

USSD

U.S. National Committee of ICOLD



Association of State Dam Safety Officials

USSD-ASDSO Partnership

Working Group Report of Findings

August 15, 2024

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SUMMARY

Between 2021 and 2023, a working group was jointly established by the United States Society on Dams (USSD) and the Association of State Dam Safety Officials (ASDSO) to explore opportunities for a more deliberate partnership, to the benefit of the organizations’ members and the dam and levee community at large.

USSD and ASDSO are well-established professional organizations, with a long history of supporting the dam and levee community in the United States. In general, ASDSO’s primary focus is the safety of existing dams, while USSD focuses on advancing the state of practice in dam/levee engineering and promoting the benefits of dams and levees. Both organizations have broad strategies encompassing many facets of the dam and levee profession that can overlap.

According to the working group charter, the objectives were to evaluate the pros/cons and need for cooperation and to identify opportunities for streamlining and aligning the organizations to better serve the industry. The group performed retrospective research into the history and evolution of both organizations and the industry, including past collaboration, a review of organizational structures and ongoing initiatives, and goals presented in the current strategic plans. This information was evaluated considering the trends driving the dam and levee safety industry to identify gaps that might not be fully addressed by either organization. The intent was to gather information and present findings and opportunities for the Boards of Directors (Boards) of both organizations to consider.

Specific recommendations and decisions to pursue any opportunity presented in this report are beyond the scope of this working group. Decisions to pursue these opportunities will be made by each board and executive director as appropriate. The full report was presented to each board in early 2024. President Sharon Tapia (ASDSO) and President Dina Hunt (USSD) have reviewed the recommendations and have committed to considering the working group’s suggestions. The executive directors of both organizations participated in the process and have committed to considering the opportunities presented in this report as they and the respective boards develop plans and projects to advance the missions of both organizations.

The overarching finding of the working group is that each organization has a distinct culture and identity, and both bring unique strengths that complement each other. For example, ASDSO has a proven record of successful legislative advocacy and in-depth understanding of state dam safety perspectives, while USSD brings strong technical expertise and global connections through the International Commission on Large Dams (ICOLD). Each organization should embrace its organizational culture and build on its strengths, amplifying each other’s voices so that, together, the organizations continue to advance dam safety and engineering.

The working group identified over 50 unique opportunities for ASDSO-USSD collaboration, organized across 14 categories, as presented in the report. The working group specifically highlighted 1) opportunities that have the potential to make a significant impact on the industry; and 2) opportunities that may be incorporated into existing activities.

The following coordinated initiatives have the potential to make a significant long-lasting impact on the dam and levee safety industry in the U.S.:

1. Communicate with a unified voice to FEMA on topics related to the National Dam Safety Program (NDSP) and industry needs, starting with jointly requesting regular briefings from FEMA, including updates on activities of the National Dam Safety Review Board (NDSRB) and NDSP. Collaborate in assisting FEMA with the implementation of the Fiscal Year 2024-2029 Strategic Plan and the administration of the NDSP. This could include coordinating participation in research summits, identifying research needs and collaborating with research organizations, and reviewing and developing technical guidance documents.
2. Re-engage the U.S. Levee Safety Coalition to contribute to the development of a National Levee Safety Program (NLSP). The main components of the NLSP are: 1) National Levee Safety Guidelines; 2) Integrated Levee Management; 3) National Levee Database; and 4) Implementation Support. There is an opportunity to work together with the U.S. Army Corps of Engineers (USACE) and FEMA to help shape the Program as it is developed.
3. Both organizations should routinely review existing industry training programs and perform an industry training needs assessment to identify gaps and overlaps. Based on the results, both organizations should work to align training to address those gaps.

The following items were identified as opportunities for incorporation into existing and ongoing activities:

1. Encourage staff to meet regularly to discuss opportunities in relation to their plan of work and priorities.
2. Empower and encourage committees to collaborate across organizations. Identify specific collaboration opportunities.
3. Consider including the similar “industry update”-type presentations at both conferences.
4. Co-promote dam failures and incidents database on both websites.
5. Coordinate training schedules and plans via regular meetings between training committees and/or staff. Cross promote trainings.
6. USSD to seek input from ASDSO on Position Papers relevant to both organizations and the industry. Both organizations could promote the publication of Position Papers.

A general Memorandum of Understanding between USSD and ASDSO articulating each organization’s culture and identity, and outlining principles of engagement, could serve as a framework for future initiative- or project-specific partnership agreements.

This report of findings concludes the work of the USSD-ASDSO Partnership Working Group according to the Charter.

PURPOSE AND OBJECTIVES

The United States Society of Dams (USSD) and the Association of State Dam Safety Officials (ASDSO) are well-established professional organizations, both with long histories of supporting the dam and levee community in the United States.

With a degree of similarity in missions, initiatives undertaken by both organizations have expanded over the past 30 years and, in some cases, have been identified as overlapping. This could be perceived as confusing to the industry and members; however, it is a great opportunity for cooperation and for clarifying missions. While the two organizations have historically coordinated and kept each other informed of activities, a more deliberate and active partnership could benefit the membership of USSD and ASDSO and the dam and levee community.

The objective of this working group is to evaluate the pros/cons and need for cooperation, discuss similarities and differences of missions between the organizations, and identify potential opportunities to partner on projects/initiatives. The initial tasks of this working group were detailed in the charter (Appendix A) as follows:

- Gather facts and perform retrospective research into the history and evolution of both organizations and the industry/community, including past relationships and collaboration between USSD and ASDSO.
- Identify opportunities for streamlining and aligning the organizations to better serve the industry.
- Present the findings to the leadership of both organizations.

In September 2022, the following steps were added to clarify the tasks:

- Document historical missions, goals, and objectives of each organization.
- Document historical committee or program goals and objectives for each organization. Analyze overlap in committee or program missions.
- Document shared initiatives/projects of the past or attempts to collaborate on projects.
- Document partner organizations, i.e., International Committee on Large Dams (ICOLD), American Society of Civil Engineers (ASCE), etc.
- Identify gaps that are not currently being addressed by either organization.
- Evaluate the identified gaps to ensure those needs are not already being satisfied by other dam safety organizations or agencies, i.e., FEMA, USACE, ICOLD, U.S. Bureau of Reclamation.

Governance

USSD and ASDSO are both classified as 501(c)(3) nonprofit organizations by the IRS. According to Board Fundamentals: Understanding Roles in Nonprofit Governance (Lakey, Berit M., 2010, page 3):

“Nonprofit sector organizations exist to serve a social purpose, a constituency, or a cause. They have no individual owners who can claim organizational assets for their own benefit. In general, they seek to meet needs that neither of the other sectors [public and private] address. To do so successfully, they must earn or raise sufficient funds to cover expenses and safeguard the organization’s future ability to continue to serve the mission. In the United States, most nonprofits are incorporated in the state where they function and must follow the specific corporate statutes in their state.¹ Tax-exempt nonprofits are defined by the Internal Revenue Code (IRC) and are classified as IRC 501(c) organizations. They are exempt from paying federal income taxes. In most places they are also exempt from state and local taxes...²”

Both USSD and ASDSO operate using best practices for association management put out by the American Society of Association Executives.

USSD

The U.S. Committee on Large Dams (USCOLD) was formed in 1928 and incorporated in the State of Colorado on April 29, 1988. In 2001, the organization changed its name to the United States Society on Dams (USSD). USSD’s bylaws stipulate that the board of directors shall consist of 12 to 16 elected directors and officers. The officers are the president, vice president, secretary, and treasurer.

ASDSO

ASDSO was formed in 1983 and subsequently incorporated in the Commonwealth of Kentucky on December 2, 1991. The Articles of Incorporation were amended in 2019. Generally, ASDSO’s bylaws state that the voting members include one representative from every state dam safety program. The board of directors comprises voting members from four regions (Northeast, Southeast, Midwest, and West), with two non-voting members from the other membership categories (typically chosen from the private sector Advisory Committee). All committees, task groups, and interest groups are open to any member.

1 The terms “tax-exempt” and “nonprofit” are often used interchangeably and refer to the same organizations. However, “tax-exempt” is an IRS term and “nonprofit” is used at the state level in connection with incorporation. Incorporation as a nonprofit organization is generally helpful in order to gain tax exemption. Unincorporated associations and trusts are also forms of nonprofit organizations.

2 Panel on the Nonprofit Sector: Strengthening Transparency, Governance, Accountability of Charitable Organizations: A final report to Congress and the Nonprofit Sector, p.1. (Washington, DC: Independent Sector, 2005).

Mission & Vision

The current mission and vision statements of the organizations are:

USSD

Mission: Empower professionals to advance sustainable benefits of dams and levees for society.

Vision: A world where all dams and levees are safe and valued by the communities they serve.

ASDSO

Mission: Improve the condition and safety of dams and lower the risk of dam failures through education, support for state dam safety programs, and fostering a unified dam safety community.

Vision: A future where all dams are safe.

Formation

USSD

The history of USSD and its predecessor organizations is not well documented, particularly before the 1960s. The organization now known as USSD has its roots in the formation of the International Commission on Large Dams (ICOLD) in the late 1920s. In 1928, representatives from the United States attended an ICOLD constitutive meeting in Paris, and in 1932 the United States Committee on Large Dams (USCOLD) officially became the United States member of ICOLD. The organization operated as USCOLD until 2001, when the name was changed to the United States Society on Dams (USSD). Throughout the history of USCOLD/USSD, participation in ICOLD has been a major focus of its activities. USSD hosted ICOLD meetings and congresses in 1936, 1952, 1958, 1988, and 2013. In addition, several USSD/USCOLD members have served as president or vice president of ICOLD.

