

# CREATIVE COMMUNICATIONS NETWORK

## PUBLIC RELATIONS ● ADVERTISING ● MARKETING

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February 10, 2014

To: James Demby  
NDSRB EAP Workgroup

FROM: Ron Butler

SUBJECT: 2013-14-15 Action Plan for EAP Outreach Order HSFE60-13-F-0060

This is the Action Plan for implementation of the 18-month 2013-15 Phase 1 Outreach and Marketing Campaign to increase the number of Emergency Action Plans (EAPs) on state-regulated High-Hazard Potential (HHP) dams in the target states of Georgia, Kentucky, Indiana and California. The Action Plan will resume the DamSafetyAction.org (DSA) EAP outreach Campaign on behalf of the National Dam Safety Review Board (NDSRB) and under contract with the Federal Emergency Management Agency (FEMA). If authorized and funded, an optional Phase 2 of the Outreach and Marketing Campaign, lasting 12 months, would add campaigns for Ohio, New Mexico, Rhode Island, Connecticut, and Mississippi.

These nine states are among those with the least authority to require EAPs, and needing the most EAPs for their HHP dams. This Action Plan only addresses Phase 1 activities. None of the four Phase 1 target states has statutory or regulatory authority to require completion of EAPs by owners of state-regulated HHP dams. As a result, these four states have several hundred HHP dams that do not have EAPs. In some cases, such as when there is a major problem with the integrity of a dam or if the dam is new, an EAP may be required as part of continued or new licensing of the dam.

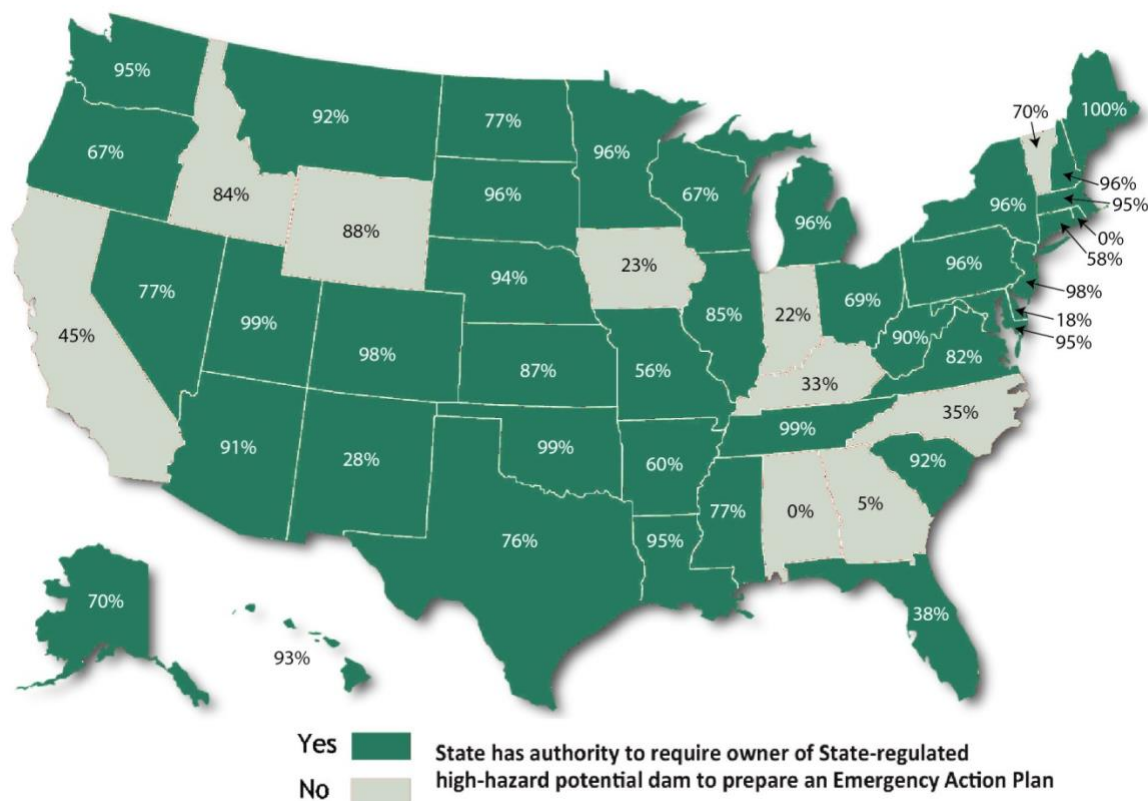
On page 26 a complete Overview and Situation Analysis provides background on research with Dam Safety Officials (DSOs) and Emergency Management Directors (EMDs) in the target states and the Pilot Studies states, barriers to EAP compliance, and ways the Action Plan addresses those findings and needs. A milestones chart for Action Plan milestone and program deliverables is on page 36. An Acronym Key is on page 39.

### **EAP Status in the Target States**

- In 2011, California had 1,254 state-regulated dams, and about 45 percent of 690 HHP dams had FEMA-64 compliant EAPs compared with the national average of 66 percent. The state's exceptionally high-density population makes EAPs a crucial public safety tool.
- In 2011, Georgia had 4,053 state-regulated dams, and only about 4 percent of 474 HHP dams had FEMA-64 compliant EAPs. The number of HHP dams increased, from 437 in 2005.

- In 2011, Kentucky had 967 state-regulated dams, and only about 5 percent of 169 HHP dams had FEMA-64 compliant EAPs. The number of HHP dams decreased from 177 in 2005. Kentucky DSOs report that currently the state has EAPs on 35% of 164 state-regulated HHP dams.
- In 2011, Indiana had 1,084 state-regulated dams, and only about 16 percent of 243 HHP dams had FEMA-64 compliant EAPs. The number of HHP dams increased from 241 in 2005.

This map is from the 2013 U.S. Army Corps of Engineers (COE) National Inventory of Dams (NID) and provides a more current snapshot of the states with authority to require EAPs on state-regulated HHP dams and the percentage of those dams with EAPs at the time state DSOs submitted data.



The chart below shows the current estimated number of EAPs for HHP dams in each of the target states, based on combined data provided by:

- The COE's 2013 NID
- The 2012 summary from the Association of State Dam Safety Officials (ASDSO)
- Grade cards from the American Society of Civil Engineers (ASCE)
- Conversations with the DSOs of each Phase 1 target state and data from some DSO websites where the state inventory of dams is posted

The numbers shift as new dams are added, laws and regulations change, and dams are reclassified. The NID includes all HHP dams, while ASDSO cites only state-regulated HHP

dams. This means the percentage of dams with HHPs in ASDSO data differs from NID, and with data sources mixed the numbers do not always align. This chart provides an adequate benchmark. An important number in the NID data reported by DSOs is “EAPs Not Required.” This usually reflects the lack of statutory authority to require EAPs on HHP dams.

Phase 1 States	Number Dams State Regulated	Number HHP Dams	Number EAPs on HHP Dams Or Percent	EAPs Not Required on HHP Dams
California	1,248	685	50%	577 (NID)
Georgia	4,053	484	4%	527 (NID)
Indiana	1,084	279	16%	0* (NID)
Kentucky	967	169	5%	261

Phase 2 Option States	Number Dams State Regulated	Number HHP Dams	Number EAPs on HHP Dams Or Percent	EAPs Not Required on HHP Dams
Connecticut	3,235	261	27%	0* (NID)
Mississippi	3,836	266	78%	11* (NID)
New Mexico	300	154	29%	3* (NID)
Ohio	1,508	365	43%	0* (NID)
Rhode Island	667	96	2%	1* (NID)

(\*) DSOs say these NID low numbers and zeroes for “Not Required” are the result of their difficulty understanding what the NID questionnaire is asking. As one DSO put it: “The questions of the NID often are asked in an odd way, and when the results get ‘reported’ things do not make sense. I think this is one such example.” In 2005, the NID asked the question this way: **Enter the *code*, indicating whether this dam has an Emergency Action Plan (EAP) developed by the dam owner...Y for Yes; N for No; NR for Not Required by submitting agency.**

A 2008 NDSRB conference call summary regarding the NID included the comment: “**States did a better job entering NR when their legislation does not require EAP instead of listing No.**” This is where the confusion seems to remain even in the 2013 NID. Thus the “not required” figures for only California, Georgia and Kentucky would seem to be reliable.

### Objectives of the 2013-15 Four-State Outreach and Marketing Campaigns

- Develop and implement an Outreach and Marketing Campaign to promote increased awareness and completion of EAPs for state-regulated HHP dams in Georgia, Kentucky, Indiana and California over a period of 18 months. In a second, optional and separately

funded phase lasting 12 months, develop and extend the Outreach and Marketing Campaign to include Ohio, New Mexico, Rhode Island, Connecticut and Mississippi.

- Improve communication about the importance of EAPs to and between dam owners, dam safety officials, and emergency responders, as well as stakeholder groups and the public.

## **Overall Strategic Approach**

The communications strategies that will guide the Outreach and Marketing Campaign include some from the May 2011 Final Report and others developed recently as planning and dialog has progressed with the DSOs in the four states, EMDs and stakeholders.

- Develop four state-specific, grassroots EAP campaigns appropriate to each state's needs, priorities and legislative authorities regarding EAP implementation. The campaigns should avoid the appearance of being "top-down" from Washington, D.C. but instead should be "home grown." Continue the DSA branding "umbrella" concept, which benefits from being an independent, non-governmental identity. This identity has been successful in terms of acceptance, flexibility, memory, look, and functionality. The distinct DSA logo and name seemed to catch on with the dam safety program staffs, dam owners, EMDs, ASDSO and others crucial to the EAP program. DamSafetyAction.org has acquired "brand equity" that brings value to the national Outreach Campaign. This identity should continue to be:
  - Flexible enough to accommodate outreach to additional states,
  - Conducive to more creative and operational freedom and responsiveness,
  - Tailored to a "grassroots" and state-specific approach,
  - Focused specifically on dam safety and EAPs,
  - Non-commercial in appearance,
  - Not overtly affiliated with any particular government agency, and yet "official" enough to have credibility.
- Harmonize the Outreach Campaign with the activities and objectives of the DSOs to the greatest extent possible, and deploy and assess meaningful communications projects, thus lending support to their EAP efforts. Supplement and help improve DSO EAP initiatives.
- Target stakeholder and public sector groups to create increased awareness of the importance of dam safety and emergency action planning. Help the public understand the state dam safety program and where to call if they need to report a problem with a dam.
- Give state government VIPs a heads-up to inform them about the program as the new state sections of the DSA website are introduced. The more extensive an outreach program becomes, the more important it is that VIPs such as state legislators and administrators be notified. The letters should be positive in tonality so as not to call into question the work and of DSOs in obtaining EAPs. The DSOs in the four states will help to determine the best way to handle the notification. This letter could come from the DSOs or direct from DSA, depending on the DSO preference. It also could be an email from the DSOs, for a more informal approach. If DSOs handle the letters, they must be timely and not delayed by internal approval processes.

