Coalition is a collaborative organization formed for the purpose of supporting and advancing levee safety. As such, the Coalition has no formal authority other than the expressed commitment of the members to pursue these common goals and mission. No action of the Coalition is binding on any of the member organizations in any way other than that those organizations are voluntarily committing their efforts to the common cause of the group. Any of the member organizations are free to discontinue membership in the Coalition at any time and/or limit their participation in any given activity. It is the intent of the Coalition to operate in harmony with the member organizations.

Membership

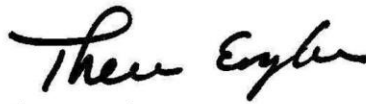
The original members of the Coalition, as undersigned below, are: American Society of Civil Engineers, Association of State Dam Safety Officials, Deep Foundations Institute, National Association of Flood and Stormwater Management Agencies, the United States Society on Dams and the American Council of Engineering Companies. New members may be added to the coalition through consensus agreement of the existing members.



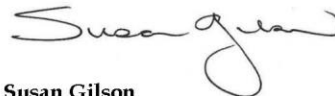
Thomas W. Smith, III
Executive Director
American Society of Civil Engineers



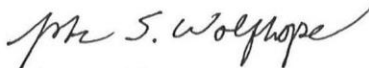
Lori C. Spragens
Executive Director
Association of State Dam Safety Officials



Theresa Engler
Executive Director
Deep Foundations Institute



Susan Gilson
Executive Director
National Association of Flood and
Stormwater Management Agencies



John S. Wolfhope
President
United States Society on Dams



David A. Raymond
President and CEO
American Council of Engineering
Companies

COORDINATE WITH LEVEE PARTNERS TO PRESENT WEBINARS ON THE INTERNATIONAL LEVEE HANDBOOK

The International Levee Handbook (ILH) is a compendium of good practice, offering comprehensive guidance on the design, construction, maintenance and improvement of levees and describing the international state of the art on these matters. Also, it offers a decision support framework for competent engineers, rather than a prescriptive decision making code of practice, looking at specific challenges during the life cycle of levees. Members of the U.S. Levee Safety Coalition fully support and endorse the ILH.

From January 2015 to August 2015, the Coalition sponsored a series of webinars on the ILH. Each chapter was presented twice (one chapter per month) over the ten month period. The better of the two for each chapter was recorded and posted for free access by viewers at ASDSO's website. Each webinar was taught by a lead authors of the ILH. The webinars were complimentary and open to the general public.

January: Chapter 1 - Introduction by Jonathan Simm (HR Wallingford)

February: Chapter 2 - Levees in Flood Risk Management by Jonathan Simm (HR Wallingford)

March: Chapter 3 - Function, Forms and Failures of Levees by Jamie McVicker (US Army Corps of Engineers)

March/April: Chapter 4 - Operation and Maintenance by Rachel Orellana (US Army Corps of Engineers)

April/May: Chapter 5 - Levee Inspection, Assessment and Risk Attribution by Chris Neutz (US Army Corps of Engineers)

May: Chapter 6 - Emergency Management and Operations by Yazmin Seda-Sanabria (US Army Corps of Engineers)

June: Chapter 7 - Site Characterization and Data Requirements by Rosemary Schmidt (US Army Corps of Engineers) and Andy Gaines (US Army Corps of Engineers)

July: Chapter 8 - Physical Processes and Tools for Levee Assessment and Design by Guillaume Veylon (Irstea)

July/August: Chapter 9 - Design by Philip Smith (Royal Haskoning DHV) & Andy Gaines (US Army Corps of Engineers)

August: Chapter 10 - Construction by Joe Forbis (US Army Corps of Engineers)

Over 2,200 interested participants signed up for the ILH Webinars.