Throughout its history, USCOLD/USSD activities have focused strongly on the technology of dam analysis, design, construction, and operation. In the 1960s, USCOLD became concerned about the status of dam safety in the United States. This concern culminated in the development by USCOLD of a “Model Law for State Supervision of Safety of Dams and Reservoirs,” which was approved by the USCOLD Executive Committee. The Model Law was subsequently published by USCOLD and distributed to the 50 states. In 1982, the USCOLD Executive Committee passed a resolution urging state governments to give high priority to enacting dam safety legislation and to allocating resources for state dam supervision. USCOLD joined other groups in supporting the Council of State Governments (CSG) and the Federal Emergency Management Agency (FEMA) in their efforts to address the need for more focus on state dam safety activities.

The USCOLD/USSD and ICOLD history is discussed in a 2019 USSD conference paper (Ferguson, 2019).

ASDSO

In the 1970s, in reaction to several catastrophic dam failures across the country, several actions and events took place leading to the establishment of ASDSO. Federal agencies improved their dam safety programs and federal legislation was passed. Notable among the federal responses were the passage of the National Dam Inspection Program (PL92-367) in 1972 and the creation of the Interagency Committee on Dam Safety (ICODS). Following the development of the Model Law for State Supervision of Safety of Dams and Reservoirs in 1982, several states used this model to adopt legislation implementing or improving existing state dam safety regulation.

An assessment of state dam safety programs was conducted by Dr. Bruce A. Tschantz and published under FEMA sponsorship in 1983 as a *Report on Review of State Non-Federal Dam Safety Programs*³. That report, based on a detailed questionnaire distributed to the 50 states, made it clear that over half the states either had no dam safety law or no dam safety program. Another very important conclusion of the report, based on the questionnaires, was that almost without exception the states felt a need to have an interstate forum for sharing information related to state dam safety programs. Another report by the National Academy of Sciences, Committee on Safety of Non-Federal Dams, Assembly of Engineering entitled, *Safety of Non-Federal Dams — A Review of the Federal Role*⁴, recommended the need for a national organization focused on improving state dam safety programs.

As a result of this collective work, in 1982, work began to form ASDSO with support from the Council of State Governments, FEMA, and several state dam safety programs. ASDSO was formed on June 20, 1984. The first conference, held in 1984 in Denver, attracted nearly 300 attendees and saw the ASDSO constitution and by-laws adopted by 34 states. Since that time ASDSO has grown to an association with over 3000 members from state, federal, and private industry backgrounds. All fifty states and Puerto Rico participate as voting members.

A detailed review of ASDSO's history is presented in *Origins of the Association of State Dam Safety Officials* (Gardner, 1995). (Appendix B)

³ Tschantz, B.A., 1983. "Report on Review of State Non-Federal Dam Safety Programs," FEMA Office of Federal Dam Safety.

⁴ Committee on Safety of Non-Federal Dams, Assembly of Engineering, 1982. "Safety of Nonfederal Dams: A Review of the Federal Role," National Academy of Sciences/National Research Council.

Strategic Evolution

In general, ASDSO's primary focus is on the safety of existing dams, while USSD focuses on advancing the state of practice in dam engineering and promoting the benefits of dams and levees.

However, the organizations have broad strategies encompassing many facets of the dam and levee profession and have evolved over time to meet the needs of the industry. To help illustrate how the organizations have grown and evolved, the following sections list the strategic missions, visions, goals, and objectives of each organization over the years.



Photo Courtesy of HDR

USSD

USSD is a member of ICOLD and operates consistent with ICOLD's organization and mission. The ICOLD mission is to lead the profession in setting standards and guidelines to ensure that dams are built and operated safely, efficiently, economically, and are environmentally sustainable and socially equitable. ICOLD assists nations in preparing to meet the challenges of the 21st century in the development and management of the world's water and hydropower resources ([International Commission on Large Dams \(icold-cigb.org\)](http://International Commission on Large Dams (icold-cigb.org))). In the past decade, USSD officially expanded its mission to include levees, recognizing the interconnectedness of the two infrastructures along with the similarities in the technical expertise necessary to evaluate and design dams and levees.

It was also recognized that in many cases, dams and levees act together as a system. In addition to including levees in their mission, USSD was instrumental in raising the visibility of levees under the purview of ICOLD, championing the establishment of an ICOLD technical committee on levees.

The working group, including USSD current and former board members and the current executive director, were not able to identify a strategic plan for the organization prior to 2010. Most recent strategic plans are summarized as follows.

2010-2013

Mission: Not stated.

Vision: To be the nation's leading organization of professionals dedicated to advancing the role of dams for the benefit of society.

GOALS & OBJECTIVES:

- Maintain and strengthen USSD's technical and other committees on key issues for dams.
- Broaden USSD's emphasis to address current and future issues in sustainable water resources management associated with dams.
- Establish cooperative arrangements and partnerships with key government agencies and professional organizations to increase USSD's effectiveness in the industry.
- Continue to upgrade our annual conferences and fall workshops to attract more participation from the U.S. and internationally.
- Modernize and expand our transfer of technical and related information about dams.
- Strengthen USSD ties to ICOLD and other national committees of ICOLD.

2014-2018

Mission: USSD, as the United States member of the International Commission on Large Dams, is dedicated to: Advocate, Educate, Collaborate, and Cultivate.

Vision: A world-class organization dedicated to advancing the role of dam and levee systems and building the community of practice.

GOALS & OBJECTIVES:

- Advocate: Champion the role of dam and levee systems in society.
- Educate: Be the premier source for technical information about dam and levee systems.
- Collaborate: Build networks and relationships to strengthen the community of practice.
- Cultivate: Nurture the growth of the community of practice.

USSD Cont.

2021-2025

Mission: Empower professionals to advance sustainable benefits of dams and levees for society.

Vision: A world where all dams and levees are safe and valued by the communities they serve.

GOALS & OBJECTIVES

- Advocacy & Awareness
 - Build awareness of the challenges, value and benefits of dams and levees to the public.
 - Provide accurate and timely information about dams and levees to stakeholders and policy makers.
 - As a profession, let people know who we are, what we do, and why.
 - Generate, join, and support coalitions that are aligned with USSD's mission and values..
- Community and Connections
 - Strengthen and promote connection to ICOLD.
 - Identify and provide leadership opportunities to advance the USSD mission and ensure it remains viable.
 - Create opportunities and mechanisms for higher educational institutions and researchers to share advances in the field.
 - Create networking and mentoring opportunities for professionals to share, grow and access information for collaboration and encourage the free flow of information.
- Education & Professional Development
 - Identify advancements in dams and levees and needs for training.
 - Develop and deliver industry-relevant education and training.
 - Create a structured curriculum for dam and levee professionals.
 - Evaluate and, if warranted, create accrediting/certifying opportunities for professionals and/or programs.
- Recruitment & Growth
 - Foster career paths that will grow the talent pool for our industry.
 - Attract students and young professionals into the industry and USSD activities.
 - Strengthen diversity, equity, and inclusion within the community of practice.
 - Grow USSD through outreach beyond our membership.



ASDSO

ASDSO was formed to foster collaboration and coordination, and promote consistency across state dam safety programs, many of which were in early stages of implementation. In fact, several states did not have programs when ASDSO was first established. With the support of ASDSO, as of 2023, all 50 states now have dam safety programs.

1984

Original goals (no vision or mission).

ASDSO was formed to serve these initial functions:

1. Provide a forum for the exchange of ideas and experiences on dam safety issues.
2. Foster interstate and intergovernmental coordination.
3. Provide information and assistance to state dam safety programs and to the ASDSO membership.
4. Provide representation of state interests before Congress and federal agencies responsible for dam safety.
5. Improve the efficiency and effectiveness of state dam safety programs.

1992-1993

The first Long-Range Plan was established under the development of the board and the Affiliate Member Advisory Committee (AMAC), later renamed the Advisory Committee. The AMAC developed issue papers as part of this exercise.

GOALS:

1. Foster public awareness of dam safety.
2. Provide assistance on dam safety issues to the dam safety community and a forum for the exchange of information.
3. Provide representation of dam safety interests before state legislatures and before Congress.
4. Improve the efficiency and effectiveness of state dam safety programs through interstate, interorganizational, and intergovernmental cooperation
5. Manage the association effectively through internal policies and procedures, adequate funding, and money management and leadership.

ASDSO Cont.

1997-1998

First Action Plan was created.

GOALS:

1. Improve the efficiency and effectiveness of state dam safety programs.
2. Foster public awareness of dam safety.
3. Provide leadership through facilitation of interorganizational, intergovernmental, and interstate cooperation.
4. Provide assistance on dam safety issues to the dam safety community and provide a forum for the exchange of information.
5. Provide representation of dam safety interests before state legislatures and before Congress.
6. Manage the association effectively through internal policies and procedures, adequate funding, and money management and leadership.

2001-2006

The first vision and mission statements were created:

Vision: To lead the U.S. dam safety community with a strong unified voice and effective programs and policies toward the furtherance of dam safety.

Mission: The failure of dams can cause great destruction and loss of life. It is ASDSO's mission to advance and improve the safety of dams by supporting the dam safety community through the following goals.

GOALS:

1. Improving the efficiency and effectiveness of state dam safety programs.
2. Bringing dam safety to a higher level of awareness among the general public, state and federal legislatures, specific organizations, and other stakeholders.
3. Providing leadership through facilitation of interorganizational, intergovernmental, and interstate cooperation.
4. Strengthening the dam safety community and providing a forum for the exchange of information.
5. Providing representation of dam safety interests before state legislatures and before Congress.
6. Providing quality outreach programs for dam owners/operators, members, and non-members about the need to maintain safe dams.
7. Managing the association effectively through internal policies and procedures.