- Based on dialog with DSOs in each state, develop messaging and materials that help them address the issues and obstacles they face in trying to coax dam owners to complete EAPs. Messaging should stress the liability and important public safety interests of dam owners in developing EAPs. Messaging also should highlight the benefit dams provide (drinking water, recreation, flood control, hydropower) as well as the risks.
- Create multiple direct mailings to dam owners and EMDs using text and graphics with considerable impact, but that depict typical state problems with dams. Avoid depicting federal dams that are not state-regulated and that already have EAPs.
- In each state's messaging to educate HHP dam owners, local EMDs, and other stakeholders about EAPs, emphasize the ways EAPs are **in their own best interest** and their community's best interests. Messaging to EMDs must make the case for why EAPs on dams in their jurisdictions are important to them and their ability to do their job.
- Where there already are EAPs on HHP dams, increase messaging to dam owners and EMDs about the importance of updating and exercising EAPs periodically so they do not become less effective. Explore the idea of developing news features about the positive impact and "lessons learned" through EAP exercises.
- Use communications materials and support for meetings and workshops to help bridge the gaps between bureaucratic "silos" or stovepipes within state government and between state and federal agencies.
- Build into the tactical elements of the program formal mechanisms, methods and best practices for measuring the effectiveness of communications strategies and tools. These feedback loops and best practices will be monitored and reported monthly. They include:
  - Logging behavioral responses (phone calls, requests for additional copies of brochures),
  - Gathering DSA website metrics showing traffic patterns into and through the site,
  - Tracking the correlation of peaks in website traffic with other campaign elements such as mailings and news articles,
  - Tracking news media calls, publication/broadcast of DSA news releases, news feature stories, and interviews,
  - Monitoring social media interactions such as blog posts and Facebook community development,
  - Documenting the number of new EAPs and any EAPs in process as the Outreach Campaign winds down.
- Create public support for EAPs by generating urban and rural publicity about the public safety importance of EAPs. Include messaging that addresses the notification difficulties created for EMDs by the changeover from land phone lines to cell phones.
- Continue to use and leverage the distinct DSA brand identity. Use the DSA website as the centerpiece, adding updated information and news for each of the four target states. Expand cross-links with stakeholders and public action organizations interested in EAPs.

- Use the reach and power of social media to create more interactivity and traffic for the DSA website. For example, add a blog and a Facebook community as the first steps to introduce social media to the DSA outreach.
- Use public relations techniques such as news releases, fact sheets, and news feature “pitches” targeting media as part of building public awareness of the program. Focus on environmental and science reporters at major daily newspapers.
- Provide fast delivery of materials and projects, and use the flexibility of the Outreach Campaign to cut through bureaucratic obstacles that frustrate DSOs, such as slow state budgetary procedures, lack of funds for outreach, layers of approvals within state government, and political interference. Make fast delivery of needed support a hallmark of the Outreach Campaign even as more states are added.
- Remain alert to new ideas and opportunities not anticipated early in the program.
- Leverage the interest and credibility of secondary stakeholders to create more public awareness of the need for EAPs. For example, spotlight the most recent findings of the ASCE Report Card for each of the four target states, and where possible enlist state ASCE leaders to help promote the need for EAP authority.
- Ensure the Outreach Campaign is aligned with other FEMA mitigation programs in terms of language and objectives. Include updates for FEMA regional dam safety and mitigation staff, and leverage their knowledge and contacts within the target states to further the effectiveness of the Outreach Campaign.
- Ensure accessibility of the DSA website and other Outreach Campaign components, where applicable, through compliance with the accessibility standards issued by the Architectural and Transportation Barriers Compliance Board at 36 CFR 1194 and <http://www.section508.gov>.

### **Tactical Elements Common to All Four States**

This Action Plan includes several tactical elements that will be common in the outreach for each of the four states, although each will be customized and written to reflect information and content relevant to each state. Based on feedback from DSO chiefs in the four states, they are comfortable with these elements. They will still be asked to review major components before they are released. These include:

- **Develop letters for VIPs.** Write and mail letters to VIPs (key administrators and legislators usually) informing them of the purpose of the state’s outreach campaign and how it will support EAP development. The DSOs will be offered the opportunity to send these letters themselves if they prefer, or even use email. If there are delays due to bureaucratic approvals and difficulties, DSA will send the letters to keep the contract on schedule or cancel the letters if they are not considered essential by the DSOs. These letters would go out after the

state's DSA website pages are posted. These letters may trigger opportunities for DSOs to have more dialog with others interested in improving dam safety regulations and EAPs.

- **Expand the DSA website.** Research, write and design the text and graphics to add the new states to the DSA website. The DSA landing page will be redesigned to add each state's EAP data snapshot, iconic dam image, and dot on the national map as click-throughs to the state's content inside the website. A reminder about the importance of updating and exercising existing EAPs also will be added to the landing page, with a click-through to a new content section on the different types of EAP exercises (some of this is now in the Texas section). The updating of data, laws and regulations for the three current states already has been completed, along with posting of additional news items for each state. Graphics and information for the new states will be reviewed by the DSOs before going "live." Images that are correct for the state (recognizable and typical of state-regulated dams in the state) will lend credibility to the program and help anchor its local flavor. The images, which also can be used in the state-specific brochures and the EAP exhibits, help emphasize the "grassroots" focus of the program. State-specific photography will be augmented when necessary by royalty-free stock photos. Links and content will be updated with recent FEMA/DHS documents, such as the new FEMA 64 and inundation map guidelines. A new section will be added on typical dam "incidents" such as seepage, slides, faulty gates and spillways. Another topic of interest is public education projects by dam owners and emergency managers on what local residents should do during an emergency. The new website should be live in early March, depending on how promptly each state's DSOs can review and approve the content.
- **Add social media to the DSA website.** A Facebook community will provide a platform to bring together dam safety officials, dam owners, emergency managers, and stakeholders. Another tool to stimulate conversation and contacts across and within state lines will be a blog on topics related to EAPs, dam incidents, regulatory and legislative issues, barriers to EAPs, best procedures for completing various aspects of EAPs, with postings and quizzes by the outreach team to stimulate responses/dialog, ideas, and helpful information for these audiences. This should be in place by late February.
- **Produce user-friendly, targeted brochures.** Two brochures, one for dam owners and one (the "Public Brochure") for EMDs and Non-Governmental Organizations (NGOs), will be created. There will be four state-specific versions of each brochure. They will fold down to fit in a #10 envelope and to fit literature racks at shows/meetings or countertops. They also will be provided on the state DSA website for download and reprinting. The Dam Owners Brochure will detail what an EAP is, what it contains, why it is important and in the best interests of dam owners (liability, community responsibility), and where they can go (DamSafetyAction.org, DSOs, FEMA, ASDSO) to learn more about an EAP and creating one. The Public Brochure will contain some of the same information, but will focus on the importance of EAPs to those who live, work, travel through or depend on others there for goods and services. The Public Brochure tells how to identify HHP dams of concern, whether those dams have EAPs, and how to learn more about dams and EAPs. The content and images of the Public Brochure will educate the public, but also inform EMDs and First Responders. While suitable for distribution at meetings, workshops, fairs and other public meetings, the Public Brochure provides information that would help emergency managers

understand the classification of HHP dams, the importance and content of EAPs, who may be at risk from a HHP dam, how to find out where HHP dams are located, and who owns them. The brochure informs citizens of their role in making sure there is a comprehensive EAP for any HHP dam inundation zone. This brochure, along with other Outreach Campaign components, can help the public understand the state dam safety program and where to call if they need to report a problem with a dam. These brochures should be ready for DSO review by mid-March.

- **Produce Inundation Mapping Brochures.** Research, write and design a generic Inundation Mapping Brochure, a variation of the larger brochure currently in the Publications tab of the Missouri section of the DSA website. The brochure will underscore the importance of knowing the extent of inundation zones below HHP dams, and how the maps are created. This piece will not be state-specific. This is an 11 x 17 inches sheet folded down to fit a #10 envelope for direct mail and literature racks. The brochure was created so that dam owners and the emergency management community could better understand the detail, purpose, and importance of the inundation maps. It includes a set of three maps the Missouri DNR created for one lake, plus one in a series of maps the USDA Natural Resources Conservation Service (NRCS) created for another lake. The NRCS map was used to show that inundation maps are the key to a comprehensive EAP, regardless of source (DNR or USDA or another agency). The brochure was developed in close cooperation with DNR to assure technical accuracy. A more generic version will be created for states whose regulations are deficient in regard to inundation mapping or where better understanding of the maps is needed. The brochure will note that maps are needed even if they are not required by statute or regulation. For that purpose the generic version might include samples of Simplified Inundation Maps (SIMS) if DSOs see value in them or are recommending them. These brochures should be completed by the end of March.
- **Produce 6x9" postcards, two each for dam owners and EMDs.** These cards feature strong graphics of a dam failure along with a very direct message. For dam owners, it typically asks "If Your Dam Fails Do You Have a Plan? Know What You Need to Do?" The back of the card would show a photo of a breach and another photo of a severe sinkhole on the face of a dam, with the headline: "Don't Put Off Having a Plan Until There is an Emergency." The EMD cards ask a similar question while noting the importance of identifying HHP dams in their jurisdictions and having EAPs for them in their mitigation plans. Text in these cards also may reflect an event in the news that can be leveraged to strengthen the message. The "call to action" is once again to get in touch with the dam safety office for help preparing an EAP before it is too late. These postcards should be completed by mid-April
- **Produce emergency contact refrigerator magnets.** These magnets, about the size of a smart phone, spotlight emergency contact information dam owners need to keep nearby. The state-specific magnets feature the image of a severe sinkhole eroding a dam face and reaching toward the crest of the dam. The headline over the image is: "Got a Problem with Your Dam?" The secondary headline is: "Do you have a slide, sinkhole, overtopping or other rapidly developing emergency in progress?" Text in large letters says: Call 911. Secondary text provides the state dam safety program daytime and after-hours emergency phone numbers, along with other information. Dam owners are reluctant to call 911, often trying in



vain to deal with a dam emergency themselves. They may not have their EAP at hand. This magnet tells them the right thing to do. The cover letter that comes with it emphasizes how to proceed in an emergency and the importance of having an EAP, exercising it, and updating it. DSOs will have a chance to customize the magnets to better fit their state's guidelines and procedures. One DSO suggested adding the words: "Activate your EAP and call your engineer for guidance" with a space for the phone number to be added. The magnets should be produced and ready for mailing in April.

- **Work the stakeholder lists.** Comprehensive mailing and telephone lists for primary and secondary stakeholders will be researched and developed for each state. The list will note organizations that have newsletters or websites and contacts. These contacts will be pitched news items about EAPs and offered links to the DSA website. This activity will begin in mid-March and continue through October.
- **Initiate direct mail campaigns.** Multi-part direct mail campaigns will be created for dam owners, local EMDs, and leaders of secondary stakeholder organizations. There will be three to four mailings each to EMDs and dam owners, and if funds allow, a possible fifth mailing. Each flight would go out two to three weeks apart. Letters will note the importance of EAPs and provide suggestions for following up to get started on EAPs. The letters also will contain reminders that although creating an EAP is the first step, updating and exercising an EAP are important because these are "living" documents. Any events in the state that would underscore EAP importance will be noted. Along with the letters, each mailing will include one of the brochures and later will include the magnet. With each mailing there will be a few calls to the toll-free Outreach Campaign phone line from dam owners or emergency managers or other stakeholders who have questions or want to talk about starting on EAPs. There also will be more "hits" on the DSA website. The Outreach Campaign team will relay to DSOs any important information in these calls. The mailings also generate a few pieces of returned mail, and the Outreach Campaign team will forward these corrections or errors to the DSOs so they can update their records. Timing of the direct mail campaigns will be March to June.
- **Create EAP exhibits.** Research, write and produce the graphics and text for a tabletop display customized for each state and illustrating the importance and content of EAPs, along with contact information to get started. Each state has indicated an interest in having this item, which they can use in workshops and meetings. The 106" x 58" displays collapse into a single carrying case, along with graphics, and are shipped free of charge to each state. Target for delivery of the displays will be mid-February to mid-April depending on when each state has the workshops scheduled.
- **Promote and support EAP workshops.** DSOs will be urged to conduct EAP workshops with dam owners and EMDs, whether the DSOs usually handle the meetings or use contractors. The Outreach Campaign will provide support for these workshops (the exhibit, invitations, handout literature, local news media notices) and attend them, if possible, to learn dam owner concerns, questions and other issues that may become evident. DSOs will be urged to include floodplain managers as well as EMDs and dam owners in their EAP workshops. This activity should be coordinated with RiskMap communications and

mitigation programs as appropriate. These workshops will likely fall between March and mid-summer.