COORDINATE LEVEE SAFETY TRACK AT THE ANNUAL CONFERENCE

Continuing the practice of the past several years, the Dam Safety '14 agenda included a track on levee safety policy as well as several levee safety technical presentations within the general technical program. The levee safety policy sessions highlighted the activities of the National Committee on Levee Safety, U.S. Army Corps of Engineers Levee Safety Program, the National Levee Database, and the International Levee Handbook.

Planning for Dam Safety '15 included sessions on both new levee safety policies, as well as guidelines and technical issues.

RECOGNITION



2014 AWARDS/RECOGNITION

Each year ASDSO recognizes outstanding contributions to dam safety on national and regional levels. The following award winners were honored at ASDSO's 2014 Awards Banquet, held at Dam Safety '14 in San Diego, California:

2014 REGIONAL AWARDS OF MERIT

NORTHEAST REGION: INDIAN LAKE BOROUGH, PENNSYLVANIA

Indian Lake Borough, Pennsylvania, located just over a mile from the Flight 93 National Memorial, is a community of about 612 homes and cottages. On 9/11, many residents volunteered with first response and cleanup efforts, and many now serve as volunteers at the Memorial. The community is anchored by a square-mile reservoir with 26 miles of lakefront property. The 71-ft high, 1000-ft long dam impounding the lake was built in 1964. An Emergency Action plan for the dam indicates that 750 people, ten businesses and a school would be at risk if the dam failed.



Indian Lake Borough Council member Patricia Dewar with Northeast regional representatives Jim Gallagher (NH), Roger Adams (PA), and John Moyle (NJ)

Cloudy seepage and irregular features on the downstream slope of prompted an investigation by Pennsylvania Dam Safety in 2003. Their report, dated June 2003, indicated serious concerns about the dam and the design of its spillway, which could handle only 59% of the Probable Maximum Flood (PMF). Dam remediation planning began the following month with the enthusiastic leadership of Mayor Barry Lichty, who tirelessly delved into dam safety issues and design alternatives, and established a team effort between Indian Lake Borough Council and Roger Adams and his staff from Pennsylvania Dam Safety to seek the best solution. The project was divided into three phases, enabling the community to accomplish the major remediation during lean economic times.

- Phase I started in September 2007 and was completed in January 2014 at a cost of \$7 million. It involved lengthening the drawdown conduit, installing a valve on the downstream end and replacing the valve on the upstream end.
- Phase II involved extensive foundation grouting, installing a comprehensive blanket and toe drain system and flattening the downstream slope.
- Phase III involved raising the dam by 3.5 feet, moving a water line and widening the spillway approach channel - all needed in case of a PMF event. This phase required the difficult task of obtaining flowage easement from more than 500 lakeside property owners. This was

accomplished under the leadership of Council member Paul Cornez, who was appointed the chairperson of the Dam Committee when Mayor Lichty passed away in June 2011. Building on the mayor's plans, Mr. Cornez was instrumental in selecting the best design alternative for Phase III and worked tirelessly in coordinating the completion of the dam project.

Financing of the \$7,000,000.00 project went through many stages during the remediation, from funding through the Borough's general fund in 2004-2007, to permanent financing through general obligation notes signed with two banks in 2012.

The success of the Indian Lake Dam remediation is a result of the dedicated and cooperative efforts of many, including past and present Indian Lake Borough mayors and Council members; Indian Lake Borough office manager Theresa Weyent; Borough Council's employees; GAI Consultants, Sean Isgan and CME Engineering of Somerset; Indian Lake Borough Solicitor Dan Rullo; Howard Concrete Pumping and Geotechnical Services; Maust Excavating; PNC Bank; Somerset Trust Bank; 1st Summit Bank; staff of the Pennsylvania Division of Dam Safety; and Indian Lake Borough residents who voted for the tax referendum, signed flowage easements, and supported the project throughout.

SOUTHEAST REGION: GEORGIA SOIL AND WATER CONSERVATION COMMISSION

The Georgia Soil and Water Conservation Commission (GSWCC) has developed a successful method to fund dam rehabilitation projects in absence of NRCS Watershed Rehabilitation funding and has been effective in the strategy and execution of a dam safety program, enhancing public safety throughout Georgia.