ASDSO Cont.

2007-2011

Vision: A future where all dams are safe.

Mission: The failure of dams can cause great destruction and loss of life. It is ASDSO's mission to advance and improve the safety of dams by supporting the dam safety community and state dam safety programs, raising awareness of dam safety issues, facilitating cooperation, providing a forum for the exchange of information, representing dam safety interests before governments, providing outreach programs, and creating a unified community of dam safety advocates.

GOALS:

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

2012-2016

Vision: A future where all dams are safe.

Mission: Improve the condition and safety of dams through education, support for state dam safety programs, and fostering a unified dam safety community.

GOALS:

1. Improve state dam safety programs.
2. Increase awareness of dam safety and its benefits to all stakeholders.
3. Increase the technical expertise of dam safety professionals and owners/operators.
4. Develop and implement financial instruments to improve dam safety programs.
5. Promote and facilitate a consistent approach to dam safety regulation and technical criteria in all states and federal agencies.
6. Support levee safety activities consistent with dam safety principles and interests.

ASDSO Cont.

2017-2021

Vision: A future where all dams are safe.

Mission: Improve the condition and safety of dams and reduce the consequences associated with dam incidents, through education, support for state dam safety programs, and fostering a unified dam safety community

GOALS:

1. Improve state dam safety programs.
2. Develop a cohesive and engaged community committed to the ASDSO mission.
3. Advance and expand the technical expertise of dam and levee safety practitioners.
4. Promote innovative approaches to funding dam rehabilitation at the state and federal level.
5. Increase public awareness of the role of dams in society, the risks they present and the importance of both dam safety and preparedness for dam failures.
6. Advocate for laws, policies and government programs that serve to improve the safety of dams and reduce the risk to the public.
7. Support and strengthen a coordinated effort to improve the safety of levees.

2022-2027

Vision: A future where all dams are safe.

Mission: Improve the condition and safety of dams and lower the risk of dam failures through education, support for state dam safety programs, and fostering a unified dam safety community.

GOALS:

8. Improve state dam safety programs.
9. Develop a cohesive and engaged community committed to the ASDSO mission.
10. Advance and expand the technical expertise of dam and levee safety practitioners.
11. Promote innovative approaches to funding dam rehabilitation at the state and federal level.
12. Increase public awareness of the role of dams in society, the risks they present and the importance of both dam safety and preparedness for dam failures.
13. Advocate for laws, policies and government programs that serve to improve the safety of dams and reduce the risk to the public.
14. Support and strengthen a coordinated effort to improve the safety of levees.

MEMBERSHIP CHARACTERISTICS

Both organizations have generally the same membership categories, including professional/individual, student, senior, organizational, academic, and sustaining.

ASDSO has a specific voting member category for one representative per State Dam Safety Office. Currently, USSD and ASDSO average about 1,500 and 3,000 members, respectively. There is a significant membership overlap between the two organizations in both the individual and organizational categories. Both organizations have fewer members from academia than desired, despite efforts to attract academics. Dam owners and construction contractors are also not considered to be as well represented as each organization would like.

USSD

Characteristics of USSD membership include:

- Consistent federal agency leadership and representation throughout history.
- Strong presence from the engineering and design industry in mid-sized to large firms and product/technology suppliers.
- Representation from construction firms and owners of large dams and/or large portfolios of dams.
- After a period of slow growth, membership has been increasing in recent years.
- Emerging presence of women and young professionals.
- While levees are included in the mission, few levee owners or levee regulators are represented.
- Primarily engineering focused, with less science participation (e.g., limited representation by organizations such as National Oceanic and Atmospheric Administration, Environmental Protection Agency, or U.S. Geological Survey).
- Limited participation from state dam safety regulators.

ASDSO

Characteristics of ASDSO membership include:

- Consistent state agency leadership and representation throughout history.
- Strong participation from most federal agencies.
- A large portion of the membership comes from the engineering/design industry and product/technology suppliers.
- A smaller portion of the membership comes from the dam-owning community and academia.
- After a period of slow growth, membership has been increasing in recent years.
- Emerging presence of women and young professionals.

CULTURE

While both organizations service the dam industry, each organization has different areas of focus, approaches to accomplishing goals, and staffing structure.

USSD

USSD's culture is shaped by its:

- Focus on state of the practice in engineering and design, training and education, and industry role in same; less focus on governance and regulation of dam safety.
- Role and connection to ICOLD.
- Primary historical focus on the U.S. market, despite connection to ICOLD.
- Limited comfort with concepts or implementation of advocacy beyond technical issues.
- Narrow scope focused on built infrastructure versus broader issues of water resources development.
- Traditional approach to smaller staffing that is supported by significant volunteerism to accomplish mission.

ASDSO

ASDSO's culture is shaped by its:

- Primary focus of assisting state dam safety agencies with improving their programs.
- Focus on U.S. issues except in rare cases.
- Close working relationship with FEMA, the National Dam Safety Program and the Department of Homeland Security, Cybersecurity and Infrastructure Security Agency (CISA) Dams Sector.
- Focus on policy issues and federal and state advocacy for stronger laws and policies regarding dam safety.
- Small staff (less than 10) with several contracted projects (training, government affairs, technical support, peer review). Volunteer board, committees, task groups, etc.

COMMITTEES

A complete list of each organization's committees is provided in Appendix C.

USSD

At the time of this publication, USSD had 21 committees, with 14 of these focused primarily on technical topics or disciplines related to dams and levees (e.g., dam safety, embankment dams, hydraulics and hydrology). Other committees can be categorized as organizational (three), publications and training (three), and outreach (one). Many of the USSD committees are aligned with one or more ICOLD technical committees.

To achieve specific assignments, USSD also has ad hoc committees and task groups.

ASDSO

The ASDSO committee structure is generally not driven by technical topics. Most committees follow the strategic plan goals. There are currently 16 standing committees, 3 interest groups, and 1 task group. Standing committees include three board committees (administrative) and several that focus on projects (e.g., Awards, Journal, Conference Program Planning, Media Relations). Others are considered technically focused (Dam Design and Construction, Dam Failures and Incidents). Task forces have focused on specific projects including updating the Model State Dam Safety Program, updating the Report on the National Costs of Rehabilitating Dams, and completing the Guidelines on State Regulation of Tailings Dams. Interest groups focus on special interests of members (Book Club, Young Professionals Development).

SCHOLARSHIP PROGRAM AND ENGAGING ACADEMIA

USSD

The USSD scholarship was established in the early 1990s. The award is given annually to students whose academic program and plans have the potential to develop practical solutions to design and construction challenges related to dams, levees and other water resources. USSD awards 3 to 4 student scholarships annually, with award amounts in the range of \$5,000 to \$10,000. These scholarships are traditionally targeted toward upper class undergraduate students and graduate level students.

An annual fundraising campaign and net proceeds from the FUNds Run 5K held during USSD Annual Conferences help fund the Student Scholarships program. In 2023, the program was renamed the “Kim de Rubertis Student Scholarship Awards.”

The USSD Awards & Young Professionals Committees have initiated direct contact with colleges and universities to make them aware of and invite them to the USSD Annual Conference. The main goal is to bring in more high-level technical papers and presentations and engage more representatives from academia. USSD only has a handful of members in this category.

ASDSO

ASDSO has provided an undergraduate scholarship to a rising senior from a civil engineering school since the mid-1990s. The annual scholarship is geared to a student with a high GPA who is involved in college activities as well as working as a student intern in the dam safety field. The amount has increased from \$2,500 to \$20,000 over time.

ASDSO focuses on engaging academia primarily to develop outreach to students who may be interested in pursuing a career associated with dam engineering. It has been difficult to secure long-term interest from professors, although some are engaged in the organization. The most active schools tend to be those with specific dam engineering training programs or research facilities. ASDSO only has a handful of members who identify as representing academia.



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TRAINING & EDUCATION

USSD

Prior to the formation of the Education & Training Committee in 2020, USSD's training efforts were relatively ad hoc. Prior to the onset of the Fall Workshop Series in 2014, most workshops were held in conjunction with conferences, with a few "one-off" workshops. Workshops were typically proposed and organized by one or more technical committees.

The USSD Board established the Education & Training Committee in 2020 to address the need for improved training opportunities for USSD members. The Committee collaborates with and/or assists other committees in developing and promoting education and training activities under the strategic domain of Education & Professional Development. Through their efforts, USSD has built and maintains an online Learning Center, develops new training, and seeks out new opportunities to enhance the education for the dam industry.

USSD's regularly occurring workshops include:

- Fundamentals of Facilitating a Semi-Quantitative Risk Analysis (hybrid, live online, and in person)
- Leveraging PFMA to Perform SQRA (live virtual or in person)
- Best Practices in Dam and Levee Safety Risk Analysis (hybrid, live online, and in person)

In 2020, USSD initiated a more structured webinar program. Webinars are generally presented bimonthly to quarterly and are archived for on-demand viewing. USSD currently has a catalog of about 20 on-demand webinars.

The full USSD training catalog can be viewed at <https://training.usdams.org/catalog>



Photo Courtesy of HDR

ASDSO

The ASDSO classroom (short courses) program began in the 1990s and was originally constructed in partnership with the National Dam Safety Program. At that time, there was a handshake agreement with USCOLD saying that ASDSO would focus its classroom course development and delivery on basic topics and USCOLD would focus on advanced topics.