- **Create state-specific presentations.** Another way to support workshops and meetings about EAPs is to provide PowerPoint presentations. The presenters can be Outreach Campaign staff or the DSOs, and the presentations can be edited to suit different audiences. DSOs also may call on the Outreach team for recommendations regarding their own presentations. These presentations should be prepared as needed, and some may be posted online as PowerPoint documents or as part of webinars. They are likely to be needed between March and September.
- **Provide show staffing.** If time and budgets allow, the Outreach Campaign should attend meetings, workshops, conferences and other activities involving EAPs as a topic. These provide excellent opportunities to see how the DSOs or EMDs are using DSA materials and the questions or issues from the public or stakeholders. It may be possible for someone from Outreach Campaign to participate in presentations about EAPs or the Outreach Campaign. These opportunities can be expected between April and October.
- **Write and distribute news releases and feature stories.** Media lists will be custom aggregated for each state. Public relations outreach will include writing and distributing news releases and news features on dam safety/EAPs to these media lists. These news stories usually are written by Outreach Campaign PR associates in the target states or nearby. In each state, one news feature will focus on NRCS watershed dams and the need for EAPs on them, and will be placed with agricultural publications in the state. Story “pitch” letters will be sent to agriculture and environment beat reporters at the state’s major daily newspapers. A spokesperson for each state’s ASCE Section will be identified for use in news features that highlight the age and condition of many dams that need EAPs. News releases and features may also highlight that May 31, 2014 is the 125<sup>th</sup> anniversary of Pennsylvania’s Johnstown Flood. Other news releases may leverage events in the news – such as legislative developments or problems with dams – to highlight the role of EAPs in emergency alerts and mitigation planning. Media relations may be targeted to specific areas of a state where there are HHP dams of particular concern. News releases for each state are posted on their DSA website pages as part of the Online Media Kit. In some states, news releases and media relations may need to include some sensitivity to political issues so there is not a backlash that would be counter-productive to EAP initiatives or needed legislative changes in dam safety regulations. This type of work should begin in March and continue until contract’s end.
- **Track media coverage.** Publication and broadcast of DSA news releases and feature stories, along with other news about dam safety, will be monitored using VOCUS media software. Pertinent news items will be posted on the appropriate state’s DSA website news page. Reprints of features also may be acquired and made available to DSOs and EMDs as appropriate. This activity begins in February and continues until contract’s end.
- **Implement public relations initiatives with stakeholder organizations.** In coordination with the DSOs, this activity is likely to include;

- Suggestions to educators that HHP dams and EAPs would be good science class and community service projects (possibly including further “Flood Risk Education in Schools” availability of the Wards Flood Models),
- EAP news items offered for newsletters of professional and service organizations regarding HHP dams and EAPs,
- Suggestions to real estate brokers and developers that the presence of HHP dams and the lack of EAPs for those dams could be a significant disclosure responsibility to home and commercial property buyers,
- Urging land use planners to consider the impact on community risk and dam owners when development downstream causes reclassification of a dam to HHP status,
- Providing state lake management societies with newsletter items about the importance of EAPs for their downstream neighbors and their liability.

The news release and news features program should include targeting of business press and special interest publications that are read by stakeholders. Examples are agribusiness publications, city business journals, and trade magazines for industries such as real estate, construction contracting, transportation, hospitals, nursing homes, education, power, food processing. Also, hunting & fishing magazines, other outdoor sports, environmental issues, and religious organizations. The number and quantity of these efforts must be limited and highly targeted because of budget and time constraints of the Outreach Campaign. But if carefully focused to the most important stakeholder categories in each state, news items and feature stories can be effective in building awareness of EAPs among stakeholder groups. Timing will be late March through October.

- **Leverage opportunities.** In each state there likely will be unforeseen events that will occur during the course of the Outreach Campaign. DSOs also will have suggestions for new tactics to pursue or implement. Brainstorming with DSOs will discover some of these opportunities, any time between March and the end of the contract.
- **Gather findings and metrics.** Each of the cited strategies and tactics will be applied using best practices for outreach and marketing, and each will produce varying levels of feedback on their success. Phone calls to the DSA website toll-free line are fielded by the Outreach team and tend to peak in response to direct mail and news about problems with dams. Phone calls and emails in response to direct mail also are tracked. Requests from the state dam safety officials and emergency managers for additional brochures are an indicator of their successful deployment. State officials are asked to report on the success of workshops and other activities in the Outreach Campaign. Media monitoring tracks news release pick-up. Postings to the blog and “friending” in the Facebook community will be indicators of success with these components. All these feedback loops will be monitored and documented during the implementation of the Action Plan and afterward.
- **Write monthly status reports.** Monthly reports will summarize activities, project status, observations, issues and suggestions that pertain to the previous month and the upcoming month(s). These reports are important because they keep FEMA contract managers and the NDSRB’s EAP Workgroup aware of all aspects of the program execution. The reports help the contractor focus on the most salient activities during the month and look ahead to future

developments. The reports allow the communication of opportunities and changes that may not have been foreseen in the original plan but that will strengthen the Outreach Campaign. Reports also are a way to convey to FEMA issues and obstacles that were important to DSOs and EMDs in their EAP work. There also will be opportunities for teleconferences to provide updates to the Workgroup and the NDSRB. These monthly reports began in October and will continue until the last month of the contract.

- **Write the Final Report.** A report on the results of the Outreach Campaign will summarize activities conducting during the campaign, the success and/or failure of the activities, the results achieved, and recommendations for further expansion and implementation of the Outreach Campaign in other states, such as the five that may be added during the Phase 2 option period. This report will be written and presented to the NDSRB and the EAP Workgroup in early 2015.

### **Optional Tactical Elements**

There are three optional tactical elements that would add reach and impact to the program. They also would add some cost not included in the current Outreach Campaign funding. These elements are presented here as options for FEMA to consider. If there is interest in adding them, each will be fully detailed and budget recommendations provided (the original Price Proposal and resulting Order included estimates for each of the three).

- “Testimonial” 3-5 minute videos would be a strong addition to the DSA website. These would be interviews with dam owners, for example, who have completed EAPs for their dams and who comment on how important the EAP is for their peace of mind, community responsibility, and liability considerations. Comments by the dam safety officials and emergency managers who worked with dam owners would be included. An additional suggestion from the NDSRB EAP Workgroup during discussion of this Action Plan was that another video topic could be interviews with dam failure victims, along with videotaping and posting on the DSA website of an EAP workshop for dam owners and emergency managers, which might be part of webinars on how an EAP is created and exercised.
- Adding more EAP information to FEMA.gov along with better integration with a social media component for the DSA website.
- Partnering the DSA activities with other federal programs to leverage their operational and outreach resources to promote EAPs. These other FEMA programs would include Preparedness, Risk MAP, FloodSmart, Grants, Community Rating System, USACE Silver Jackets, and others as appropriate.

### **State-Specific Tactical Elements, Variations and Considerations**

#### **Georgia**

Georgia does not have statutory or regulatory authority to compel HHP dam owners to create EAPs, even though the November 1977 failure of Kelly Barnes Dam above the Toccoa Falls Bible College and resulting flood killed 39 people and inundated part of the campus, including a trailer park. Toccoa became one of the iconic dam failures of recent decades and led to the state’s Safe Dams Program of inspections and regulation. DSOs in the Safe Dams Program can encourage HHP dam owners to develop EAPs, but few have done so. The Safe Dams Program

staff does not know exactly how many EAPs exist for the state's 167 HHP NRCS watershed dams. Many of the state's unregulated coal ash dams are HHP, as documented in recent years by the U.S. Environmental Protection Agency (EPA) and also in the "State of Failure" report by Earthjustice and the Appalachian Mountain Advocates.

### **EAP Obstacles**

Tom Woosley, manager of the Georgia Safe Dams Program within the Department of Natural Resources (DNR), noted these obstacles to EAP compliance as reasons why only about 30 EAPs have been completed on 474 HHP dams:

- The lack of EAP authority is primary
- Several DSO staff reductions over the past four years, including the latest decrease from six to five
- No online access to EAP information because the Safe Dams Program has no web page (no other state in this Outreach Campaign is this "invisible" in the state's online presence)
- The large number of dam owners and county emergency managers for a small staff to work with (Georgia has 159 counties)
- The lack of resources at the rural county level to help with EAPs
- No standardized Georgia EAP template (inquiries are referred to NRCS, ASDSO, and/or FEMA web information on EAPs and templates)
- Legislative indifference to updating the statutes to include EAP authority
- Opposition by some politically well-connected individuals and organizations
- Dam owners who do not see a need for an EAP
- With funds and staff at a minimum, the focus is only on what is statutorily required, such as inspections, basic maintenance and repairs (dam owner workshops will be hard to justify)
- Mapping of inundation areas is geared to classification of dams, not inclusion of a complete inundation zone for an EAP (when the first house below a dam is identified, it triggers the HHP classification and the mapping stops there)

### **Primary Stakeholders**

- HHP dam owners, managers, watershed dam sponsors, Georgia Lakes Society officials and members
- County emergency managers
- County Commissioners
- Mayors, city managers, municipal land use planners/administrators, and municipal watershed managers
- Georgia Emergency Management Agency/Homeland Security administrators and Area Coordinators
- Georgia print and broadcast news media

### **Secondary Stakeholders**

- DNR Environmental Protection Division and Watershed Protection Branch administrators
- Georgia Association of Conservation District Supervisors
- Georgia Soil & Water Conservation Commission

- Georgia Water Coalition (207 conservation and environmental organizations, hunting and fishing groups, businesses and faith-based organizations representing more than 300,000 Georgians)
- NRCS State Conservationist, Chief Engineer, watershed field engineers, and Resource Conservation and Development Councils (RC&D)
- Georgia School Boards Association
- Georgia Department of Public Health and EMS administrators
- Georgia Scouting organizations leadership
- Georgia Farm Bureau and affiliates, including Georgia Cattlemen's Association and Future Farmers of America (FFA)
- Georgia Health Care Association (nursing homes) and Georgia Hospital Association
- Georgia real estate brokers, developers, and property managers
- Georgia Chamber of Commerce
- Georgia Section of the ASCE
- Outdoors sporting and recreation organization leaders

#### **Urgent/Additional Outreach Elements for Georgia**

- **Prioritize Georgia for updating the DSA website.** The Safe Dams Program does not have its own page in the state DNR website. There is only contact information for Tom Woosley's office. DSA can fill this void through a comprehensive section within the DSA website. Timing on this should be urgent, with the website text and graphics designed and sent to Woosley for review by early March.
- **Workshop support in Georgia.** The Safe Dams Program conducted a dam safety workshop for dam owners in 2010, two in 2011, and two in 2013. The August 27, 2013 Dam Safety Workshop was presented by ASDSO and included a section on developing and implementing EAPs. These workshops caused a handful of dam owners to start working on EAPs. If the Safe Dams Program is able to fill two authorized vacancies for engineers, the outlook for more workshops in 2014 will improve. The staff cutbacks have meant that Program staff must first concentrate on statutory aspects of dam safety, and since EAPs are not statutory the need for outside help will be important. Outreach Campaign production of the EAP exhibit, brochures, invitations, and other activities can help preserve the workshops and strengthen the EAP component. Tom Woosley also expects to conduct a few "what we do" presentations on a regional basis and at the Association of County Governments of Georgia conference. These would include EAPs. The regional conferences by the Safe Dams Program would include county commissioners, EMDs and city planners to educate them about HHP dams, the need for EAPs, and the potential impact of dam failure on downstream development. Consideration is being given to using FEMA grant funds to hire an engineering firm that does breach analysis to join the Safe Dams Program in workshops where dam owners would be educated on EAPs in the morning and work with the firm in the afternoon, with the objective of having a largely completed EAP by day's end. This has the potential to become a Best Practice for other states to consider and for the DSA website and social media to highlight.