The GSWCC is tasked with the huge job of maintaining Georgia's 357 NRCS Watershed Dams, approximately 189 of which are high-hazard potential structures. Limited funds were allocated to maintain and rehabilitate these aging dams, which were constructed with maintenance agreements between local sponsors and the local soil and water conservation district (SWCD). In some instances the local SWCD is the sole sponsor, a challenging situation as SWCDs have no authority for revenue generation. Recognizing this challenge, the GSWCC allocated funds with the help of the state legislature in the late 1990's to bring watershed dams up to current dam safety design criteria. Over the next decade, the GSWCC partnered with the NRCS to assess and plan dam rehabilitations throughout the state. This effort resulted in the rehabilitation of six NRCS watershed dams and nearly \$5 million in construction funds for the rehabilitation of three more dams in Gwinnett County.



Bob Fulmer of the GSWCC accepted the award from SE state representatives Tom Woosley (GA), Steve McEvoy (NC), Dusty Myers (MS)

Gwinnett County is the sponsor for only 14 of the 357 watershed dams in Georgia. The recession of 2009 impacted sponsors' ability to fund cost shares for future rehabilitation projects. While the American Recovery and Reinvestment Act (ARRA) of 2009 provided nearly \$6.1 million to the state for rehabilitation of five NRCS watershed dams, the local sponsor cost share was not available for the remaining 35%. The GSWCC worked with the Georgia State Financing & Investment Commission and the Governor's office to develop a funding mechanism for watershed dam rehabilitation using revenue bonds, thus securing enough funding to comply with ARRA sponsor requirements. This unique funding mechanism resulted in the rehabilitation of four NRCS dams at a cost of \$5.1 million, nearly \$3.4 million of which was provided by ARRA funding. Four projects were completed in 2010.

Building on the success of selling revenue bonds to fund dam rehabilitations, in 2011 the GSWCC again procured similar funding for two more rehabilitation projects in Madison and Gilmer counties. These projects, which cost approximately \$3 million, were completed in July 2014. The GSWCC is financing these construction projects without federal funds. In 2013 the GSWCC procured funding for three additional dam rehabilitations in Habersham County: Soque River Watershed dams No. 29, 34, and 36. These projects are currently being designed; estimated construction costs are approximately \$5.5 million. The GSWCC is also financing these projects without federal funds.

In addition to these efforts, the GSWCC is removing woody vegetation and repairing erosion in plunge pools at 30 watershed dams, preparing them for future maintenance by the original sponsor. Furthermore, in an attempt to find additional funding sources to bring dams into compliance with Georgia Dam Safety Rules, the GSWCC commissioned a study on the conversion of NRCS watershed dams into water supply structures, an effort that may provide additional resources for potential project sponsors.

MIDWEST REGION: MISSOURI DWR WATER RESOURCES CENTER

The Missouri Department of Natural Resources, Water Resources Center (WRC) has made remarkable progress in improving the number and effectiveness of Emergency Action Plans for high-hazard potential dams in the state. There are over 470 regulated dams in Missouri with a high-hazard potential designation. WRC staff engineers develop inundation maps using Light Detection and Ranging (LiDAR) topographic data, and present the maps along with EAP templates to dam owners and emergency management officials during regional workshops.



Bob Clay of the Missouri DNR (center) with Midwest Regional representatives Jim Pawloski (MI), Jon Garton (IA), Paul Simon (MO), and Jason Campbell (IL)

In 2012, the EAP project team received the Missouri Governor's Award for Quality and Productivity. The project continues to be a success with a 100% compliance date expected in 2015.