After FEMA held a training summit in 1999 and produced a large list of potential training topics, ASDSO began using this list as a starting point to further develop its training program. ASDSO continually added classroom courses throughout the 2000s. A webinar program was introduced in 2008. The formalized training committee was started around this same time, and ASDSO introduced its Program of Study guideline. The ASDSO Dam Safety Program of Study was created as a roadmap for educating those working in the dam safety engineering community (ASDSO 2019). The program of study is the result of engagement and meetings experts across the industry discussing education and training needs for dam safety engineers, dam safety regulators, and others to practice dam engineering effectively. The current Program of Study includes 17 topic areas and can be found on the ASDSO website.

The current main rotation of ASDSO classroom (in-person and virtual) course topics are:

- Concrete Dams Design and Analysis Seminar Synopsis
- Dam Construction Inspection
- Dam Design and Technical Specifications Review

- Earthquake Engineering
- Erodibility & Spillway Analysis
- Fundamentals of Reinforced Concrete
- HEC-HMS
- HEC-RAS 2D
- HEC-RAS
- Improving Emergency Operations for Dam and Levee Failures and Incidents
- Inspection and Assessment of Dams
- Seepage Through Earth Dams
- Stability Analysis of Embankment Dams

ASDSO has a well-established and structured webinar program that currently includes over 140 on-demand webinars from the past 12+ years. Webinar topics are different every month and delivered live on the second Tuesday of every month and recorded for later purchase/access.

The full catalog of ASDSO's online catalog can be viewed at: <https://damsafety.org/training-overview>

In addition to technical training, ASDSO focuses on dam owner education, including three separate one-day dam owner workshops. These are presented at the request of and in collaboration with state dam safety programs. Several short videos have also been created and are posted at the ASDSO YouTube channel. These go hand-in-hand with a set of fact sheets that are available for dam owners. All educational materials are available free-of-charge to users at Resources for Dam Owners and Operators | Association of State Dam Safety The Dam Owner Education Committee oversees these projects.

CONFERENCES

USSD ANNUAL CONFERENCE & EXHIBITION

USSD holds its “Annual Conference and Exhibition,” typically in spring. Early national conferences were two-day, single-track events followed by field trips. In the 1990s, the conference format was changed to essentially the current format of two-day events including plenary sessions and concurrent sessions, followed by field trips. Later, USSD included workshops in addition to the field trips at the end of the conference. Historically, USSD annual conferences averaged 300 to 500 attendees. The attendance has increased in recent years, with the most recent (2023) conference attracting close to 1,000 participants.

In addition to the annual conference, USSD, as a member, participates in annual ICOLD meetings (symposia and congresses) and occasionally hosts events targeted and developed through its international connections through ICOLD. These have included:

- ICOLD 2nd Congress — Washington, D.C., 1936
- ICOLD 6th Congress — New York, NY
- ICOLD 16th Congress — San Francisco, 1988
- ICOLD 81st Annual Meeting — Seattle, 2013
- IV International Symposium on Dam Safety (USSD, SPANCOLD, CBDB, CHINCOLD)
- International Symposium on Safety of Dams (INCA member countries) — Puerto Rico 2024

ASDSO ANNUAL CONFERENCE — DAM SAFETY CONFERENCE

ASDSO has held its annual “Dam Safety” conference since 1984. These have generally been two- or three-day conferences with concurrent technical tracks. Regional conferences were started in the 1990s and generally are held on a three-year rotation between the Northeast, Southeast, and West regions. Over the past 10+ years, Dam Safety conferences have averaged 800 to 1,000 attendees, with some events exceeding 1,200 participants.



GOVERNMENT & ADVOCACY

USSD

Prior to 2017, USSD included the Committee on Public Awareness. With the adoption of the 2014-2017 Strategic Plan, USSD realized the need for more focus on advocacy. An initiative to assess consolidation of the Advocacy, Communication (Newsletter), and Public Awareness Committees began in early 2017, and in February 2018, the board approved the final charter for the Advocacy, Communication, and Public Awareness (ACPA) Committee. This charter outlined two subcommittees: Communication Subcommittee, and Advocacy and Public Awareness Subcommittee.

The Communication Subcommittee would later transition into the Bulletin Editorial committee. Its primary responsibility is the development and editing of the quarterly publication Dams and Levees: Bulletin of the U.S. Society on Dams.

The Advocacy and Public Awareness Subcommittee was chartered to promote the role of dams and levees in the management of water resources as well as USSD position on dam and levee issues. This information may be distributed internally to USSD members for their use and/or externally to the public, media, government agencies, and other organizations. This subcommittee is currently inactive, but the USSD Board is looking to reestablish more formal advocacy efforts.

ASDSO

Since its establishment in the early 1980s, ASDSO has been working on federal and state policy issues that affect national, federal, and state dam safety programs. A large portion of the ASDSO executive director's time is spent working on these initiatives. ASDSO budgets funding for a lobbyist in Washington, D.C. A handful of ASDSO volunteers participate through the Legislative Advocacy Interest Group and provide subject matter expertise to written and verbal testimony as needed and to congressional office visits.



PUBLIC AWARENESS/MEDIA OUTREACH

USSD

The USSD Committee on Public Awareness has made the following notable contributions:

- Prepared the “Overview of Dams in the United States” for the Dams of the United States, A Pictorial Display of Landmark Dams book, which was given to all attendees.
- Developed multimedia presentations and brochures to be used by the USSD membership and by teachers, agencies, associations, and other water resources professionals. These materials highlighted the benefits of dams to society.
- Initiated the informative continuing article in the USSD Newsletter titled “Did You Know?” to provide members with short stories on the benefits of dams.
- Helped develop a Water and Dams in Today’s World video.
- Developed educational pages for incorporation with the USSD website in cooperation with the USACE.
- Participated in the ICOLD Committee on Public Awareness and Education, including providing the pros and cons of dams and the effects of reservoirs on people and the natural environment.
- Participated in the ICOLD World Register of Dams, providing information on the dams in the U.S.

Since 2018, USSD has developed several position statements, which typically advocate for good practices related to dams and levees. These are typically 1- to 3-page documents that are not intended to be technically focused but more appropriate for the public and media.

USSD initiated development of a speakers bureau to focus on public awareness on dam safety and the benefits of dams; however, there has been little done to advance this effort.

ASDSO

ASDSO has created awareness booklets and website pages that focus on public awareness of the risks associated with dams. These are meant for the general public, including homeowners, local government planners, real estate agents, and those recreating around dams. Significant work has gone into creating web pages focusing on low head dams and public safety. In 2017, ASDSO created a Media Relations Committee and began a formal program to assist in preparations for requests for interviews or comments on current events involving dam safety issues. There are now more proactive efforts to track media interest and write op-eds as needed. Focused projects that enhance public awareness and provide support for improved federal and state policies have been completed including a national report on the costs of rehabilitating non-federal dams in the U.S. ASDSO tracks a large amount of data on state dam safety program performance and statistics for awareness purposes and to provide to the media when asked.

ASDSO supports a speakers bureau focusing on public awareness and safety around dams.

PUBLICATIONS & RESOURCES

USSD

A major focus of USSD is producing technical publications. Proceedings of the annual conference are published and provided to participants. The proceedings from 2018 to the most recent conference are available to members through the USSD website.

Technical committees are responsible for publishing white papers, which are written by committee members and undergo a relatively rigorous review by a peer review committee that is assigned by the board; the peer review committee chair is a member of the board. These white papers vary in scope, level of detail, and length. Examples of recently published white papers include:

- Introduction to Internal Erosion in Dams and Their Foundations (Embankment Dams Committee, December 2021, 78 pages)
- USA Regulations and State of Practice for the Closure of Tailings Dams (Committee on Tailings Dams, April 2022, 37 pages)
- Improving Reliability of Commonly Used Hydraulic Valves (Committee on Hydraulics of Dams, April 2017, 96 pages)
- Guidelines for Dam Decommissioning Projects (Committee on Dam Decommissioning, July 2015, 207 pages)

The process from concept through publication can be long, often several years. This is primarily because the authors and reviewers are volunteers and, as indicated from the examples, many of these white papers are quite extensive.

USSD publishes the quarterly Dams and Levees: Bulletin of the U.S. Society on Dams, which includes technical articles along with various news items related to the organization and the industry. Technical articles do not go through a technical peer review.

ASDSO

The majority of ASDSO publications are technical papers included in the proceedings of the annual conference. Historically, these have been available to the conference attendees; however, most conference papers can now be obtained through the Dam Safety Resource Database on damsafety.org.

Committees do publish white papers; however, these are relatively uncommon and not widely publicized.

ASDSO publishes the quarterly Journal of Dam Safety, which typically includes three technical articles along with organization and industry news. Technical articles are reviewed by two or three reviewers focused on technical content. This is not considered as rigorous of a review as those performed for technical journals such as those published by ASCE.

ASDSO also curates the damfailures.org website, which includes ASDSO-developed technical content (primarily by the Dam Failures and Incidents Committee) that is focused on case histories and lessons learned from dam failures and incidents. ASDSO maintains the Dam Safety Resources Database, which includes a relatively comprehensive listing of technical publications related to dams and dam safety from various organizations, including ASCE, ASDSO, USSD, and several others. ASDSO members are provided access to the full papers through the website. In 2023, ASDSO launched the Dam Safety Toolbox website.