- **Focus on specific HHP dams.** Outreach can help the Safe Dams Program by focusing on several HHP dams that have been identified as highest in hazard, such as the Hickory Log Reservoir dam, which is a 185 feet tall and holds 6 billion gallons of water directly above downtown Canton (population 23,791). The Lake Petit Dam is 126 feet tall and normally holds 4,600 acre-feet of water above the community of Big Canoe, which is an hour north of Atlanta. These and a few other dams are of considerable concern to the DSOs, and the Outreach Campaign can focus resources on high levels of awareness of the EAP needs and the communities most at risk.
- **Develop a case study of how counties can achieve EAP compliance.** Gwinnett County in northeast suburban Atlanta has taken a serious and productive approach to obtaining EAPs for its 98 dams. This indicates county government can be a driver for getting EAPs on metropolitan dams, and once other counties are made aware of the Gwinnett approach they are likely to emulate it. The Outreach Campaign can create a case study on their methods, solutions to problems, and success in getting EAPs done in a county with a large population. Other suburban Atlanta area counties such as Cobb, DeKalb, Clayton and Douglas should have the resources to push EAPs. Rural Georgia counties face more challenges because of fewer resources and less understanding of the need for EAPs, unless a dam fails. Outreach also can help educate those county officials through the Gwinnett case study, with suggestions of how it can be scaled to fit available county resources.

### **Kentucky**

Dam inspections and enforcement are the responsibility of the Division of Water (DOW) within the Kentucky Department for Environmental Protection (DEP). DSOs can encourage HHP dam owners to develop EAPs, but few have done so. DSOs do not know how many EAPs there are on nearly 50 HHP NRCS watershed dams. NRCS will not share those EAPs with the state dam safety team. DSOs say NRCS dams are poorly maintained and DSOs believe they can do little more than send letters to the owners. DSOs believe there are more EAPs on the HHP dams, but they have not received them from utility companies and NRCS. They expect to see more EAPs in the coming months.

DSOs do not have authority over 15,000 dams related to coal mining. Many of the coal ash dams are HHP, as documented in recent years by the U.S. Environmental Protection Agency (EPA) and the “State of Failure” report by Earthjustice and the Appalachian Mountain Advocates.

The state does not have a formal educational program to teach private dam owners about their responsibilities. Dam owners are urged to use NRCS EAP templates. The DSOs have not produced their own template. With regard to inundation mapping, DSOs recommend that dam owners use simplified maps (about 100 have been completed). The state plans to use grant funds to hire outside engineers to help with modeling and work with dam owners on EAPs for those dams. It is expected to be a slow process. The DSO staff of five spends most of its time handling floodplain violations as well as issues and inspections for dams.

Shane Cook, DSO chief, reports that Kentucky’s dam safety regulations have not been updated since 1988. He plans to write suggested changes in 2014 to reflect technology advances. Getting regulatory changes through the state Legislature may present difficulties in the current political

climate, and including authority for EAPs may not be acceptable, particularly with opposition from agriculture and coal mining interests.

Kentucky DSOs have good relationships with the state-level EMD community, but not at the local level. DSOs would like to work with local communities and county officials on EAPs for dams in their jurisdictions. Many of these impoundments are HHP and pose a threat to parts of communities. They also are water supply dams, and there is additional liability when a dam failure cuts off water supplies to homes, businesses and critical care facilities. Water sales also accrue to the local governments, and a long-term loss of this revenue would be an issue. Many of these dams have problems. Communities also are building more and bigger detention ponds to hold stormwater. Education of floodplain managers about EAPs would be helpful because they are not required to have training similar to that of EMDs, and they sometimes also are mayors or county administrators. DSOs believe that a helpful course of action would be educating EMDs about EAPs so they in turn can educate dam owners. The EMDs may be able to overcome dam owner distrust of state government and get the owners to local workshops and meetings. DSOs would like the Outreach Campaign to also work with Significant-Hazard Potential (SHP) dam owners. DSOs believe their website is inadequate.

### **EAP Obstacles**

Shane Cook and designated EAP program contact Carey Johnson noted these obstacles to EAP compliance:

- Absentee, inattentive, or completely disengaged owners
- The lack of awareness by dam owners, floodplain managers, and EMDs about the importance of EAPs
- The lack of EAP authority
- DSO staff having responsibility for floodplain violations as well as dams
- The lack of interest by mayors, county executives and planners
- No standardized Kentucky EAP template (inquiries are referred to FEMA web information)
- Legislative indifference to updating statutes to include EAPs
- Opposition by politically well-connected individuals and organizations in agriculture and mining
- Dam owners who do not see a need for an EAP and do not trust state government
- Lack of cooperation by NRCS in sharing watershed dam EAPs and pushing harder to have them completed

### **Primary Stakeholders**

- HHP dam owners, managers, and watershed dam sponsors.
- County emergency managers
- County Commissioners
- Mayors, city managers, municipal land use planners/administrators, and municipal watershed managers
- Administrators in the Kentucky Emergency Management agency and the 11 Regional Response Offices
- Kentucky print and broadcast news media



## **Secondary Stakeholders**

- Division of Water and Kentucky Department for Environmental Protection administrators
- Kentucky Association of Conservation Districts and state Division of Conservation officials.
- Kentucky Soil & Water Conservation Commission
- NRCS State Conservationist, Chief Engineer, watershed field engineers, and RC&Ds
- Kentucky School Boards Association
- Kentucky Department of Public Health and Emergency Medical Services administrators
- Kentucky Scouting organizations leadership
- Kentucky Farm Bureau Federation and affiliates, including Farmers Trust, Kentucky Cattlemen's Association and FFA
- Kentucky Association of Health Care Facilities and Kentucky Hospital Association
- Kentucky real estate brokers, developers, engineering consultants, property managers, and Property Valuation Administrators (assessors)
- Kentucky Chamber of Commerce
- Kentucky Section of the ASCE
- Outdoors sporting and recreation organization leaders

## **Urgent/Additional Outreach Elements for Kentucky**

- **Focus on specific HHP dams.** Work with the DSOs to identify community water supply dams that are major concerns. Develop materials that focus on this type of impoundment and the meaning of a failure for citizens, businesses, and organizations that might be without water supplies for considerable periods of time, in addition to the threat to life and property. These and a few other dams are of considerable concern to the DSOs, and the Outreach Campaign can focus resources on high levels of awareness of the EAP needs and the communities most at risk. Develop a case study of a community water supply dam that has an EAP and the importance of it for area safety and water security.
- **Workshop support in Kentucky.** Help the DSOs develop a plan and materials for EAP workshops at the regional emergency management offices. Educate local EMDs about the importance of EAPs and getting dam owners in their jurisdictions to the workshops. Help floodplain managers and city/county officials understand EAPs and HHP dams in their area so they can also help recruit dam owners.

## **Indiana**

Dam inspections and enforcement are the responsibility of the Division of Water (DOW) within the Indiana Department of Natural Resources (DNR). HHP dam owners by state statute hire a private engineering firm to conduct and report on inspections every two years. DSOs can encourage HHP dam owners to develop EAPs, but few have done so. Indiana lacks statutory authority for inundation mapping and does not require the seven basic elements be included in an EAP. Indiana has posted a standardized template for EAPs, although owners have the option of using NRCS or ASDSO examples as guidance. The Indiana template is best used by a professional engineer with dam safety expertise. Non-technical dam owners typically have difficulty completing it correctly. DSOs report that owners of smaller dams who have fewer resources and owners of dams that have a less extensive inundation area do not need to create comprehensive EAP inundation maps. Some simplified inundation mapping techniques can be

effective for those dams. DSOs can require EAPs on new construction if they know the dam will be HHP.

Indiana DSOs plan to use some FEMA grant funds to hire a consultant to do inundation mapping for some privately owned HHP dams and provide the information to dam owners so they can complete EAPs. DSOs believe workshops for several dam owners in rural areas, or a “Dam Safety Day” approach, could help educate and convince more dam owners to create EAPs. DSOs have had some success educating dam owners about EAPs and their responsibilities through meetings involving the Indiana Silver Jacket Partnership Project (ISJ), which brings together local dam owners and state, federal and university experts in planning and mitigation. In 2009, seven clusters of HHP dam owners in counties scattered around the state were assembled and presented detailed dam safety and EAP information, along with the opportunity to create a written draft of an EAP, and guidance on conducting tabletop exercises. The workshops revealed that some dam owners were shocked by their responsibilities, and others were confused as to the role of government agencies in maintaining dams and responding to problems with the dams. EAPs are often not incorporated into other emergency response plans. The downstream public needs to be engaged and educated regarding HHP dams. Dam owners do not want to admit to having an emergency situation and feel helpless when one develops. The Silver Jackets approach seems to work and offers opportunities for further deployment.

DSOs report that in a state government culture that for several decades has sought to reduce regulation, the inertia that inhibits efforts to expand *any* regulatory program has become a major obstacle to statutorily mandating EAPs. Outreach to inform political leadership should emphasize the dangers of the aging dams, the long-term cost and impact on the state economy of a dam failure. DSOs suggest identifying a prominent personality who owns a dam and asking them to go on record about their EAP, why they believed it is important, and their encouragement of other dam owners to have an EAP. If outreach can make politicians “think it’s their idea” it might get them to move on EAP authority. DSOs also believe people may not realize that flood insurance maps do not necessarily reflect inundation areas below dams, and that flood maps do not constitute EAPs or inundation maps. Many dams are outside of floodplain areas.

DSOs believe there is power to change minds in the stories of the fatal dam failures in Hawaii, Georgia and elsewhere, including the December 2008 Kingston coal ash dam collapse. Many coal ash dams in Indiana are HHP, as documented in recent years by the EPA and the “State of Failure” report by Earthjustice and the Appalachian Mountain Advocates. That report states that Indiana ranks sixth in production of coal ash, with 71 ash ponds (more than any other state), and only 11 percent inspected by DSOs in recent years, with less than one-half given hazard classifications (4 are HHP or SHP), and 25 of the 41 coal ash dams inspected by EPA given a “poor” rating for structural integrity. Besides the lack of statutory authority for inspections by DSOs, the state also does not require that coal ash dams be designed by a professional engineer, report problems, have inundation maps or be bonded.

