



National Dam Safety Review Board & Interagency Committee On Dam Safety October 13–14, 2016 | Meeting Overview

Purpose

To encourage and promote dam safety nationally, FEMA coordinates with federal, state, and private sector partners through two advisory committees, the National Dam Safety Review Board (NDSRB) and the Interagency Committee on Dam Safety (ICODS). ICODS is comprised of representatives from several federal agencies having an involvement with dams and serves as the permanent forum for the coordination of federal activities in dam safety and security. The NDSRB, comprised of federal, state and private sector partners, advises FEMA's Administrator in setting national dam safety priorities and considers the effects of national policy issues affecting dam safety. The NDSRB also helps monitor performance of state dam safety programs.

ICODS and NDSRB meet once per quarter to advise the FEMA Administrator on national policy issues affecting dam safety. The following summary is from the meeting held October 13–14, 2016.

ICODS Meeting

Dam Safety Technical Assistance Program—Preston Wilson, FEMA

The Dam Safety Technical Assistance Program provides technical assistance to state regulators, dam owners, community officials, first responders, emergency managers and property owners who live downstream of dams.

The purpose of the program is to identify dam failure hazards; assist with the creation of reference guides or materials for an emergency action plan (EAP) and an emergency operations plan (EOP); provide subject matter experts to create other emergency procedure templates and guidance as needed; conduct dam breach exercises for emergency managers and first responders; conduct dam breach consequence evaluations; develop dam breach tools and technology; assess structural and non-structural mitigation measures to reduce risk and promote effective risk communication tools to advise the public.

The target audience for TA is local, tribal, territorial, state and federal dam safety stakeholders that have dam safety risks. Six communities with high dam risk have been identified for a TA pilot: Bluestone Dam in West Virginia, Delaware Dam in Ohio, Mississinewa Lake Dam in Indiana, Rough River Lake Dam in Kentucky, Mansfield Hollow Dam in Connecticut, and Keystone Lake Dam in Oklahoma.

Federal Guidelines Update Discussion and Recommendations—Steve Durgin, NRCS

The Federal Guidelines are a statutory requirement and allows federal agencies with a dam safety responsibility to show how the guidelines are being implemented. The Federal Guidelines are being reviewed and updated. The team will meet in December and draft a final report for delivery to the ICODS membership in January for their review. Only edits that are necessary will be made.

Consequences Estimating Guide Revision— Brian Becker, Reclamation

During flooding, potential for loss of life is quantified by identifying zones of flooding which meet predefined "potential lethality" criteria related to flooding depths and flooding intensity. Potentially Lethal Flood Zones provide an estimate of "affected population at risk" and can be used to evaluate community impacts from dam failure flooding.

Potentially Lethal Flood Zone evaluations are a simplified approach which requires only hydraulic characteristics of flooding and an estimate of population at risk. It eliminates uncertainty by removing the need to address the estimation of warning time and fatality rates, as would be required for a life loss analysis.

**State Regulatory Authority of Federal Dams—
Becky Ragon, USACE**

State dam safety offices regulate 70 percent of the dams included in the NID. Federal agencies regulate 6 percent of the dams in the U.S. Some dams are listed as co-regulated by both the state and a federal agency. No agency is listed as the regulatory agency for 26 percent of the dams included in the NID—8 percent of the entire high hazard potential (HHP) portfolio.

Interagency Disaster Response Coordination

FEMA NDSP will meet with the U.S. Army Corps of Engineers (USACE) and DHS to discuss interagency coordination during a disaster response effort.

Joint NDSRB/ICODS Day 1

Cooperative Technical Agreement—Lori Spragens, ASDSO, and James Demby, FEMA

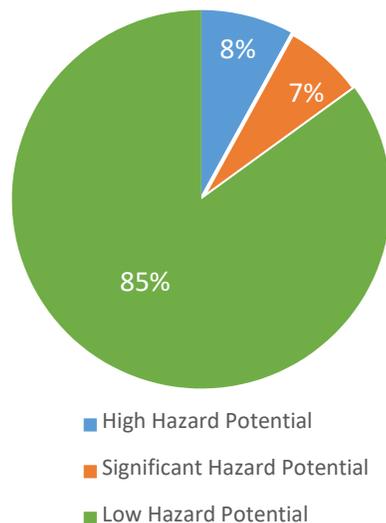
The Association of State Dam Safety Officials (ASDSO) and FEMA entered into a Cooperating Technical Partners (CTP) agreement. The CTP program exists to strengthen and increase the effectiveness of the National Flood Insurance Program (NFIP) through fostering strong federal, state, tribal, regional and local partnerships to reduce flood losses and promote community resiliency. The CTP program supports strengthening national preparedness and resilience, and the program also supports the National Mitigation Framework.