WEST REGION: OKLAHOMA CONSERVATION COMMISSION



Larry Caldwell (center) accepted the award for OCC. L to R: Yohanes Sugeng (OK), Charles Thompson (NM), Charlie Cobb (AK), Mike Johnson (AZ), Larry Caldwell (OCC), Michele Lemieux (MT), Emma Moradi (OK), Dave Marble (UT), Chris Stoner (OK-NRCS)

OCC assists local conservation districts with the operation and maintenance of 2,107 dams that were built with the assistance of the Natural Resources Conservation Service (NRCS) Watershed Program; 249 of the dams are classified as high hazard. All of the earthen dams provide flood control and 42 provide

water supply and recreation for many communities. OCC has placed a high priority on establishing an outstanding O&M program.

OCC's exemplary program is made possible by the strong support of the Oklahoma state legislature to provide funding for O&M activities and local rehabilitation costs. Since 2004, OCC has obtained more than \$23 million through state bond issues and annual appropriations to support dam safety activities involving O&M and rehabilitation of watershed dams. These state funds supplemented NRCS funding received for watershed rehabilitation projects and local conservation district funds for O&M.

In addition to providing strong support for dam safety in Oklahoma, OCC has made an outstanding contribution to national dam safety efforts. OCC has been a national leader in the NRCS Watershed Program since its inception in 1944. OCC has continued in this national leadership role by working closely with Oklahoma's 3rd District Representative Frank Lucas who authored the first federal program to rehabilitate non-federal watershed dams. The national Watershed Rehabilitation program has received over \$385 million in federal appropriations since its authorization in 2000. This has resulted in the rehabilitation of more than 130 watershed dams in 21 states with another 88 projects in planning and design. The \$250 million authorized for rehabilitation projects in the 2014 Farm Bill has set the stage for taking these efforts to the next level. OCC will continue to support national dam safety efforts by leading national O&M and rehabilitation training for watershed sponsors, dam safety officials, and NRCS staffs, as well as educating elected officials on dam safety needs.

OCC has been recognized by the "Quality Oklahoma" program and received the Governor's Commendation for flood hazard mitigation in 2012.

2014 NATIONAL AWARDS

NATIONAL REHABILITATION PROJECT OF THE YEAR: TARRANT REGIONAL WATER DISTRICT AND PARSONS BRINCKERHOFF, INC. FOR THE REHABILITATION OF EAGLE MOUNTAIN LAKE SPILLWAY DAM, FORT WORTH, TEXAS

In 2007, Tarrant Regional Water District (TRWD) asked Parsons Brinckerhoff, Inc. (PB) to perform a comprehensive seepage and stability assessment of both dams at Eagle Mountain Lake, located northwest of Fort Worth, Texas, as part of a proactive management strategy for its existing infrastructure. Although there were no indications of concern, TRWD wanted to assess the dams to provide confidence in another 80+ years of service of the embankments.

A comprehensive investigation and analysis performed by PB enabled TRWD to locate and assess seepage windows and to design



ASDSO Awards Committee Chairman Jim Pawloski (left) presented the award to James Parkes (center) of Parsons Brinckerhoff and Louie Verreault (right) of Tarrant Regional Water District.

upgrade measures to close the windows under one of their embankment dams. PB utilized a rational, phased approach with each phase building on the findings of the subsequent phase to investigate potential issues and develop an effective rehabilitation plan. This enabled TRWD to develop a well-planned investigation and testing program and construction project that made the most efficient use of available funds, while satisfying dam safety requirements and minimizing adverse environmental impacts.

Several aspects of the project were integral to success:

- Accumulation and review of historic records - The first-ever comprehensive organization and review of TRWD's files took place during the assessment. The fact that TRWD maintained these records and tasked PB to perform the review was invaluable.
- The use of multiple, progressive investigation techniques - Investigations progressed from low-cost non-invasive surface surveys (geophysics) to more invasive investigations (CPTs, borings, pumping tests). Subsequent investigations provided additional data verifying findings and providing data for analyses.
- The use of a test grout program during design - The test grout program verified effectiveness of the proposed solution and enabled development of grouting and monitoring procedures. As a result, risk of construction cost overruns, feasibility issues, or uncertainty in effectiveness of the grout program were reduced.
- The use in-situ testing at the end of construction - This testing verified the effectiveness of the grout curtain cut-off.
- In addition to improving the safety of the dam, the closing of the seepage windows has also reduced the amount of water "lost" due to uncontrolled seepage under the dam. This creates an added benefit in an area that has been suffering drought conditions in recent years.