Indiana DSOs are concerned that some EAPs are now as much as 10 years old and have never been updated. DSOs would like the Indiana Outreach Campaign materials to address dams that already have EAPs and to emphasize the importance of updating and exercising EAPs. DSOs

would like to remind dam owners that while dams do not change ownership that often, EMDs and first responders do change periodically. Another issue DSOs face and need to clear up with EAPs and updates is dam ownership by several homeowners, often without a homeowners association to provide organization and clarity of responsibility. Indiana DSOs would like EAPs to be referred to as IEAPs (Incident and Emergency Action Plans) to convey the difference between smaller state-regulated dams and large, mostly federal, impoundments, or small but dangerous incidents and worst case scenarios. The Indiana DSOs see more “incidents” than emergencies, and would like to raise dam owner awareness of the need to intervene before an incident becomes an emergency. It can be a matter of “prevention vs. mitigation” if caught in time because dam incidents are slow progressions that need not become calamities. Linguistically, an “incident” is less intimidating and frightening than an “emergency,” the DSO chief notes. The Outreach Campaign will need to be careful, however, not to introduce confusion and inconsistency by referencing IEAPs.

DSOs have made progress educating real estate brokers through presentations at monthly regional meetings and the statewide conference. Dam safety became part of a state Realtors’ continuing education course, and DSOs are hoping to replicate the program in other states. A similar educational outreach effort with building contractors is needed. Many believe that if they simply build dams slightly under the 20-foot threshold for inspections, they have avoided a problem. That would not, however, relieve them and development homeowners of liability if a dam fails, and might increase liability. DSOs would like to develop a one- or two-hour program that can be given at meetings attended on a regular basis by building contractors. Development and engineering consultants are another target for this type of outreach. Indiana Lakes Management Society members are another stakeholder group. The Society’s website shows many workshops and educational materials on keeping a lake healthy and inviting, but none on dam safety. A major stakeholder group is the Indiana Association for Floodplain and Stormwater Management, along with the floodplain mapping and the consultants and engineers who work the floodplain program within the DOW.

As in other states, it can be difficult for DSOs to know with precision how many EAPs there are on Indiana’s 127 earthen dams that are part of 33 NRCS watershed projects built under Public Law 566. About 15 years ago, a NRCS report projected that 30 of the dams will have reached their 50-year design life by now. At that time 34 of the dams had homes or other buildings downstream and needed to be upgraded to meet current dam safety laws to protect people and property. Several dams had slope instability. In the Silver Jackets program NRCS dams with inundation maps were to be given priority for EAPs. Outreach Campaign communications to rural dam owners and watershed dam sponsors could help complete this objective.

### **EAP Obstacles**

Ken Smith, head of the dam safety program, noted these obstacles to EAP compliance:

- Legislative inertia inhibiting efforts to update the dam safety statutes to include EAPs
- Absentee, inattentive, or completely disengaged dam owners
- The lack of awareness by dam owners, floodplain managers, and EMDs about the importance of EAPs
- The lack of EAP authority
- The lack of interest by mayors, county executives and planners

- Opposition by politically well-connected individuals and organizations in agriculture and mining

### **Primary Stakeholders**

- HHP dam owners, watershed dam sponsors, and Indiana Lake Management Society members
- County and city emergency managers
- County Commissioners
- Mayors, city managers, municipal land use planners/administrators, and municipal watershed managers
- Indiana Silver Jackets Program participants
- Administrators in the Indiana Department of Homeland Security Emergency Management and Recovery agency, District Coordinators, and the EMS Commission members
- Indiana print and broadcast news media

### **Secondary Stakeholders**

- Division of Water and Indiana Department for Natural Resources administrators
- Indiana Association of Soil & Water Conservation Districts and state Division of Soil Conservation officials.
- NRCS State Conservationist, Chief Engineer, watershed field engineers, and RC&Ds
- Indiana State Soil Conservation Board
- Indiana School Board Association
- Indiana Scouting organizations leadership
- Indiana Farm Bureau Federation and affiliates. Indiana Beef Cattlemen's Association and FFA
- Indiana Health Care Association and Indiana Hospital Association
- Indiana real estate brokers, developers, property managers, and Property Valuation Administrators
- Indiana Chamber of Commerce
- Indiana Section of the ASCE
- Outdoors sporting and recreation organization leaders

### **Additional Outreach Elements for Indiana**

- **Workshop support in Indiana.** Help the DSOs develop a plan and materials for EAP workshops at the regional emergency management offices or a similar location that conveys the importance of EAPs for public safety. Educate local EMDs, county first responders and sheriffs about the importance of EAPs and getting dam owners in their jurisdictions to the workshops. Help floodplain managers and city/county officials understand EAPs and HHP dams in their area so they can also help recruit dam owners. Contribute support for the DSOs outreach to real estate brokers, builders, and consultants/engineers regarding the need for EAPs and disclosure of HHP status for properties and developments. Emphasize to builders and consultants that if they build dams short of the height threshold for state regulation, they may be adding to their liability by deliberately circumventing inspections that can detect and resolve structural problems before a dam fails. A few quotes from trial lawyers might help strengthen this message.

- **Strengthen the public awareness campaign.** Work with the DSOs on messaging that will help better educate the public about the dangers HHP dams present and the lack of action at the state government level to ensure that these dams have EAPs. Stress that it is not the large federally regulated impoundments that are the greatest risk, but the typical earthen dams with downstream development. Note the difference between flood insurance maps and the actual areas subject to flooding if a dam fails, emphasizing that inundation areas may not be in official floodplains but still remain at high risk if a dam should fail. Note the long-term cost to towns that lose their water supply, businesses that have to start over, the impact of losing communications and transportation infrastructure that must be rebuilt, families and jobs at risk, lawsuits triggered, and how having and exercising an EAP is part of managing that risk. Identify HHP dam owners who are supportive of EAPs and who will contribute to a case study of the positive aspects of having the EAP. Emphasize the discipline that an EAP can impose so that incidents are caught early and before they become emergencies. Help DSOs improve communication with county and community officials, who may in turn help bring pressure on state officials to act on EAP authority.
- **Focus on Updating EAPs.** Identify HHP dams with EAPs that either have not been updated and exercised for several years or that recently did so. For those that have been updated, highlight how many contacts were out of date, how much new development was not included, whether the inundation zone was more extensive and developed than the owner thought, and lessons learned from exercises.

### **California**

Dam inspections, supervision of construction and alteration, repair, maintenance, removal and regulatory enforcement are the responsibility of the Division of Safety of Dams (DSOD) within the California Department of Water Resources (DWR). Inundation mapping and EAP creation are the jurisdiction of the Mitigation Planning Division of the California Emergency Management Agency (CalEMA), which is responsible for overseeing and coordinating the state's emergency planning, prevention, preparedness, response, recovery, and logistics. While this separation of responsibility for aspects of dam safety is not typical of the other states in this Outreach Campaign, in some ways it is advantageous. It forces DSOs and the CalEMA Emergency Services Coordinators (ESCs) with EAP responsibility to have more direct contact with one another, thus helping to overcome the stovepipe effect of dam safety and EAP development being in different segments of state government. There may be more EAP inter-departmental dialog in California than in many other states.

DSOs and ESCs can encourage HHP dam owners to develop EAPs, but few have done so. At one time state statute said dam owners "shall" adopt emergency procedures, but when the law was renewed in 2004 "shall" became "may." Apparently the "shall" was not enforced or EAPs would exist for all HHP dams prior to 2004. California is in the process of a program lasting several years to increase the number of EAPs. With assistance of the National Dam Safety Program grants administered by FEMA, the state has completed the following:

- The DSOD contracted with local universities to document the as-is condition of EAPs in California.
- The DSOD in cooperation with CalEMA has developed and posted a standardized template for EAPs that the DSOD staff adapted from the NRCS sample EAP for earthen HHP dams. The template was modified to fit the situation in California and was created for use by the local ESCs working with dam owners. The template and the EAP process that DSOD developed and provided to CalEMA exemplify inter-departmental cooperation.
- The DSOD contracted with local universities to work with DHS and the University of Mississippi to beta test a process to help small dam owners develop inundation maps.
- The DSOD contacted all dam owners of HHP dams that do not have an EAP and requested that they complete an EAP. Many dam owners positively responded and are now completing EAPs. Dam owners that did not respond were sent follow-up letters from the DSOD.

California statutes require inundation maps for dams. Typically an owner may provide CalEMA with an “inundation area” image (“footprint,” sometimes highlighting evacuation routes) for the dam, usually generated by GIS software. CalEMA regional staff will visit the site with the dam owner and local emergency managers. If there are no homes or businesses present, CalEMA can issue a waiver relieving the owners of the inundation map requirement. If the waiver is denied, CalEMA will require an engineered inundation map. When that is provided, CalEMA will ask contractor hydrology experts at local universities to review it. If approved, the map is filed with CalEMA.

A drawback of the CalEMA structure is that the agency has only one engineer on staff, no hydrologists, and no staff members trained in breach analysis. Contractors provide that part of the work, which also helps assure that the maps will have some credibility. The DSOD also is working with the university hydrologists to determine the best engineering models to keep inundation maps updated. Some of the maps have since been updated for CalEMA. The University of Mississippi’s DSS-WISE software package is being used.

One secondary stakeholder group, real estate brokers, has great interest in the CalEMA inundation maps. The state’s Civil Code for real estate transactions requires the inundation maps as part of the required Natural Hazard Disclosure Statement provided to anyone considering buying property. The brokers also resell the maps and related information CalEMA develops and maintains. However, users of the maps are cautioned on at least one website that: Many of the maps were developed in the 1970s and had they been produced more recently different assumptions and methods would have been used.

The head of the Mitigation Planning Division is relatively new to the job and is currently working on a plan to reorganize the inundation mapping and EAP program with new objectives. An issue that hampers the EAP efforts of the Division is that there are no state funds tied to hazard mitigation, so this work is funded by FEMA grants. CalEMA has an Emergency Services Coordinator assigned to every county, and they in turn work with the local EMCs, who usually are staff or volunteers with the area Emergency Survival Program (ESP). A positive aspect of working EAP outreach through the Division is that their communications system reaches down to every local ESP through their county’s ESC and has been very effective. The local ESP

program leaders will listen to the ESC in their county, who can even hand them materials personally.

The California DSOD chief asked that the EAP Outreach Campaign staff not contact dam owners with direct mail because his office has already contacted all dam owners on the EAP issue and is sending follow-up letters as part of the multi-year EAP program DSOD implemented. The EAP Outreach Campaign will offer some materials in support of those efforts with dam owners. This was the approach taken in the Texas Pilot Study, with emphasis and resources shifted to working with emergency managers, stakeholder groups, and creating public awareness of the EAP need. The acute awareness of Californians regarding earthquake risks can provide opportunities to link the need for EAPs to the potential for earthquake-induced dam failure. The CalEMA Dam Safety Program of inundation mapping was established in 1972 following the near failure of the Lower San Fernando Dam during the Sylmar Earthquake. On the other hand, there is so much focus in California on earthquakes, forest fires, and floods from heavy rains that dams are not viewed with much urgency by emergency managers and the public.

FEMA Region IX is headquartered in Oakland, California and is interested in being closely informed of some of the EAP Outreach communications, particularly those targeting local EMCs. The goal is to reinforce to local EMCs that FEMA Region IX can provide long-term support for their EAP efforts.

Typically it can be difficult for DSOs to know with precision how many EAPs there are on NRCS watershed project dams built under Public Law 566. But in California the DSOD had a contractor determine the compliance situation. NRCS only lists 16 program dams in the state, and only one of the dams is approaching a 50-year design life.