OTHER ACTIVITIES

The NDSRB, administered by FEMA, includes five federal agencies that serve as members on the Interagency Committee on Dam Safety (ICODS), five state representatives, and one private sector member. Historically, FEMA asked ASDSO to assist in selecting the state representatives and USSD to select the private sector representative; however, the selection is ultimately up to FEMA and these individuals do not officially represent either ASDSO or USSD. The purpose of the NDSRB is to advise FEMA on dam safety issues and policies through the National Dam Safety Act. Anticipated objectives and projects include:

- Developing National Dam Safety guidelines and manuals.
- Providing dam safety training, public awareness programs, and research.
- Distributing grant funding to state dam safety agencies.
- Distributing dam rehabilitation grant funds to dam owners (via the states).

The Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA) office administers the Dams Sector Coordinating Councils. There are seats for eight state representatives on the Government Coordinating Council and specific seats for both ASDSO and USSD on the Sector Coordinating Council (private sector). Both groups form a joint coordinating council and advise the CISA Dams Sector Specific Agency on their strategic direction.



Photo Courtesy of HDR

PARTNER ORGANIZATIONS AND COALITIONS

USSD and ASDSO have formal and informal agreements with other professional organizations in the U.S. and internationally. Both organizations are members of the following partnerships and coalitions:

- **US Levee Safety Coalition.** A group of professional organizations (American Council of Engineering Companies [ACEC], ASCE, ASDSO, Deep Foundations Institute [DFI], National Association of Flood and Stormwater Management Agencies [NAFSMA], and USSD) that joined together in 2015 to support and advance levee safety in the U.S. This coalition is committed to the common cause of preserving and protecting public safety, life, and property through the responsible engineering design, construction, operation, maintenance, management, and removal of parts or portions of the existing and future vast levee infrastructure system in the U.S. The mission of the US Levee Safety Coalition is the advancement of levee safety across the country through good engineering practices; sound public policy; and increased awareness and education within communities of practice and the public. The chairperson of the coalition rotates among member organizations. Both USSD and ASDSO have chaired the coalition in the past.
- **Uncommon Dialogue Coalition.** Uncommon Dialogue on Hydropower, River Restoration, and Public Safety | Stanford Woods Institute for the Environment. The broad goal of this coalition, established in 2018 under the Stanford Woods Institute Uncommon Dialogue, is to better address climate change and protect rivers through a smarter approach to U.S. hydropower. Its specific objective, outlined in a 2020 joint statement between the U.S. hydropower industry and river conservation/environmental NGOs, is to improve the value of hydropower and protect rivers by leveraging “3Rs”: 1) Rehabilitate dams for improved safety and environmental performance, 2) Retrofit powered and non-powered dams for increased electricity generation and storage, and develop closed-loop pumped storage. 3) Remove obsolete dams that are harming ecosystems, causing safety risks, and impeding recreation.

Both organizations have many other formal and informal long-term alliances and task-specific collaborations with non-government organizations, academia, and federal and state agencies. Several USSD and ASDSO partnerships are with the same organizations, particularly those with dams and levees among their focus areas. For example, both USSD and ASDSO coordinate with the Centre for Energy Advancement through Technological Innovation (CEATI) and National Hydropower Association, as well as federal agencies such as USACE and Bureau of Reclamation. The following sections highlight the most significant partnerships of each organization.

USSD

USSD’s primary partnership is with ICOLD, as the U.S. representative. In addition, USSD has developed partnerships with other member countries to promote knowledge sharing and technology transfer (e.g., the Korean National Committee on Large Dams and the Canadian Dam Association). USSD is also a member of the ICOLD National Committees of the Americas (INCA) and through this partnership participates in joint events and coordinated initiatives.

ASDSO

ASDSO works closely with ASCE on legislative activities and awareness campaigns such as National Dam Safety Awareness Day and Public Safety Around Dams and maintains strong connections to the emergency management community. It also coordinates on policy initiatives and information sharing with the Association State Floodplain Managers, National Watershed Coalition, Interstate Conference on Water Policy, Water State Engineers, and others.

INDUSTRY TRENDS

The working group reviewed recent developments and trends impacting the dam and levee safety industry. This is intended to provide a background on the challenges the industry is facing and help identify opportunities to collectively address these challenges.

TRANSITION TO RISK INFORMED DECISION MAKING (RIDM)

Over the last two decades, several federal agencies (U.S. Bureau of Reclamation, USACE, Tennessee Valley Authority and Federal Energy Regulatory Commission) have moved toward incorporating risk informed decision making (RIDM) into their dam safety programs. Private industry has adopted the application of RIDM to varying degrees, in part to align with federal agencies' requirements. While some states have incorporated RIDM into their dam safety programs, others are slower to use RIDM. The process has accelerated recently, in part driven by FEMA's Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program. USSD and ASDSO have developed several training offerings to support the trend toward increased application of RIDM.

CAPACITY BUILDING (ATTRACT, TRAIN, AND RETAIN QUALIFIED PROFESSIONALS)

Economic circumstances have led to a reduced number of qualified professionals entering the dam safety sector and civil engineering profession as a whole, since higher-paying positions can be found in technology and other fields. With fewer individuals entering the dam safety sector and senior personnel retiring, there is increasing demand for qualified candidates. Current salaries and benefits have been insufficient to attract and retain professionals. The industry is facing declining numbers and increasing need, in part due to the recent influx of hundreds of billions of dollars in federal funding from the Infrastructure Investment and Jobs Act (IIJA), Public Law 117—58, and the Inflation Reduction Act (IRA), Public Law 117-169. More specific to dams and levees, recent FEMA and USACE funding opportunities, regulatory changes (e.g., new FERC Part 12D requirements), and the movement toward a National Levee Safety Program will contribute to the need for additional dam and levee safety professionals, along with a need to train existing professionals.

The increased demand for qualified professionals asserts pressure on professional organizations like USSD and ASDSO to provide workforce training, knowledge transfer, and capacity building. The industry growth also provides opportunities for these organizations to attract new members, expanding and diversifying their membership base and broadening the organizations' scope of activities.

FOCUS ON EQUITY, ETHICS, AND COMMUNITIES

The engineering profession has identified the critical importance of justice, equity, diversity, and inclusion in the industry. In 2021, ASCE published a policy statement outlining the issue (ASCE, 2021. [Policy statement 417 — Justice, equity, diversity, and inclusion | ASCE](#)), noting the following:

“The engineering profession and ASCE membership lack representation of people from identity groups that provide the diverse perspectives of the communities we serve. The lack of diversity, equity, and inclusion in the civil engineering profession limits capacity to effectively meet societal needs. Over the last several decades progress has been made to varying degrees through awareness, education, and action. Currently, more efforts are needed to fully realize inclusive and equitable practices in our profession, to assure representation of the rich diversity of our global communities, and to produce just societal outcomes from our work.”

The profession is moving toward inclusive engineering problem solving that recognizes, values, and addresses the unique needs of diverse demographic, social, economic, and cultural groups when considering, balancing, and mitigating societal, environmental, and economic impacts of our work.

For professional organizations, this means fostering a fully inclusive culture that celebrates individual uniqueness, engenders a sense of belonging, and promotes equitable opportunity for all people to participate as members and stakeholders of the dams and levees community of practice regardless of identity.

CLIMATE CHANGE AND ENGINEERING WITH NATURE

Climate change has been a part of the national dialogue for many years, dating back to when the phenomenon was first associated with “global warming.” We are just beginning to understand the various impacts that climate change can have on infrastructure needs. These include droughts impacting water supply provided by reservoirs and changes in extreme storms impacting the resilience and safety of dams and downstream populations. The challenge for the industry is to better understand and predict climate change impacts leading to improved design and construction of resilient infrastructure and being better prepared to respond. Dams and levees will likely become increasingly important to the world in a changing climate.

TECHNOLOGICAL ADVANCES

Technological advances over the past decade have been astounding and continue at an accelerating pace. New, emerging technologies are announced almost daily. While private industry is often quicker than federal and state agencies to incorporate new technologies, there are staff, budget, and regulatory constraints that can hinder the use of new technologies in dam design, construction, and operation.

AGING INFRASTRUCTURE AND FUNDING

As infrastructure ages, design lives are reached and exceeded, often requiring rehabilitation or replacement. Aging infrastructure can pose challenges to not only the safety of the dam but also to operations and maintenance. Unfortunately, funding has not kept up with the increasing needs of replacing and maintaining infrastructure. Identifying and effectively using funding to maintain dams has been challenging.

In recent years, FEMA has been able to fund a HHPD grant program. The HHPD grant program is intended to provide funding for privately owned dams in need of dam safety modifications.

Recently, the IIJA gave additional funding to the HHPD grant program. This legislation includes a sunset date for the funding, creating the need for continued funding in the future.