NATIONAL AWARD OF MERIT: COLORADO DEPARTMENT OF NATURAL RESOURCES DIVISION OF WATER RESOURCES



The Colorado dam safety staff, left to right, front row: Dana Miller, Mark Perry, Erin Gleason, Bill McCormick, Kallie Bauer, Jeremy Franz. Back row: ASDSO President Tom Woosley (Georgia), Garrett Jackson, Ryan Schoolmeesters, Jason Ward, and John Batka. (Not present: John Hunyadi and Matt Gavin)

In less than a week's time in September 2013, as much as 18 inches of rain - more than the state's average annual rainfall - fell along the densely populated front range of Colorado, from Colorado Springs to Fort Collins. The precipitation engaged five different tributaries and the main stem of the South Platte River, dumping more precipitation than would be statistically expected during one in a thousand storms. The thousand-year precipitation event devastated communities, isolating many due to the damage to roads, and prompted a federal disaster declaration. It impacted 207 dams, damaged 27 and caused nine low-hazard potential dams to fail due to overtopping. The challenge was entirely beyond the planned-for event of "a" dam or "a" basin emergency; it covered 140 square miles, five very urbanized mountain tributaries and a dozen communities.

Colorado Dam Safety Program Chief Bill McCormick and his staff of 11 dedicated dam safety engineers demonstrated courageous, innovative, and timely leadership both during and after the storm. Engineers on the dam safety team staffed three emergency operations centers, providing essential technical expertise to emergency managers. The team flew numerous helicopter sorties (the only way to access many dams as roads had washed away) to inspect reports of "dam failures" that turned out to simply be the activation of emergency spillways that residents in the high desert, normally dry climate had never seen operated. State dam safety engineers were deployed to a number of different areas to assist in the mitigation of imminent threats and worked with dam owners to facilitate a real-time stream of information. This service was invaluable to the emergency response process. As response transitioned to recovery, Chief McCormick was instrumental in mustering the services of more than 100 private dam safety engineers through a voluntary program overseen by the dam safety team to facilitate the emergency inspection of the 207 dams impacted by the rain event. While above and beyond the expectation of his statutory duty, such professional concern was key to arresting panic in communities located near dams and ensuring the safety of emergency personnel involved in recovery efforts.

THE TERRY L. HAMPTON MEDAL: DR. ED TOMLINSON, APPLIED WEATHER ASSOCIATES, MONUMENT, COLORADO

The Terry L. Hampton Medal was established in 2007 by ASDSO's Advisory Committee (ADCOM) to recognize Terry Hampton's lifetime achievements in the field of hydrology and hydraulics and his contribution to the ADCOM. The award honors individuals who have made outstanding contributions to research and/or practice in hydrologic and hydraulic engineering for dams.

Dr. Ed Tomlinson has been active in ASDSO for more than 20 years and was a colleague and friend of Terry Hampton. Dr. Tomlinson has distinguished himself in the hydrologic and hydraulic and dam safety communities as the "go to" person for probable maximum precipitation (PMP) studies and rainfall analysis.