### **EAP Obstacles**

David Gutierrez, head of the dam safety program, and two CalEMA ESCs assigned to EMDs, noted these obstacles to EAP compliance:

- Lack of authority to require EAPs
- Lack of resources and assigned personnel in CalEMA for getting EAPs completed
- Emergency management priority on earthquakes, forest fires and floods from rains
- Unwillingness of owners of dams, even major ones, to spend time on EAPs because they are not mandatory
- Legislative and Executive indifference to updating the statutes to include EAPs
- The lack of interest by mayors, county executives and planners

### **Primary Stakeholders**

- HHP dam owners and managers, California Lake Management Society officials/members
- County and city emergency managers and ESPs
- County Supervisors, County Administrators, and sheriffs
- Mayors, city managers, municipal land use planners/administrators, and municipal watershed managers
- Administrators in the CalEMA state office, regional offices, and county EMCs
- Administrators in the California Department of Water Resources and in Flood Control Districts

- California print and broadcast news media
- California Emergency Services Association leaders

### **Secondary Stakeholders**

- California Soil & Water Conservation Society leaders, California Soil & Water Conservation District directors and staff, California Department of Conservation officials.
- California Silver Jackets Program participants and leaders
- NRCS State Conservationist, Chief Engineer, watershed field engineers, and RC&Ds
- California School Boards Association officials
- California Scouting organizations leadership
- California Farm Bureau Federation and affiliates, California Cattlemen's Association and FFA officials
- California Association of Health Facilities and California Hospital Association officials
- California real estate brokers, developers, and property managers
- California Chamber of Commerce and California Small Business Association officials
- California Sections of the ASCE
- California Sierra Club and other environmental organization leaders
- Outdoors sporting and recreation organization leaders

### **Additional Outreach Elements for California**

- **Focus on the dams in greatest need.** Identify regions with the HHP dams of greatest concern to the DSO and work with the OES county and regional EMCs to provide support materials that will help incorporation of EAP emphasis in local hazard mitigation training. ESP groups and Silver Jackets should be included in the outreach in areas where they are active. Tie the need for EAPs to the risks of earthquakes triggering dam failure as nearly happened in 1972, with examples of further development downstream from dams 40 years later.
- **Leverage the Water Issues.** Water supplies and distribution, including water from reservoirs, is such an intense subject in California, with many influential organizations and constituencies involved. Provide those organizations with educational materials that link EAPs on HHP dams to their concerns, whether as conservationists, agriculturalists, environmentalists, flood plain managers, developers or county and local level government administrators.
- **Work with real estate and developer organizations.** Determine whether real estate brokers, builders, and consultants/engineers can help push the legislative agenda in the direction of requiring EAPs. Since inundation maps are required disclosure for real estate transactions, EAPs for those inundation areas are in their best interest because it helps alleviate their liability and responsibilities under the disclosure law.
- **Strengthen the public awareness campaign.** Work with the DSOs on messaging that will help better educate the public about the dangers HHP dams present and the lack of action at the state government level to ensure that these dams have EAPs. Emphasize that it is not the



large federally regulated impoundments that are the greatest risk, but the typical earthen dams with downstream development.

- **Educate city and county administrators.** The long-term cost and dislocation to towns from a breach or a major incident at a dam could be even more profound in California than in some other states because of the more dense level of development in many areas of the state. The number of lives at risk is likely to have increased significantly over recent years. The loss of their water supply and replacing it could be a long-term problem. The impact of losing communications and transportation infrastructure that must be rebuilt, businesses that must start over or move away, protracted and costly litigation, and lost tax revenue could be staggering for any community or city. Management of those risks is enhanced by having and exercising an EAP on any HHP dam that threatens the area under their jurisdiction. Help city and county officials understand that they should have a role in bringing pressure on state officials to act on EAP authority.
- **Work the media.** California has a robust and diverse news and communications structure. Coverage of water issues, safety concerns, and state government is extensive and lends itself to public outreach and education on HHP dams and EAPs for them.

## **Overview/Analysis of EAP Issues and Situation**

None of the four Phase 1 target states has statutory or regulatory authority to require completion of EAPs by owners of state-regulated HHP dams. In some cases if there is a major problem with the integrity of a dam, or if the dam is new, an EAP may be required as part of continued or new licensing of the dam. As a result, these four states have several hundred HHP dams that do not have EAPs. Many of these dams are well past their design lifetime. While they are not necessarily in danger of failure at present, they could be compromised by such stresses as very heavy tropical or seasonal rains, landslides, earthquakes and aftershocks; the malfunction of neglected key dam components such as gates that have become inoperable; or undetected or unrepaired problems such as seepage, clogged spillways, vegetation, and animal burrowing.

Most state dam safety programs have long been under-funded and under-staffed, including Georgia, Indiana and Kentucky. The severe economic recession of a few years ago and resulting sharp reductions in state tax revenue have had lingering impacts on state dam safety programs that experienced cutbacks in funding and staffing. This has resulted in state DSOs focusing on priorities such as inspections and normal regulatory oversight of dam operations and maintenance, leaving little time and money for outreach to HHP dam owners for EAP communications and workshops. This EAP Outreach Campaign is intended to assist state EAP dam safety programs. California's dam safety program has not been cut in recent years, but the state's emergency coordination and response budgets, like many other segments of state government, have had severe cuts.

The potential for a dam failure and loss of life is often not included in local level emergency management hazard mitigation planning. This issue recently has been receiving more attention. Locally, dam failure is a rare occurrence, so county and municipal EMDs typically have planning priorities they rank above dam failure – flooding from excessive rain, wind and ice storms, tornadoes, hurricanes, fires, train derailments, HazMat responses, earthquakes and forest fires. Further, EMDs in more rural counties may be part time and have little, if any, support staff. With terrorism prevention, response, and communications systems issues thrown into the mix since 2001, EMDs have even less time to worry about the rare occurrence of a dam problem in their jurisdiction.

Compounding the low priority of dam EAPs is the “stovepipe” communications in many states. This results from the state DSOs typically working within the environmental division of state government and the EMDs within the public safety division. This type of stovepiping is largely avoided in California because the DSOs have worked closely with the CalEMA EMCs to assist them in their work on EAPs and inundation mapping. The DSOD developed an EAP template for EMCs to use. The DSOD handles inspections and regulatory compliance.

Another continuing type of stovepipe can exist between a state's dam safety program and some federal agencies in some states. For example, some states have hundreds of watershed and water supply dams built with USDA help in the 1950s-1970s, usually with 50-year design specifications. NRCS directives state: “For new or rehabilitated high hazard dams (and other structures as required by State and local regulations) designed with NRCS assistance, an EAP shall be prepared prior to construction. Dam owners of existing high hazard dams that were originally designed and constructed with NRCS assistance shall be encouraged to prepare EAPs

for their dams.” The sponsor or land user has responsibility to prepare and implement the EAP in coordination with first responders, emergency managers, and DSOs. They are to be reviewed and revised annually and exercised at least once every five years. Training is to be provided for those with specific responsibilities for EAPs. The NRCS will provide technical data, breach inundation maps, EAP preparation assistance and review, and participation in annual reviews and testing for new and rehabilitated HHP dams. For existing dams NRCS is required merely to “encourage” development of EAPs, and any technical or review assistance is “if the State Conservationist determines resources are available.” This creates considerable variability from state to state.

The NRCS directives state that: “All individuals or groups who are signatory parties to the EAP shall receive copies of the EAP. **Copies shall be provided to the State dam safety officer** and other federal, state, local, and tribal authorities with responsibilities identified in the EAP. Each copy shall be identified with a control number so the landowner/sponsor can record the individuals and organizations that have official copies so they can be updated on a regular basis. Large-scale maps needed for evacuation purposes for some projects shall be provided to the authorities responsible for evacuation operations. To minimize the potential for improper use of information contained in the plan, the EAP should not be distributed beyond the preparers and emergency service personnel.”

While DSOs thus are supposed to receive copies of EAPs for new and rehabilitated HHP watershed dams, some DSOs have said they do not believe they have copies of many of these EAPs, particularly those completed voluntarily with NRCS encouragement on existing watershed dams. This problem may not be as significant with dams managed by the Federal Energy Regulatory Commission (FERC), the Bureau of Reclamation (BoR), and the COE.

The NDSRB Task Group on Emergency Action Planning and Response has determined (FEMA 608 report) that one reason many HHP dams do not have EAPs is a lack of communication to and between dam owners, DSOs and EMDs, as well as the public, segments of which are stakeholders even if they do not realize it. The actions included in this comprehensive multi-media Action Plan will address each of those needs as well as provide direct support to the EAP initiatives of DSOs in the four target states. The program also will continue to update and improve the DSA website support for Missouri, North Carolina and Texas, the three states in the 2009-11 Pilot Studies.

### **The Action Plan Approach to the Issues**

This Action Plan evolves from discussions with key DSOs, EMDs, and others in the four target states, as well as from a review of the recommendations and findings of the “Pilot Studies Final Report, National Outreach and Marketing Campaign To Promote Implementation of Emergency Action Plans For State-Regulated High-Hazard Potential Dams” (referred to herein as the May 2011 Final Report). This new Outreach Campaign is scaled and flexible to fit (1) prioritizing the target states by EAPS needed and lives at risk, (2) providing the level of outreach suitable for each state based on its EAP initiatives and needs, (3) the budgeting resources available, and (4) the desired timeframe as indicated in the contract’s Statement of Work and Deliverables Schedule.

The states will receive extensive personal interactivity between the Outreach Campaign staff and the DSOs. In California the Outreach Campaign staff will focus more on assisting the EMCs responsible for EAP development and inundation mapping. There will be direct mail to dam owners (unless DSOs request otherwise), emergency managers, and stakeholders who can impact improvements in state dam safety regulations. Contacts with the news media will communicate the message that when HHP dams lack EAPs, the result is an increase in the risk of a poor emergency response if a dam breach occurs. Where available, EAP state workshops will be supported with exhibits, handout literature, and presentation assistance. These efforts will be implemented as soon as possible and in a fully state-specific, grassroots manner.

While some elements of this Action Plan are somewhat “generic” and apply in each of the states, the Action Plan also recognizes the importance of maintaining the state-specific, localized understanding and focus to the greatest extent possible. Many of the communications elements will have similar themes, but the approach and content will take into consideration the state’s structural and political situation. One outreach and awareness strategy may work in many states, but some states will require different or differently implemented strategies.

Many HHP dams are now located in suburban subdivisions with considerable development below the dam. Even many rural dams built in the 1950s and 1960s for conservation or flood control now have housing development in their inundation zones. This outreach Action Plan targets both urban and rural dam owners, emergency managers, city and county officials, and other stakeholders. Outreach Campaign media relations and writing staff will work with news organizations and the business press that cover both urban and rural markets to multiply, balance, and broaden the Outreach Campaign’s impact. Media relations also will include blogs and “patches” (online community-specific news, information and engagement platforms).

The Action Plan includes a wide circle of organizations and secondary target audiences with interests in or near inundation zones – real estate brokers and building contractors, schools, hospitals, nursing homes, large farms and ranches, scouting and outdoor sports organizations. Each may be more important in one state than another. Some Action Plan elements also will highlight the need for EAPs for coal ash dams, a particular concern in some of the target states.