FEMA and ASDSO have mutual missions, specifically within dam safety training and research. The total grant amount is \$485,000, which supports the state technical assistance program, dam failures lessons-learned website upgrade and maintenance, and state performance measures on the feasibility of establishing a national post-dam failure investigation program.

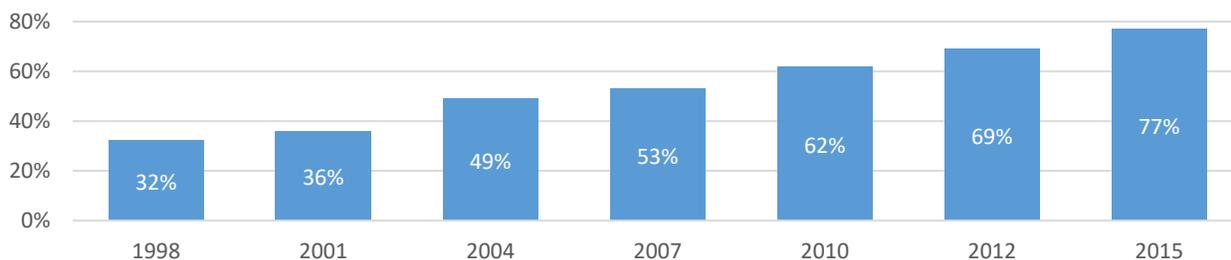
Annual State Report—Becky Ragon, USACE, and Mark Ogden, ASDSO

State performance metrics inform an incident database maintained by ASDSO. The recommendation of the NDSRB is to keep the same metric categories and levels as are currently being used, but altering the data collection cycle to better coincide with the NDSP state assistance notice of funding opportunity. As seen below, a steady increase in completion of EAPs over the years is reflective of NDSP efforts in raising awareness at the state level of the benefits and risks associated with dams.

Non-Regulated Dams in 2016 NID



EAP Completion Percentage for State-Regulated High Hazard Potential (HHP) Dams



State Authorities (weight)	1989	1998	2010	2016
Legislation (5)	64%	73%	85%	86%
Inspection (4)	54%	68%	74%	86%
Enforcement (4)	66%	79%	90%	92%
EAP & Response (4)	51%	62%	72%	75%
Permitting (3)	58%	67%	75%	76%
Education & Training (3)		59%	72%	75%
Public Relations (1)		13%	30%	30%
Overall Weighted Percentage	59%	66%	77%	80%

This table shows improvements in awareness and levels of policy implementation and authority at state levels from 1989 until 2016.

Performance Measures Update—Katie Mooshian, Booz Allen Hamilton

The Performance Measures Workgroup was tasked with developing a common measurement framework that evaluates progress towards achieving the intended outcomes of the NDSP. Performance indicators are being vetted based on measurability, changeability, collection burden, and other criteria. Once draft performance measures are approved, the next step will be completing the draft data dictionary by December 2016. The recommended performance measures are in the following tables.

Goal #1: Reduce risks to life and property associated with dams	
Objective	Measure
#1: Identify and inventory all dams, and assess the risks dams pose to life, property, and the environment	<ul style="list-style-type: none"> ▪ % of high hazard dams achieving a rating of “fair” or above on their condition assessment ▪ % of response rate on NID data call
#2: Reduce the likelihood of dam failures	<ul style="list-style-type: none"> ▪ % of NDSP portfolio that reflects the current state of practice ▪ # of dams that fail during the year ▪ # of lives lost in association with dam failure
#3: Identify, coordinate, and align relevant Federal programs on dam safety to leverage capabilities	<ul style="list-style-type: none"> ▪ % of federal ICODS members participating in NDSP initiatives
#4: Promote a program of Emergency Action Plan (EAP) development, implementation, and exercise for dams in the U.S.	<ul style="list-style-type: none"> ▪ % of high hazard dams with an approved EAP ▪ % of approved EAPs being exercised
#5: Support and improve effectiveness of State dam safety programs	<ul style="list-style-type: none"> ▪ National average of State dam safety program compliance with the criteria outlined in the National Dam Safety Act