Advisory Committee Chairman Terry Arnold (left) presented the award to Dr. Tomlinson

Dr. Tomlinson holds BS degrees in Mathematics and Physics from the University of Richmond and MS and PhD degrees in Meteorology from the University of Utah. After working as a meteorologist for various organizations early in his career, he joined North American Weather Consultants as a Chief Scientist on projects involving atmospheric dispersion modeling, cloud seeding and PMP. As current owner and chief meteorologist of Applied Weather Associates in Monument, Colorado, Dr. Tomlinson has continued his work involving PMP and extreme rainfall events with site specific projects including the Gilboa pumped storage project in New York, the Wanahoo Lake drainage basin in Nebraska and the Baker River drainage basin in Washington. He also helped develop the Storm Precipitation Analysis System (SPAS) a state-of-the-art-science hydrometeorological tool used to characterize the magnitude, temporal, and spatial details of precipitation events. SPAS utilizes real-time rain gauge observations, the industry's highest resolution NEXRAD radar data, and a climatological "base-map" approach to produce gridded rainfall at a spatial resolution of 1 square km and temporal resolution of 5-minutes (with radar). This is an invaluable tool for the hydrologist in predicting runoff from extreme storm events.

Dr. Tomlinson's numerous projects, papers and talks have left an unmatched and lasting impression in the field of H&H, especially as related to dam safety.

THE JOE ELLAM PRESIDENT'S AWARD: PAUL G. SCHWEIGER, GANNETT FLEMING, INC., CAMP HILL, PA

Each year, the outgoing ASDSO president recognizes an individual who has assisted the president or ASDSO throughout the year. This year, outgoing ASDSO President Tom Woosley tapped Paul Schweiger for the 2014 President's Award.

Mr. Schweiger is a vice president of Gannett Fleming, Inc., and manager of the firm's Dams and Hydraulics Section. Paul received his bachelor's and master's degrees in civil engineering from the University of New Brunswick, Canada. He has over 26 years of experience working on dams, flood control projects, and water supply systems. Mr. Schweiger's technical specialties include hydrologic and hydraulic analyses for dams, conducting dam assessments, new dam designs, dam rehabilitation, designing fish passage facilities, and performing safe yield investigations for complex water supply systems. Paul is an approved FERC facilitator for performing failure modes analysis exercises for dams and regularly conducts dam owner training and other seminars for ASDSO.



Paul Schweiger at left with President Woosley

On presenting the award, President Woosley thanked Paul for his outstanding contributions to ASDSO's technical training program as both a member of the training committee and an instructor, for his willingness to do whatever is needed to promote dam safety, and for his friendly demeanor.

"[Paul] is someone you can always count on. He clearly has a passion for dam safety and represents himself, his company, and this association. Not only that, he is a genuinely nice individual."

SPECIAL RECOGNITION AWARD: KEITH FERGUSON, FORMER EDITOR OF THE JOURNAL OF DAM SAFETY

The ASDSO Board of Directors thanks Keith Ferguson for his efforts as former editor of ASDSO's *Journal of Dam Safety*. The journal was first produced in the spring of 2003. A total of 44 issues have been published with over 100 articles. The content of the journal is leading edge, peer-reviewed material of great benefit to the dam safety community, and one of the most valued products of ASDSO thanks in large part to the leadership of the Journal Editorial Committee. Al Davis was the original editor of the Journal until September 2009, when Mr. Ferguson assumed that demanding role. Through his leadership, the process for obtaining and reviewing articles became an effective streamlined process that ensured quality articles. In 2013, when Keith assumed the presidency of the U.S. Society on Dams, he stepped away from his role as journal editor, but his contributions to its success live on.



TRANSITIONS



Board of Directors

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 2014-15 officers include the following:

- President: Michael Johnson, Arizona
- President-Elect: James Pawloski, Michigan
- Treasurer: Dusty Myers, Mississippi
- Secretary: Jon Garton, Iowa

These officers, along with immediate past president Tom Woosley (Georgia) and executive director Lori Spragens made up the Executive Committee in 2014-15.