The Action Plan addresses EAP compliance barriers that DSOs and EMDs have helped identify. The lack of statutory authority to require EAPs is the leading impediment. The cost of inundation mapping to dam owners is a difficult barrier, as is political/legislative indifference. The Plan takes into account each state’s barriers and its geography, demographics, number and types of dams in inventory, relationship of state DSOs with FEMA, social attitudes about regulations, and DSO activities within the state. The structure and organization of dam safety and emergency response agencies have been analyzed, along with political factors such as new regulations and pending legislation related to dam safety. Another obstacle to exercising and implementing EAPs is that people are dropping land lines for cell phones with unlisted numbers. EMDs can have a difficult time developing effective call trees for EAPs. This is an issue the May 2011 Final Report identified and that the Action Plan will note in several communications pieces.

The Action Plan uses research findings, creative messaging, strategic communications, and public education customized to each state’s situation. To achieve “buy-in” from state VIPs (key

legislators and influencers) who oversee or can influence dam safety programs, a letter of notification and perhaps further discussions with the VIPs will be part of developing additional grassroots communications. The Action Plan strategically integrates DSA activities with each state's initiatives and projects related to EAPs and public education. As the Action Plan implementation progresses, discussions with DSOs will help determine whether additional steps are needed or new opportunities have arisen. This is an important "partnership" aspect of the Action Plan and strategic approach.

The political atmosphere in most states is not conducive to additional regulations to plug gaps in EAP authorizations for state dam safety programs, nor for additional funding for dam safety and infrastructure improvement. Some of the Action Plan elements will address this problem by including cautionary messages that every year the Nation's HHP dams get older and their safety less certain, and states need to move past apathy, unawareness, uncertainty, and regulatory shortcomings. DSA materials will continue to emphasize that an EAP is not only "a public health and safety benefit," but simply "the right thing to do." DSA will provide dam owners with the needed information, some prompting, and links to help working on an EAP, while also urging stakeholder groups to get involved in ways that further their interests and those of their community and state.

Several key points cited in the May 2011 Final Report have been considered and incorporated into development of this Action Plan. (These points were elaborated further in that Final Report.)

- One key to the effectiveness of an EAP Outreach Campaign is the history of the state's own outreach effort, and its target audiences. Analyzing whether the state has ever had funds and programs for outreach was an essential first step in planning. Outreach will increase EMD awareness and interest early in the state campaigns.
- Workshop support is one of the most productive ways to work with states that do not have well established outreach programs but are conducting workshops for dam owners and EMDs, perhaps for the first time. Brochures, magnets, postcards, providing letters of invitation, and EAP-themed tabletop displays all work well in helping DSOs produce high quality workshops and turn out attendance. Where states already have started workshops, efforts can be more effective if focused on the emergency management side of the dam owner/EMD partnership, with additional support promoting tabletop exercises and public awareness.
- Flexibility is important in implementing outreach communications to improve EAP compliance. The Action Plan anticipates that new or better ideas and opportunities may develop.
- Unanticipated political developments or controversies can overshadow and complicate outreach efforts, but usually a work-around or accommodation can be found that does not diminish the effectiveness of the outreach or create additional problems for the state dam safety program. This must be balanced against being certain that delays or other accommodations do not undermine the outreach from the federal perspective.

- State DSOs may have outdated contact information in their dam inventory databases, but generally this will be apparent before the first mailing. Updating the state's data seems to happen only after inspections, and perhaps not even then. There apparently is no systematic process in some states for verifying contact information for dam owners and managers. This is most likely a result of insufficient support staff for DSOs. The turnover in emergency management ranks requires updating of contact lists even more often than lists of dam owners. As part of this Action Plan, DSOs will be notified about direct mail that was returned and changes of address so that state dam owner databases can be updated.
- EAP compliance initiatives of state DSOs often are hindered by insufficient funds and staff, inadequate authority for EAPs, internal bureaucratic red tape, and their own inexperience in outreach since their primary job is inspection and engineering. The Action Plan will be implemented with sensitivity and cooperation in partnering with DSOs to pave the way for positive results.
- The distinct "brand" DamSafetyAction.org created a fresh, objective "grassroots" identity and organizing concept separate from federal and state government entities. This has become an information source and interaction opportunity that is more comfortable for dam owners and other stakeholders to use. It also is an EAP-specific clearinghouse for information from all government and other sources as well as communications developed specifically for each state. The DSA name, attractive new logo, and new website provided the desired umbrella "brand" for the Pilot Studies. The Action Plan includes expanding the website to increase its content, traction and cross-links among stakeholders and dam safety programs.
- The power of a good website and its 24/7 availability can be a very effective educational tool for dam owners, emergency managers and others seeking information and understanding. Dam owners and others do not always seek information during a normal government work day. Phone calls to the DSA toll-free number continued well after the Pilot Studies ended, and can be expected to pick up substantially as the new Action Plan rolls out and the four new state sections are added to the website. The website solves several problems common across many states and even federal agencies: (1) current EAP information is often buried so deeply in state and some federal websites that it is difficult to readily find; (2) important information on one website may not be present on another website; (3) some current information on government websites is very technical in nature and is not readily understood by non-technical people; (4) some websites are not attractive and easy to navigate, and may be outdated; (5) many users become frustrated if they cannot acquire information within about "three clicks." The DSA team will focus on researching, acquiring, creating, and consolidating information from these websites into [www.DamSafetyAction.org](http://www.DamSafetyAction.org). This includes historic and legal background on each state's dam safety laws/regulations and dam failures, EAP resources for the public and dam owners, and information for news media. A common landing page provides routes to separately branded state sections and web pages. Those sections are state-specific in content and to some extent in look, though common pathways for navigation and topics provide continuity among the states. Each is comprehensive in detailing the state's dam safety/EAP laws and regulations, contact information for the dam safety programs, and other state information. Design facilitates

further expansion of the website for the additional states. The website also provides avenues for immediate response to relevant state and national dam safety news.

- Not all dam owners are experienced Internet users who seek information there. They may not even realize they need EAP information. Well-designed mailings and a toll-free phone number for information will reach those individuals better than a website. The Action Plan includes multi-part direct mail campaigns to dam owners, EMDs and others as appropriate.
- Most dam owners will not know the importance of inundation mapping, and may be surprised by how far water will go if their dam fails. States providing maps for dam owners find that this can be the best opportunity for starting the EAP dialog and process. The Action Plan provides more information on inundation mapping as a means to start that conversation between DSOs, EMDs and dam owners.
- Most dam owners are willing to complete an EAP, and often are anxious to get started. They may not know they are supposed to comply or know how to get started and where to get help. They are fearful of unexpected costs associated with an EAP. The Action Plan includes ways to provide answers to all these questions and facilitate contacts between dam owners and the DSOs.
- Many dam owners do not realize their liability. Most of them do not believe their dam could be a problem. And most do not realize how quickly a problem such as seepage can turn into a sinkhole or slide and then a collapse. They also do not realize their responsibility to their downstream community. Many are reluctant to call 911 or the state emergency action number. Some do not know what numbers to call and in what order. The Action Plan outreach elements also will address these issues and questions.
- A sympathetic ear and some accurate information can be reassuring to dam owners. Some dam owners called a third party – the toll-free DSA number – before calling the state dam safety office for more information about EAPs. Owners may fear a call to the state will trigger negative consequences such as a fine or further inspection or high cost. This pattern is likely to be strong in the four target states. The Action Plan includes methods of fielding inquiries so that dam owners become comfortable making that call to DSOs.
- EMDs and first responders may deal with emergencies all the time, but that does not mean they know what a HHP dam is or the need and legal basis for an EAP. The emergency planning and response community, and perhaps also the watershed organizations, often need education and outreach as much as dam owners. Many EMDs do not know that they need to be involved in creating EAPs or that they should ask the DSOs for copies of EAPs that may already exist for dams in their jurisdictions. When EMDs change jobs or offices are moved, EAPs may be lost. And if an EAP has not been updated and exercised regularly, it may no longer exist or be fully accurate. These issues are important because local EMDs can be a driving force in convincing dam owners to complete EAPs regardless of whether the state has regulatory authority. Action Plan communication to EMDs will include messages to address these concerns.

- The local EMD is usually tasked with developing the EAP notification tree. Because some EMDs are part-time and/or volunteers, they have many responsibilities but limited resources and time. This can become a major bottleneck in the completion of EAPs. The problem is that even with inundation zone land parcels identified, the names and phone numbers of occupants or owners must be verified and updated. With the move from land phone lines to cell phones, keeping a phone contact list current is now more difficult. Some suburban counties have between a dozen and three dozen HHP dams with hundreds of parcels in their inundation zones. Under the best of circumstances it can be challenging and time consuming for EMDs to develop and update notification trees when they have no support staff, perhaps no knowledge or availability of software such as ArcView, and other high priorities. Action Plan elements directed to EMDs will focus on creating awareness and action on EAPs for dams, and communications to the public will include suggestions to contact local EMDs if they believe they are in an inundation zone. Outreach staff will promote the Integrated Public Alert and Warning System (IPAWS) to schools, churches and organizations that may be able to help connect EMDs and citizens in inundation zones.
- One aspect of the Pilot Studies often cited positively by DSOs was that materials and communications tactics could be developed and deployed quickly and without cost to the limited state program budgets. A Missouri dam safety engineer said that it might have taken a year working through customary state channels of justification, approval and production to get an EAP tabletop exhibit that the Pilot Study provided in three weeks. State dam safety programs often have no budget for direct mail or the creative-production costs of the brochures and postcards. The Action Plan includes these types of projects for the four target states.
- DSOs and EMDs deal with public safety, but from different perspectives. One is prevention, the other is mitigation. The two are not frequently in dialog, cooperation, interface or outreach to one another. The extent of the isolation will differ from state to state, as will the willingness to partner. The Action Plan includes elements to help build communication bridges.
- Community/residential association dams will receive considerable emphasis in the Action Plan due to their increasing number, particularly in suburban areas, and the number of persons and properties that can be impacted by a breach. These association responsibilities and officers rotate periodically, often when a property is sold and the contact person for dam management relocates. EAP development may stop. EAPs completed may be lost. The Action Plan includes communications targeting associations that have HHP dams, including state chapters of the North American Lake Management Society.
- News organizations may not readily see the importance of EAPs unless there has been a breach or a major weather event. Media relations outreach communication does not have to be overly dramatic or inflammatory, but does need to convey the importance of EAPs to the public in terms people can relate to, preferably localized. The Action Plan media relations aspects will include those considerations.



- Social media continues to develop and provide additional opportunities for communication with dam owners, EMDs, DSOs and stakeholders. With a longer-term program and more states in the Outreach Campaign, the addition of a blog and Facebook community is now a more viable element of the Action Plan. Other social media opportunities also may be used, but some, such as Twitter, are better left to “live” emergency response communications. The Outreach Campaign might, however, pass along Twitter handles of contacts in a state’s dam safety program or state emergency management agency. For dam owners, a Tweet should never replace a call to 911.

## Barriers to EAP Completion

Research in 2009 and 2010 that was summarized in the May 2011 Final Report identified barriers that hinder completion of EAPs on HHP dams. This research, especially in North Carolina, remains highly relevant. Recent comments about EAP barriers by DSOs and EMDs in the four additional states closely parallel the earlier research. Further research with local level dam owners and EMDs in the four states is unlikely to produce new insights. These are rankings EMDs in Missouri and North Carolina provided during their interviews, and messaging in this Action Plan will address these issues. Some barriers will be more significant in some states than others.