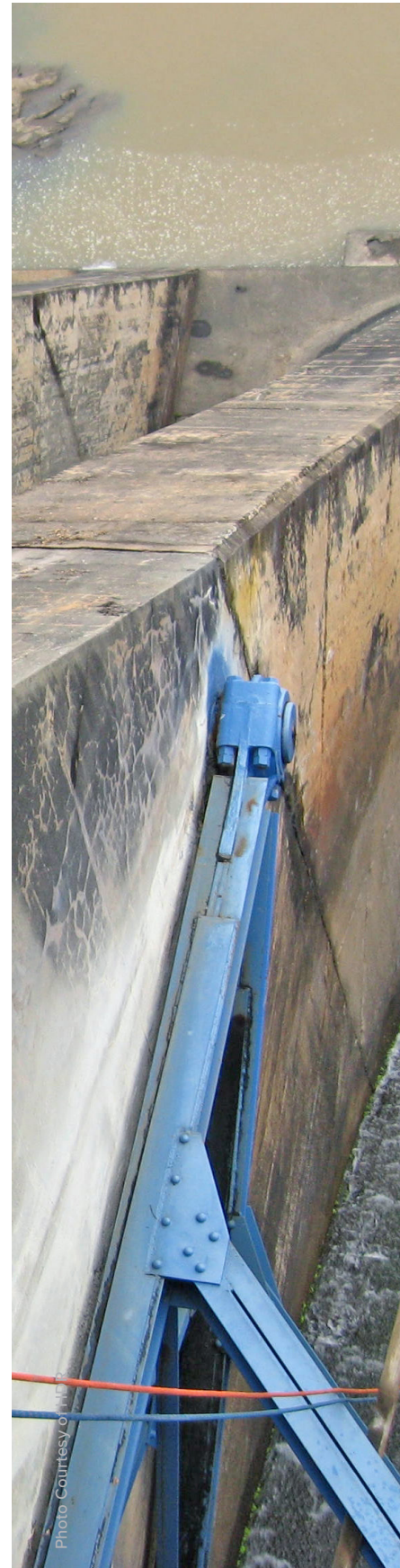
Photo Courtesy of HDP

NATIONAL DAM SAFETY PROGRAM

Led by FEMA, the NDSP is a partnership of states, territories, federal agencies, and other stakeholders that encourage and promote the establishment and maintenance of effective federal and state and territorial dam safety programs. The NDSP provides training, technical assistance, guidelines, and grants to support dam safety strategies and emergency operations planning. NDSP has two advisory committees: the Interagency Committee on Dam Safety (ICODS) and the National Dam Safety Review Board (NDSRB). As noted herein, while representatives from state agencies and the private sector serve on the NDSRB, these individuals do not officially represent either ASDSO or USSD. Each year, FEMA publishes an annual progress report “year in review,” highlighting accomplishments and providing updates. The latest report prepared for FY 2022 is available from the FEMA website (FEMA NDSP FY22 Report).

One of the major recent developments has been an increase in funding to support state dam safety programs and fund rehabilitation of high hazard potential dams. In Fiscal Year 2022, FEMA awarded \$10.9 million in State Assistance Grants and \$22 million in grant funding to continue the Rehabilitation of High Hazard Potential Dams program. In FY24, the Rehabilitation of High Hazard Potential Dams program is making about \$185 million available and approximately another \$26 million available through the National Dam Safety State Assistance Grant Program (Dam Safety | FEMA.gov).

FEMA recently published the National Dam Safety Program Strategic Plan, Fiscal Year 2024-2029, (FEMA P-2323 / June 2023, National Dam Safety Program Strategic Plan [fema.gov]). The plan presents goals, objectives, and associated initiatives, together with performance metrics and milestones. The plan includes several initiatives focusing on the development of a national dam risk assessment methodology and the adaptation of RIDM by state dam safety programs. There are also initiatives aiming to increase awareness of the benefits and risks associated with dam infrastructure, including developing guidance for dam owners on effective risk reduction, risk communication, and information sharing strategies. FEMA placed focus on updating technical guidance and developing new training, starting with identifying gaps in the current offerings and coordinating with ASDSO and USSD to close these gaps. FEMA identified ASDSO and USSD as key partners in implementing the strategic plan. In fact, ASDSO was mentioned as a coordinating entity in 20 out of 25 initiatives included in the plan. USSD is listed in 15 initiatives.



NATIONAL LEVEE SAFETY PROGRAM

Frequent flooding throughout the U.S. illustrates the importance of flood risk reduction infrastructure. In particular, there is a need for a consistent national approach to better understand and predict levee performance and manage this infrastructure in the broader community context. Following Hurricane Katrina, Congress authorized USACE and FEMA to develop and implement a National Levee Safety Program (Title IX, of the 2007 Water Resources Development Act [WRDA], as amended and codified in 33 U.S.C. Chapter 46).

The main components of the National Levee Safety Program are: 1) National Levee Safety Guidelines; 2) Integrated Levee Management; 3) National Levee Database; and 4) Implementation Support. These components, summarized below, are intended to work together as an integrated framework for managing levees. For more information on the National Levee Safety Program, visit www.leveesafety.org.

- The national levee safety guidelines will serve as a national resource of best practices to help achieve nationwide consistency in improving the reliability of levees and resilience of communities behind levees. The guidelines are currently under development, scheduled to be published for public review in 2024.
- The integrated levee management is intended to create a coordinated set of levee safety programs across the country to ensure that all levees have adequate, consistent oversight regardless of levee ownership. The goals are to clarify roles and responsibilities and encourage formal levee safety programs at the state level to serve as key integrators with other entities that have levee responsibilities.
- The goal of the National Levee Database (NLD) is to be the national resource of the most complete data record for all levees. Like the National Inventory of Dams, the NLD is intended to serve as a dynamic, searchable inventory of information about all known levee systems in the nation and a key resource for supporting decisions and actions affecting levees.
- The goal of Implementation Support is to provide various types of assistance, such as financial, technical, or streamlined processes, to motivate and support participation in the National Levee Safety Program.

Similar to the National Dam Safety Program in the 1980s, the National Levee Safety Program has the potential to shape the direction of the dam and levee community of practice and the needs of the industry for years to come.



Photo Courtesy of HDR



CISA DAMS SECTOR SPECIFIC AGENCY (SECURITY)

The Department of Homeland Security's Cybersecurity & Infrastructure Security Agency (CISA) develops guidance, resources, and training that support the security and resilience of our nation's critical infrastructure, including dams, levees, navigation locks, and other water control facilities. According to CISA, "critical Infrastructure are those assets, systems, and networks that provide functions necessary for our way of life." The Dams Sector, which includes more than 90,000 dams in the U.S, was identified as one of 16 critical infrastructure sectors whose assets, systems, and networks, whether physical or virtual, are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof.

Recent advances in the national critical infrastructure policies include Presidential Policy Directive-21: Critical Infrastructure Security and Resilience (February 12, 2013, [Presidential Policy Directive — Critical Infrastructure Security and Resilience | whitehouse.gov \(archives.gov\)](https://www.whitehouse.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resilience)) and the [National Infrastructure Protection Plan 2013 \(DHS, 2013, National Infrastructure Protection Plan \(NIPP\) 2013: Partnering for Critical Infrastructure Security and Resilience \(cisa.gov\)](https://www.dhs.gov/xlibrary/assets/nipp2013.pdf)). The updated approach to critical infrastructure security and resilience presented in these documents places greater focus on integration of cyber- and physical security efforts; closer alignment with national preparedness efforts; integration of information sharing as an essential component of the risk management framework; and stronger emphasis on cross-sector and cross-jurisdictional coordination. These strategic documents, together with handbooks, guides, fact sheets, and other resources published by CISA Dams Sector, provide the framework for managing cybersecurity and physical security risks at dams and levees.

Through the years, USSD and ASDSO have engaged in several collaborative efforts with varying degrees of success. No formal Memoranda of Understanding (MOU) or cooperative agreements are currently in place. Highlights from the past MOUs are provided below.

ASDSO-USCOLD PARTNERING AGREEMENT, MARCH 24, 1995

In 1995, ASDSO and USCOLD signed a partnership agreement provided in Appendix D and summarized below.

Excerpt from Mission Statement: Our common purposes are to provide a forum for the exchange of ideas and experiences in the engineering and operation of dams, to foster communication among professionals in order to develop and maintain safe dams, and to promote public awareness of the importance of dam safety.

GOALS AND OBJECTIVES:

1. Establish and maintain effective communications between ASDSO and USCOLD at all levels.
2. Maintain a mutual investment in the future by promoting continuing education, research, and development.
3. Develop a process of joint meetings, conferences, and projects towards effective participation of all involved industry professionals and organizations.
4. Cooperate in the development and improvement of guidelines, standards and research in dam-related technology and practices.
5. Promote public awareness of dam safety and the role of safe and functional dams.

2000-2001

FEMA, with ASDSO as its contractor, hosted the Workshop on Risk Assessment for Dams in March 2000, which was linked to the Working Group on Risk Assessment of the USSD Committee on Dam Safety. A summary and findings of the workshop was published in June 2001.

2009-2010

In 2009, ASDSO and USSD engaged in discussions of reinstating a formal partnership, and USSD prepared a memorandum identifying several topics of mutual interest related to dam safety research, training programs, and legislative initiatives. ASDSO concurred with the importance of collaboration and suggested an immediate focus on dam safety research. It further proposed specific steps that the organizations can take to “best serve the dam safety community”:

1. Identify the participants including potential sponsors of research
2. Identify entities interested in and already conducting or embarking on research related to dam safety
3. Identify needed research topics using work already completed by FEMA
4. Select research
5. Coordinate funding to pool dollars for research selected
6. Oversee the completion of research topics
7. Sponsor events presenting research completed

These memoranda are provided for reference in Appendix D. While there may have been some follow-on discussions related to this collaboration, no formal partnership was established and the steps identified were not pursued, partially due to different agencies, academia, and others having different ideas of priorities and partially due to challenges related to pooling and managing funding.

2011

ASDSO and USSD jointly developed and hosted a Tailings Workshop. There was a separate effort to form a joint committee to develop and deliver on-site dam operator training. This did not progress; however, a White Paper was completed by USSD with ASDSO input on how this might be accomplished.



Photo Courtesy of HDR



2015

ASDSO and USSD successfully collaborated on two coordinated workshops: “Updates on National Levee Safety Initiative Implementation and Overview of Levee Technical Guidelines” held during the Dam Safety conference in 2015 in New Orleans, LA, and as part of the USSD Fall Workshops in Oakland, CA. Technical programs were designed to be complementary, covering similar topics but having different focus. The New Orleans workshop focused on policy, program, and international perspective, while the Oakland workshop focused on technical guidelines.