Board members elected in 2014 included the following:

- Art Sengupta (Florida), serving his first term through 2016, representing the Southeast Region.
- Roger Adams (Pennsylvania), serving his first term through 2016, representing the Northeast Region.
- Hal Van Aller (Maryland), serving his second term through 2016, representing the Northeast Region.
- Jim Gallagher (New Hampshire), serving his second term through 2016, representing the Northeast Region.
- Jon Garton (Iowa), serving his second term through 2016, representing the Midwest Region.
- Michele Lemieux (Montana), serving her second term through 2016, representing the West Region.
- Charlie Cobb (Alaska), serving his second term through 2016, representing the West Region

These elected officials join the following members and the officers to complete the Board of Directors for 2014-15:

- Paul Simon (Missouri), representing the Midwest Region.
- Dave Marble (Utah), representing the West Region

The Advisory Committee chairman attends all board meetings. The current chair is Eric Ditchey (McCormick Taylor). Chair-Elect Paul Schweiger (Gannett Fleming) also attended many board meetings for the AdCom.

Leaving the Board after many years of service are the following:

- Steve McEvoy, North Carolina (retired mid-year)
- John Moyle, New Jersey

State Representatives

- Trevor Timberlake was named state representative for Arkansas.
- Ron Gruzsky was named state representative for Kentucky.
- James DeMay was named state representative for Washington.

- Erin Gleason was named state representative for Colorado.
- Paul Mauer was named state representative for Illinois.
- William Salomaa was named state representative for Massachusetts.
- Edmund Quaglieri was named state representative for Nevada.
- Ed Knight was named state representative for Louisiana.
- Toby Vinson was named state representative for North Carolina.
- Delbert Shriver was named state representative for West Virginia.

Many of ASDSO's long serving state representatives retired this year. Thanks and congratulations go to:



Brian Long, West Virginia



Steve McEvoy, North Carolina



Robert Martinez, Nevada



Bo Bolourchi, Louisiana

FINANCIAL REPORT

The Finance Committee continued to oversee ASDSO's investment program. At the end of FY15, ASDSO held approximately \$650,000 in various investment accounts. The committee also oversees the annual Fundraising Program. FY15 was another year where our donors provided a boost of funding to allow ASDSO to carry out many additional programs, such as the scholarship program and other student outreach efforts and the online resource center.

See Appendix 2 for a list of 2014-15 Patron Donors and Sustaining Members. Thanks to everyone who pushed ASDSO closer to its goals.

FY2015 Action Plan

There were 177 projects in the FY2015 Action Plan. All but ten were completed or underway at the end of the fiscal year.

Budgeting and Income

SUMMARY	BUDGET	ACTUALS (Estimate Prior to Accountant Review)
BEGINNING BALANCE	\$1,107,765.00	\$1,107,765.00
REVENUES	\$2,251,186.00	\$2,112,050.81
EXPENDITURES	(\$2,183,890.78)	(\$2,037,953.53)
EXCESS REVS OVER EXP.	\$67,295.22	\$74,097.28
EST. ENDING BALANCE	\$1,175,060.22	\$1,181,862.28
MINUS PROJECTS FROM RESERVES	(\$48,250.00)	(\$29,664.00)
PROPERTY RENOVATION AND MORTGAGE	(\$336,034.00)	(\$209,291.00)
ENDING BALANCE	\$790,776.22	\$942,907.28
REVENUES	BUDGET	ACTUALS (Estimate Prior to Accountant Review)
Dues	\$313,280.00	\$273,741.80
Sales Income	\$137,000.00	\$71,040.13
Conferences and Training	\$1,273,344.00	\$1,279,897.86
Contracts and Grants	\$422,062.00	\$390,384.35
Investments	\$65,000.00	\$59,210.55
Donations	\$35,000.00	\$24,151.22
Regional Conference Support Fees	\$5,000.00	\$10,000.00
Misc	\$500.00	\$3,624.90
REVENUES TOTAL	\$2,251,186.00	\$2,112,050.81
EXPENDITURES	BUDGET	ACTUALS (Estimate Prior to Accountant Review)
General Admin, Labor, Fringes and Taxes	\$424,536.78	\$432,259.00
General Admin Travel & Board/Committee Costs	\$93,750.00	\$70,611.00
General Admin Direct Costs	\$233,300.00	\$236,556.00
General Admin Overhead	\$160,091.00	\$153,594.53
Conferences & Training Costs	\$911,581.00	\$908,539.00
Contracts & Grants Labor, Fringes, Taxes	\$48,313.00	\$50,864.00
Contracts & Grants All Other Costs	\$312,319.00	\$185,530.00
EXPENDITURES TOTAL	\$2,183,890.78	\$2,037,953.53