Those interviewed speculate that there are several reasons why more dam owners have not completed an EAP. The EMDs were asked to speculate why so few EAPs have been completed by HHP dam owners. Following are the typical responses:

- Dam owners are not aware they are required to complete an EAP.
- Dam owners are not motivated to file an EAP unless confronted with potential monetary penalties.
- Owners may believe their dam is safe and does not pose a risk.
- Owners of HHP dams do not know where to begin the EAP process, and feel overwhelmed by what is required to complete one.
- There are so many regulatory people involved that no agency has taken the lead.
- Dam owners may not have the information required to complete an EAP because they do not know the construction history of dams.
- Some private dam owners may believe it not the government’s business to tell them how to operate their dams.
- EMDs are not aware that this is a priority and that dam safety is on their “To Do” list.

The survey participants were read a list of barriers that might impede HHP dam owners from completing their EAPs. The table below illustrates the findings of this exercise, and suggests that many different barriers are responsible for the lack of compliance in filing an EAP. The barriers mentioned most often are listed. The wide range of barriers cited as being important by EMDs suggests that the problem of low compliance must be addressed on numerous fronts by the Action Plan.

## EMD Ratings of Barriers to Dam Owners Completing an EAP

#	#	#	#
Indicating	Indicating	Indicating	Indicating

	<b>Extremely Important</b>	<b>Somewhat Important</b>	<b>Not Important</b>	<b>Not Sure</b>
<b>The lack of regulatory enforcement to encourage completion of an EAP</b>	32	14	2	-
<b>The complexity (technical aspects or extensive detail) required to complete an EAP</b>	29	9	6	4
<b>Owners do not have the necessary information about their dams to complete an EAP</b>	28	13	7	-
<b>Dam owner indifference toward completing an EAP</b>	24	16	7	1
<b>A lack of county or state assistance to complete an EAP</b>	19	17	11	1
<b>The cost to prepare an EAP</b>	19	16	13	-
<b>A lack of concern by the general public about dam safety</b>	17	16	15	-
<b>The time required to complete an EAP</b>	13	22	11	2

### **Action Plan Elements Helpful to EMDs Working on HHP EAPs**

Pilot Studies research with EMDs indicated several actions that can help them understand and carry out their role in creating EAPs. These also are pertinent for outreach to EMDs in the four target states.

- Use a common language or one tailored to the definitions the state uses regarding HHP dams when educating EMDs. Conveying to EMDs the terminology and definitions state regulations require, and why, will be helpful. Some EMDs may not agree with the definition their state uses for a HHP dam, and consequently they may downplay the importance of working with dam owners on EAPs. Some EMDs do not realize that these definitions are set by state law or regulation and must be consistent.
- An ongoing communication program including multiple mailings, email, workshops, and one-on-one contact all should be supported in the Action Plan to reach EMDs and dam owners. The initiative will be increasingly successful as the number of communication exposures from DSOs increases beyond those already planned by DamSafetyAction.org in coordination with the DSOs.
- Building awareness that HHP dams are within the EMD's jurisdiction will be essential. EMDs should be educated on the location of all HHP dams that are within their jurisdictions, if possible, or told who and how to get that information. Many are not aware of the presence of privately owned HHP dams.
- Some EMDs need to be led through the steps expected of them in helping dam owners and DSOs create EAPs. They need to be provided the names, contact information, location of the dam and technical information on HHP dams.

The need to educate EMDs on the presence of HHP dams within their jurisdiction was clearly illustrated by the Pilot Studies research. The survey participants were asked, “*How many HHP dams are within your jurisdiction?*” The overwhelming majority of respondents were not able to provide an accurate answer. Most said they are only aware of HHP dams that energy companies or municipalities maintain. While there are exceptions, it is the norm that EMDs are not aware of privately held dams in their jurisdiction. There are several reasons for this lack of knowledge.

- Many EMDs interviewed do not know the categories their state uses to classify dams. They typically answered the interviewer’s question with another question, “*What is a High-Hazard dam?*” This type of response clearly illustrates the need to educate EMDs on the definition of HHP dams, and why it is essential to secure EAPs for these dams. The Action Plan elements for EMDs include clarification of this basic information.
- Dam safety issues are rarely a point of discussion between dam owners or concerned citizens and EMDs. Only about one-half of the EMDs had been contacted within the past year by dam owners regarding dam safety issues, and two-thirds of those were only contacted once. When the timeline was extended to represent the past 5 years (or less for those who have been EMDs for a shorter period), about two-thirds of the EMDs had contact with dam owners regarding dam safety issues, but most said it is a rare occurrence.
- Contact with the general public around dam safety in the past 5 years is also infrequent. About one-third of the EMDs had never had contact with concerned citizens about dam safety in the past 5 years (or less for those who have been EMDs for a shorter period), and most said their contact with concerned citizens is extremely rare, and typically occurs only when heavy rains threaten dam integrity.
- When asked how often they have seen media coverage of issues or events related to dam safety, two-thirds of EMDs said they never have seen media coverage and the others said it is rare. They also said that the only time they see any media coverage is when there is heavy rain that causes heightened concern about dam safety. The Action Plan media relations component will focus on increasing coverage and noting that coverage to EMDs when appropriate.

## Activity Tracking and Progress Toward Milestones

This schedule of milestones is updated and included in each Monthly Activities Report. This version will be part of the February 2014 report.

<i>Action or Milestone</i>	<i>Target Date</i>	<i>Actual Date</i>	<i>Status</i>	<i>Comments</i>
Contract and program kick-off meeting.	9/30/13	9/30/13	<b>Completed</b>	
Setup of internal accounting and document files for GA, KY, IN, CA.	10/7/13	10/7/13	<b>Completed</b>	
Review dams/EAP data in the 4 states and findings of May 2011 Pilot Studies Report.	10/10/13	10/10/13	<b>Completed</b>	
Initial discussions and correspondence with Dam Safety Program leaders in GA, KY, IN, CA.	10/15/13	10/21/13	<b>Completed</b>	Various discussions over several days
Identify barriers and stakeholders in each state.	10/15/13	10/21/13	<b>Completed</b>	
Identify Best Practices for promoting EAPs in each state.	10/21/13	10/21/13	<b>Completed</b>	
Identify audiences for the Outreach in each state.	10/21/13	10/21/13	<b>Completed</b>	
Discussions with dam safety program chiefs in MO, TX, and NC. Update HHP/EAP data on the DSA website. Test and repair or delete links. Add and edit "In the News" items for each state.	10/31/13	10/31/13	<b>Completed</b>	Testing of links and news updates is ongoing.
Monthly report format and completion of September-October report.	11/6/13	11/6/10	<b>Completed</b>	Held briefly; further info.
Align the program with other FEMA outreach initiatives. Analyze current state of EAP implementation and exercises in each target state.	11/15/13	11/15/13	<b>Completed</b>	EAP state status/data complete
Gathering of initial GA, KY, IN, CA graphics for various uses.	11/22/13	11/22/13	<b>Completed</b>	More to be gathered
November Monthly Activities Report	12/4/13	12/4/13	<b>Completed</b>	
Write and submit Action Plan Draft.	12/13/13	12/23/13	<b>Completed</b>	Submitted after holidays
December Monthly Activities Report	1/7/14	1/7/14	<b>Completed</b>	
Planning, dialog with Dam Safety Officials in the four states, stakeholders.	Ongoing			
January Monthly Activities Report	2/5/14	2/5/14	<b>Completed</b>	

Revise Action Plan and begin implementation.	2/14/14	2/18/14	<b>Completed</b>	
Add blog and Facebook Community social media aspects to DSA website.	2/21/14	2/19/14	<b>Completed</b>	Weekly blog posts and Facebook tracking.
February Monthly Activities Report	3/5/14			
Writing/design of state-specific EAP “Public Brochures” for GA, KY, IN, CA EMDs and stakeholders.	3/14/14			
Writing and design of DSA website pages for GA, KY, IN, CA	2/21/14			State DSOs will review before ‘live’
Writing/design of state-specific EAP Dam Owner Brochures for GA, KY, IN, CA	2/28/14			
Develop media lists for each state	3/25/14			
Develop VIP lists for the four states, write and mail letters regarding outreach program objectives, EAP importance.	3/28/14			Format, content up to state DSOs
Management and printing of initial run of brochures.	3/28/14			
Develop Gwinnett County, GA case study for website and promotions.	3/28/14			
Management/postage/handling direct mail #1 to four states and packets of brochures to state dam safety offices.	3/28/14			
News release #1 to the four state lists. Track publications/broadcasts.	3/28/14			
Stakeholder initial news feed and planning discussions.	4/2/14			Will be ongoing
March Monthly Activities report	4/4/14			
Write and design postcards, two each for dam owners and EMDs.	4/11/14			
Workshop planning and support in each state.	4/11/14 or sooner			Depends on each state’s scheduling
Writing/design of generic Inundation Mapping brochure.	4/18/14			
Management and printing of additional DSA letterhead (some is left over).	4/18/14			
Writing/design/production of Emergency Contacts magnets.	4/22/14			

Management and printing of postcards.	4/23/14			
Purchase, write, design, produce and ship EAP tabletop exhibits to the Dam Safety Programs of the four states.	4/24/14 or sooner as needed			
Write and produce presentations	4/24/14			As needed.
Management/postage/handling direct mail #2 to four states and packets of brochures to state dam safety offices.	4/28/14			
Research, write and place EAPs feature story #1 in each state.	4/29/14			
News release #2 to the four states' media lists. Track publications and broadcasts.	4/30/14			
Workshop planning and support in each state.	4/25/14 or sooner			Depends on each state's scheduling
Management/postage/handling direct mail #3 to four states and packets of brochures to state dam safety offices.	4/28/14			
April Monthly Activities Report	5/5/14			
Management/postage/handling direct mail #3 to four states.	5/16/14			
Research, write and place EAPs feature story #2 in each state.	5/23/14			
May Monthly Activities Report	6/4/14			
Management/postage/handling direct mail #4 to four states.	6/20/14			
June Monthly Activities Report	7/3/14			
Management/postage/handling direct mail #5 to four states.	7/18/14			

Other activities will be added for the remaining months as the Outreach Program is implemented.

## **Acronym Key**

ASDSO American Society of Dam Safety Officials  
ASCE American Society of Civil Engineers  
BoR Bureau of Reclamation  
CalEMA California Emergency Management Agency  
COE U.S. Army Corps of Engineers  
DEP Department of Environmental Protection  
DNR Department of Natural Resources  
DOW Division of Water  
DSA DamSafetyAction.org  
DSO Dam Safety Official  
DSOD Division of Safety of Dams  
DWR Department of Water Resources  
EAP Emergency Action Plan  
EMD Emergency Management Director  
EMC Emergency Management Coordinator  
EMS Emergency Medical Services  
ESC Emergency Services Coordinator  
EPA Environmental Protection Agency  
ESP Emergency Survival Program  
FEMA Federal Emergency Management Agency  
FERC Federal Energy Regulatory Commission  
FFA Future Farmers of America  
HHP High-Hazard Potential  
IEAP Incident and Emergency Management Plan  
IPAWS Integrated Public Alert and Warning System  
ISJ Indiana Silver Jacket Partnership Project  
NDSRB National Dam Safety Review Board  
NGO Non-Governmental Organization  
NID National Inventory of Dams  
NRCS Natural Resources Conservation Service  
RC&D Resource Conservation & Development Councils  
SHP Significant-Hazard Potential  
SIMS Simplified Inundation Maps