Goal #2: Increase awareness of the benefits and risks related to dams, and effective methods for living safely with dams	
Objective	Measure
#6: Assist Federal and State dam safety programs in effectively communicating with the public	<ul style="list-style-type: none"> ▪ % of action items outlined in NDSP outreach strategy implemented during the year
#7: Develop guidance and resources to engage with stakeholders to increase awareness of effective methods to reduce risks related to dams	<ul style="list-style-type: none"> ▪ % of State THIRAs (Threat Hazard Identification Risk Assessment) that reference dams ▪ % of State hazard mitigation plans that reference dams
#8: Educate dam owners on effective risk reduction methods and risk communication related to dams	<ul style="list-style-type: none"> ▪ % of States conducting risk mitigation dam owner workshops and/or training

Goal #3: Advance the state of practice of dam safety and dam risk management	
Objective	Measure
#9: Promote dam safety hazard education to facilitate effective Federal and State dam safety programs	<ul style="list-style-type: none"> ▪ % of technical assistance requests fulfilled during the year ▪ % of State dam safety training requests fulfilled during the year
#10: Promote research to facilitate effective Federal and State dam safety programs	<ul style="list-style-type: none"> ▪ % of research priorities being addressed during the year
#11: Incorporate lessons learned from dam incidents and failures to improve dam safety programs and inform research	<ul style="list-style-type: none"> ▪ % of dam events occurring during the year that are logged into the lessons learned repository

Joint NDSRB/ICODS Day 2

Dam Rehabilitation Bill WRDA Update—American Society of Civil Engineers Representative

The Dam Safety Act was reauthorized in 2014, and Congress was committed to providing a new WRDA bill every two years. This bill includes a grant program that would be available to every state except Alabama, and will be for non-Federal dams and FERC dams. The first one-third of the funding is available to all states with equal funding. The remaining two-thirds of the funding would use a needs-based formula to determine funding breakdown amongst the states.

The original bill was introduced in April and the stand-alone bill was incorporated into a larger potential infrastructure vehicle. In the summer of 2016, the Senate’s version of their WRDA bill was approved. In September, the House version of their WRDA bill did not include the dam safety rehabilitation piece. As of October, Congressional staff are having informal discussions to work out the differences of the two bills. ASCE is encouraged that the bill will remain and be passed into law.

Information Sharing Task Group Update—Meg Richardson, Pacific Gas and Electric Company

The NDSRB Communications and Outreach workgroup was tasked with following up on the Information Sharing task group's November 2014 paper, *Benefits and Disadvantages of Sharing Dam Safety and Security Information*. The objective of the task group is to capture best practices and develop guidance for effective communication and sharing of dam risk information.

In response, a number of NDSP partners, both federal and non-federal, were contacted to volunteer to join the task group. The kick-off meeting was held on September 17, which began a two-month data collection review period, ending November 17. Following the review period, information will be analyzed and shared with the Information Sharing task group the week of December 17. They will host additional meetings to discuss findings and plan next steps with the task group.

Seepage Module Training at EMI Update—Preston Wilson, FEMA

FEMA is in the process of working with EMI to pilot the Module Q course into three separate courses, one for general dam safety knowledge, another for dam safety inspections, and the third for in-depth stakeholders. FEMA is going to hire a technical assistance contractor to work with EMI.

FEMA is also working with EMI to develop a reference document that coincides with the course material. The reference document will change based on the stakeholder level of the group. FEMA will meet with EMI to accomplish this mission with the budget available; the desire is to provide training at no cost to the states.

Dam Safety Pocket Guide Discussion and Vote—Alesia Za Gara, Facilitator

The NDSRB recommends to the FEMA Administrator the implementation of the new Dam Safety Pocket Guide and that it be submitted for publication. The process of turning the pocket guide into a mobile app will now begin and includes updating graphics and increasing the resource's interactivity. The app version of the pocket guide is intended to help dam owners look up helpful information regarding dam safety and maintenance on-the-go.

Between now and January 2017, app development will begin and a training module task force will start to meet. At the January NDSRB meeting, an initial look and outline of the app will be presented to get feedback from members. From January–April, app development will continue with a beta-version to be presented to the NDSRB at the April 2017 meeting.

DSS Wise Update—Mustafa Altinakar, University of Mississippi

The new DSS-WISE™ Lite web portal has been designed, developed, and operated by the National Center for Computational Hydroscience and Engineering at the University of Mississippi. DSS-WISE™ is a software package which can be used to simulate dam/levee breach floods, fluvial floods, storm/tidal surges, landslide waves, and their consequences. It was designed in part to eliminate gaps in current flood simulations and damage evaluations.

New capabilities and improvements implemented in this version of DSS-WISE™ Lite include a user-friendly graphic-based interface for easy and flexible data entry, simulation setup in 12 intuitive steps with minimum user effort, web page viewing of processed simulations, and the ability to view and download the results.