During FY15, ASDSO signed or carried out project contracts with the following:

- USDA, Natural Resources Conservation Service. ASDSO signed a contract in Federal FY14 totaling \$99,000 to support ASDSO's training programs. The contract was completed in FY15.
- US Bureau of Reclamation. ASDSO continued supporting Reclamation's independent review of its dam safety program through an agreement totaling approximately \$50,000.
- The US Bureau of Reclamation entered into a new agreement in FY15 to have ASDSO perform peer reviews of the five separate bureaus under the Department of Interior. The agreement totaled \$147,000.
- The Tennessee Valley Authority entered into an order with ASDSO to do a peer review of its dam safety program. The order totaled \$126,550.
- State-sponsored dam owner workshops and technical seminars. Many states signed agreements with ASDSO to support state-specific workshops and seminars.

990s available upon request.

APPENDICES

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OUTSIDE ORGANIZATIONAL TASK GROUPS

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ASDSO COMMITTEES, WORK GROUPS AND ADVISORY VOLUNTEERS

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Meg Galloway, Wisconsin Dam Safety

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Brad Iarossi, US Fish and Wildlife Service (formerly Maryland Dam Safety)

Manoshree Sundaram, FERC (retired)

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Michelle Yezierski, DHS

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 Marty McCann, National Performance of Dams
 Program, Menlo Park, CA
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Task Force to Develop Guidance for Dam Safety

Review of Engineering Designs

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 Jeff Powers (Adcom, GA)
 Dean Durkee (Gannett Fleming, AZ)
 Bob Dalton (Adcom, IL)
 Doug Johnson (FERC, former state rep, WA)
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John Ritchey, PE, Department of Environmental Protection, NJ

Dennis Dickey, Department of Environmental Protection, PA (retired)

Mike Conway, P.E., P.L.S., Department of Environmental Protection, PA

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Christopher S. Adams, P.E., President, Civil Dynamics, Inc.

Joseph R. Kula, P.E., Vice President, URS Corporation

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Construction, Aqua Pennsylvania, Inc.

Rodney E. Holderbaum, P.E., Vice President, Gannett Fleming, Inc.

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National Watershed Coalition Liaison

Tom Woosley (interim)

USSD Coordination

ASDSO president

National Dam Safety Review Board –State Reps

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Peter Goodman, Kentucky

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Federal Co-Chair: Jason T. Sheeley, US Army Corps of Engineers, Department of Emergency Management

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Michigan: Byron Lane P.E.

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Virginia: Mishelle Noble-Blair, Fairfax Water

USDA/NRCS: Claudia Hoeft, P.E., National Hydraulic Engineer, USDA - Natural Resources Conservation Service

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ASDSO representatives to NDSPA Research Workgroup

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Hal Van Aller, MD

John Ritchey, NJ

Jason Boyle, ND

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2014-15 PATRON PROGRAM

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APPENDIX 3

FOUNDERS' CIRCLE

Ten Year after ASDSO's Founders' Circle launched our Patron Program, ASDSO would like to acknowledge the generosity of these companies, agencies and individuals for support of dam safety in the U.S. in 2005. Now the list will go into the ASDSO archives.



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 Tucker, Mr. Richard J., RJ Associates, Waltham, MA
 Ung, Mr. John S., P.E., Federal Energy Regulatory Comm., Atlanta, GA

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

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

The Association of State Dam Safety Officials, Inc.

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