The technical planning committee and speakers/presenters comprised volunteers from both organizations. ASDSO was solely responsible for the setup and cost for and revenues from the September workshop, while USSD was solely responsible for the November workshop. USSD and ASDSO served as partner organizations for each other’s workshop, receiving complimentary registration for board members, complimentary booth/table space, and on-site acknowledgement through organization signage and announcements during the program. Both organizations coordinated and collaborated on promoting the workshops. The details of the arrangements were outlined in an MOU signed by both organizations.

Through the US Levee Safety Coalition, ASDSO and USSD collaborated on a national campaign for the recently published International Levee Handbook. The rollout campaign included 20 free webinars held over a 9-month period to present and discuss 10 chapters of the document. The webinars attracted 1,700 participants from 225 companies in 11 countries. ASDSO volunteered its staff and resources to host the website and materials. Levee Coalition member organizations (ASDSO, USSD, ACEC, ASCE, NAFSMA and DFI) coordinated on promoting the webinars and took turns facilitating webinars, introducing speakers, and hosting Q&A sessions. Webinars were hosted and recorded by an A-E firm (HDR) and were free. There were no financial arrangements between USSD, ASDSO, or any other members of the Levee Coalition.

2015-2016

There were attempts to coordinate more closely on legislative advocacy, but no formal agreements were put in place.

RESEARCH

Research and development for dam safety has been accomplished by many entities including federal agencies and national labs, the National Dam Safety Program, academia, state agencies, and others. As noted, this was a topic identified for potential collaboration in the 2010 correspondence between USSD and ASDSO.

For many years, FEMA, through the National Dam Safety Program, has hosted research needs workshops and summits, including but not limited to:

- Topic-specific research needs workshops on Impacts of Plants and Animals on Earthen Dams (1999), Seepage through Embankment Dams (2000), Hydrologic Issues for Dams (2001), Outlet Works (2004), and Dam Spillways (2005). Many topic-specific workshops led to the development of FEMA guideline documents.
- 2010 FEMA Research Summit and Research Workshop as part of strategic planning to identify emergency priorities related to resilience, emergency management, and dam infrastructure.

Most recently, in February 2023, the FEMA National Dam Safety Program hosted a research summit with attendees from federal and state agencies, academia, and industry partners, including both ASDSO and USSD. Through the summit, the National Dam Safety Program selected 32 projects, including updating existing guidelines and developing new publications and tools related to dam safety and security, with a planned start of fall 2023. Additional information on this summit can be found in FEMA's 2023 National Dam Safety Research Summit Report (August 2023).



Photo Courtesy of HDR

MAJOR FINDINGS AND OPPORTUNITIES FOR ALIGNMENT

ASDSO and USSD are well-established professional organizations, both with a long history of supporting the dam and levee community in the United States.

In general, ASDSO's primary focus is on the safety of existing dams, while USSD focuses on advancing the state of practice in dam/levee engineering and promoting the benefits of dams and levees. However, the organizations have broad strategies encompassing many facets of the dam and levee profession. With a degree of similarity in missions, initiatives undertaken by both organizations have evolved over the past 30 years to meet the needs of the industry and, in some cases, have been identified as overlapping.

Through the years, USSD and ASDSO have engaged in multiple collaborative efforts with varying degrees of success. While the two organizations have historically kept each other informed of activities, a more deliberate and active partnership could benefit the membership of USSD and ASDSO and the dam and levee community. Each organization has a distinct culture and identity, and both bring unique strengths that complement each other. For example, ASDSO has a proven record of successful legislative advocacy and in-depth understanding of state dam safety perspectives, while USSD brings strong technical expertise and global connections through ICOLD. It is important for ASDSO and USSD to acknowledge and celebrate their differences. Each organization should embrace its organizational culture and build on its strengths, amplifying each other's voices, so that together they continue to meet the evolving industry needs.

The working group developed the following major findings, along with opportunities and challenges related to various aspects of the organization.

ORGANIZATIONAL ELEMENTS AND ACTIVITIES	MAJOR FINDINGS	OPPORTUNITIES/CHALLENGES
GOVERNANCE	<p>ASDSO’s governing body and voting members are comprised of state representatives only.</p> <p>USSD governing board and voting members are comprised of any member.</p>	None identified.
MEMBERSHIP CHARACTERISTICS	<p>Mutual gaps: academia, constructors, owners.</p> <p>Large overlap in membership.</p> <p>Mutual emphasis on young professionals.</p> <p>USSD members are recognized as members of ICOLD and have access to their resources.</p>	YP and Student Outreach committees can collaborate on initiatives identified by both boards (e.g., strategy for engaging academia or student outreach programs).
CULTURE	<p>ASDSO has more of a state perspective with emphasis on federal and state legislative advocacy for strong dam safety laws, policies, and funding.</p> <p>USSD has more of a technical perspective and strong international relationships through ICOLD.</p> <p>Both organizations have traditionally been supported by small staffs. Both organizations have increased staffing over the past several years.</p>	<p>Acknowledge and embrace the cultural differences. It is important for each organization to stay true to their organizational culture and mission, building on their own strengths.</p> <p>Be aware of each other’s strategic plans and ongoing activities. Leverage each other’s strengths. For example, if someone brings an idea to the board, ask if any other organization is already doing something similar or could be more effective at implementing this idea.</p> <p>Encourage staff to meet regularly to discuss opportunities in relation to their plan of work and priorities.</p>
COMMITTEES	<p>Majority of USSD’s committees are technically focused. USSD is highly driven by the committees.</p> <p>Majority of ASDSO’s committees are project focused.</p> <p>Some overlap in focus of committees and workgroups (Public Safety, Tailings, Dam Design and Construction, Speakers Bureau).</p> <p>Necessarily similar committees (Awards, Conference Programming, Bulletin/Journal, Training & Education, Young Professionals).</p>	<p>Consider eliminating/combining truly redundant committees (e.g., a technical committee of ASDSO that has a mirror technical group at USSD).</p> <p>Encourage committees to collaborate and facilitate collaboration as needed across organizations.</p> <p>Identify specific collaboration opportunities. For example, the Awards committee could cross-promote winners.</p>

ORGANIZATIONAL ELEMENTS AND ACTIVITIES	MAJOR FINDINGS	OPPORTUNITIES/CHALLENGES
SCHOLARSHIP PROGRAM AND ENGAGING ACADEMIA	<p>Both organizations have scholarship programs, but they target different audiences.</p> <p>Both have limited success engaging academia.</p>	<p>Collaborate on student activities, student scholarships, and awards (e.g., co-organize and support a student competition).</p> <p>Joint strategy for engaging academia, considering their needs. For example, leverage and cross-link ASDSO and USSD publication databases to increase publication citation impact.</p>
TRAINING AND EDUCATION	<p>Need for industry training warrants some crossover and overlap in topics/materials.</p> <p>Both organizations focus on the industry needs.</p> <p>Each organization considers its training material proprietary.</p> <p>Audiences for each organization’s training are slightly different dependent upon topic.</p> <p>Trainings are an important component of each organization’s revenue stream. Opportunities for coordination/collaboration must consider this.</p> <p>Instructor pools are similar.</p> <p>Both organizations have a library of training and resources available through a learning management system.</p> <p>ASDSO has a published Program of Study for dam safety professionals.</p>	<p>Coordinate training schedules and plans via regular meetings between training committees and/or staff.</p> <p>Cross promote trainings.</p> <p>Leverage and jointly update the Program of Study, in coordination with the FEMA NDSP.</p> <p>Address industry need for the tracking of training from multiple providers.</p> <p>Regularly communicate with the FEMA NDSP on training needs. Include both organizations in correspondence and meetings/workshops.</p>
CONFERENCES	<p>Conferences are important component of each organization’s revenue stream. Opportunities for coordination must consider this.</p> <p>There is overlap in attendance, exhibitors, and topics.</p> <p>Formats of the events are similar (i.e., technical sessions, field tours).</p> <p>Timing and location of conferences are separated to ensure both events have strong participation.</p> <p>ASDSO holds regional conferences in addition to the annual national conference.</p> <p>USSD occasionally incorporates international topics/events and invites international representatives.</p>	<p>Co-organize topic- or audience-specific events (workshops, forums, etc.). For example, hold a joint forum to solicit input from the dam and levee industry on ongoing efforts related to precipitation (National Academy of Science PMP updates and NOAA’s Atlas 15 development). Intermixing resources and funds is a major challenge. The 2015 levee workshops provide a successful model to overcome this challenge.</p> <p>Cross promote conferences and events.</p> <p>Coordinate schedule/location of conferences.</p> <p>Waive attendance cost for staff/leadership of other organization and/or free booth space.</p> <p>Review and vet duplicative publications and presentations.</p> <p>Consider including the similar “industry update”-type presentations at both conferences.</p>

ORGANIZATIONAL ELEMENTS AND ACTIVITIES	MAJOR FINDINGS	OPPORTUNITIES/CHALLENGES
ADVOCACY AND GOVERNMENT RELATIONS	<p>Historically, ASDSO has been strongly engaged in legislative advocacy.</p> <p>ASDSO has staffing resources dedicated to legislative activities.</p> <p>Historically, USSD has not focused on legislative activities, primarily due to its culture.</p> <p>Advocacy is a component of both organization’s strategic plans.</p>	<p>Numerous opportunities for collaboration:</p> <ul style="list-style-type: none"> ▪ Joint position papers and public releases ▪ Consistent messaging ▪ Joint legislative visits and messaging ▪ Sharing information from partnerships and coalitions <p>Host regular coordination calls with staff/ leadership regarding advocacy efforts.</p> <p>Fund a government affairs expert who would be a resource to both organizations.</p>
PUBLIC AWARENESS/MEDIA OUTREACH	<p>Both organizations are working to maintain or develop a viable and sustainable Speakers Bureau</p>	<p>Combine speaker bureaus.</p> <p>Coordinate on common awareness talking points.</p> <p>See advocacy and government relations opportunities.</p>
PUBLICATIONS AND RESOURCES	<p>ASDSO has a robust searchable database and educational resources for students and the general public.</p> <p>USSD produces highly technical white papers, but they are underutilized by the industry.</p> <p>USSD members have access to ICOLD resources and participate in development of international technical bulletins.</p> <p>Neither organization’s publications are searchable on Google Scholar.</p> <p>Each organization produces a quarterly magazine.</p>	<p>Ensure USSD publications are included in ASDSO searchable database.</p> <p>Provide a link on USSD website to ASDSO resource database.</p> <p>Consider free access to publications for members of either organization.</p> <p>Publicize/advertise USSD white papers.</p> <p>Publicize/advertise ASDSO educational resources for students, dam owners and general public.</p>
PARTNER ORGANIZATIONS AND COALITIONS	<p>Both organizations are members of the US Levee Safety Coalition and Uncommon Dialogue Coalition.</p> <p>Both organizations recognize the importance and value of partnerships and collaborations.</p>	<p>Each organization could promote and support engagement of the other organization in activities that are aligned with ASDSO or USSD strategic plans.</p>
NATIONAL DAM SAFETY PROGRAM	<p>Historically, both organizations have been requested to suggest people to fill seats on the NDSRB. However, neither organization has designated positions on the board, and the state and private sector representatives do not officially represent either organization.</p> <p>Both organizations participate in national research summits.</p>	<p>Speak with a unified voice to FEMA for topics related to NDSP and industry needs.</p> <p>Coordinate efforts when participating in research summits, identifying research needs and collaborating with research organizations.</p> <p>Collaborate to fill gaps in FEMA efforts (e.g., FEMA approach to development, maintenance, and update to guidelines).</p> <p>Jointly request regular briefings from FEMA, including updates on activities of the NDSRB.</p>

ORGANIZATIONAL ELEMENTS AND ACTIVITIES	MAJOR FINDINGS	OPPORTUNITIES/CHALLENGES
NATIONAL LEVEE SAFETY PROGRAM	Both USSD and ASDSO support the development of a National Levee Safety Program and were founding members of the US Levee Safety Coalition	Collaborate to shape the National Levee Safety Program while it is still being developed. Speak with unified voice to FEMA and USACE. Reengage the US Levee Safety Coalition.
DAM FAILURES AND INCIDENTS INVESTIGATIONS, PEER REVIEWS	<p>ASDSO has a robust peer review program for all types of dam owners and regulators.</p> <p>ASDSO maintains a database of failures and incidents, helping professionals better understand root causes and learn from the past. The database is focused on dams in the U.S.</p> <p>USSD contributes to the World Register of Dams, maintained by ICOLD.</p> <p>ASDSO completed several forensic investigations (e.g. Spencer, Oroville, Midland dams) and developed a dam failure investigation guide.</p> <p>ASDSO and USSD collaborated on identifying members of the Independent Forensic Team investigating the 2017 Oroville Spillway Incident and the risk team for the congressionally mandated risk assessment of the Oroville Complex</p>	<p>Coordinate responses to forensic investigation and flood response assistance requests.</p> <p>Co-promote dam failures and incidents database on both websites.</p> <p>Co-update and synthesize information and co-develop lessons to be learned through a more deliberate coordination between ASDSO Dam Failures and Incidents committee and USSD Dam Safety committee.</p>
INDUSTRY TRENDS	<p>Trends presented in this report are common to both organizations and are reflected in both strategic plans.</p> <p>There is currently a strong demand for RIDM training.</p> <p>ASDSO does not have a committee focused on RIDM but has a need for training that is state focused.</p> <p>USSD offers technical training for dam/levee professionals on RIDM concepts and best practices.</p> <p>USSD recently created a Diversity, Equity, and Inclusion (DEI) committee and actively participates in ICOLD DEI efforts.</p>	<p>Leverage currently available time-limited funding opportunities to support the industry.</p> <p>Work collaboratively with FEMA to develop training and guidance for applying RIDM in state and other programs.</p>

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The White House, Office of the Press Secretary, February 12, 2013, [Presidential Policy Directive — Critical Infrastructure Security and Resilience | whitehouse.gov \(archives.gov\)](#)

APPENDICES

Appendix A — USSD-ASDO Working Group Charter 2022

CHARTER **USSD-ASDSO Partnership – Working Group** July 5, 2022

BACKGROUND AND NEED

The United States Society of Dams (USSD) and Association of State Dam Safety Officials (ASDSO) are well established professional organizations, both with long histories of supporting the dam and levee community in the United States. With a degree of overlap in missions, various initiatives undertaken by both organizations have expanded over the past 30 years and, in some cases, have been identified as overlapping. This could be perceived as confusing to the industry and members; however, it is a great opportunity for cooperation and for clarifying missions. While the two organizations have historically coordinated and kept each other informed of activities, a more deliberate and active partnership could benefit the membership of USSD and ASDSO and the dam and levee community.

OBJECTIVES, TASKS, AND TIMELINE

The objective of this working group is to evaluate the pros/cons and need for cooperation, discuss similarities and differences of missions between the organizations and identify potential opportunities to partner on projects/initiatives.

The initial tasks of this working group are as follows:

- Gather facts and perform retrospective research into the history and evolution of both organizations and the industry/community, including past relationships and collaboration between USSD and ASDSO.
- Identify opportunities for streamlining and aligning the organizations to better serve the industry.
- Present the findings to the leadership of both organizations.

The proposed timeline for this initial work is one year from approval of this Charter. A new Charter would be developed if the leadership of USSD and ASDSO identifies the need for ongoing support from this Working Group.

MEMBERSHIP

The proposed working group members were selected by both organizations based on their experience with both ASDSO and USSD along with their commitment to the dams industry. They are all considered highly respected in the industry. The working group includes the following:

- Brian Becker
- Keith Ferguson
- John France
- Dave Gutierrez
- Eric Halpin
- John Moyle
- Greg Paxson
- Everett Taylor

Elena Sossenkina will lead this effort and serve as a facilitator of the working group.

Appendix A — USSD-ASDO Working Group Charter 2022

The working group has identified resources from both organizations to assist with this effort, particularly related to the fact gathering and historical retrospective research. This includes, but is not limited to past and current executive directors, committee leadership, and organization staff.

DELIVERABLES

The deliverable for this effort will be a short report documenting the initial tasks and findings. Member(s) of the working group will present the findings to USSD and ASDSO leadership.

BUDGET

The anticipated expense is for two in-person meetings during the year and is estimated to be \$10,000. Meeting space will be provided by one of the working group members' organizations (e.g. Schnabel, HDR or AECOM) at no charge. Out of pocket travel expenses by working group members and resources (organization staff), if needed, will be split between USSD and ASDSO (e.g. each member of the working group will be assigned to either USSD or ASDSO for expense reimbursement). Working group members and resources will volunteer their time for this effort and where possible, members will look to fund the travel through their organizations.

RECOMMENDED

Catrice Jones

USSD Executive Director

Jul 8, 2022

Date

Loi C. Spragens

ASDSO Executive Director

Jul 7, 2022

Date

APPROVED

Del Shannon

Del Shannon (Jul 6, 2022 12:39 MDT)

President, USSD

Jul 6, 2022

Date

Charles N. Thompson

Charles N. Thompson (Jul 6, 2022 15:28 MDT)

President, ASDSO

Jul 6, 2022

Date

Appendix B — Origins of the Association of State Dam Safety Officials

by Charles H. Gardner. Circa 1995

The formation of the ASDSO represents the convergence of common interests resulting from several somewhat independent events and national trends in the dam safety community. This brief history attempts to identify some of those trends and events, and focuses on the cooperative efforts of several groups and individuals that culminated in the official formation of the Association on June 20, 1984.

The need for public assurance of dam safety has drawn progressively increasing attention over the past few decades, particularly in reaction to several catastrophic dam failures across the country. Notable among those catastrophes were the devastating social impacts of the dam failures at Johnstown, Buffalo Creek, Baldwin Hills, Laurel Run, Teton, and Kelly Barnes (Toccoa Falls). A very close call was experienced by the partial failure of the Lower Van Norman Dam, which could have killed thousands of people had the failure completely developed.

In reaction to these and other dam failures, the federal agencies responded by improving their dam safety programs. Notable among the federal responses were the passage of the National Dam Inspection Program (PL92-367) in 1972 and the creation of the Interagency Committee for Dam Safety (ICODS). However, improvements in federal dam safety only brought into clearer focus the deficiencies of a vast number of non-federal dams, which are the responsibility of the states.

The importance of non-federal dams and state dam safety programs was long recognized by some organizations, as exemplified by the United States Committee on Large Dams (USCOLD) publication in 1970 of a Model Law for State Supervision of Safety of Dams and Reservoirs. In the early 1970s, a national dam inventory was established (under the authority of PL92-367) and it identified nearly 90,000 non-federal dams; in 1978-81 (under PL92-367) about 9,000 of these non-federal dams were inspected in a "crash program" (Phase 1) and about one-third of them were found to be "unsafe." Since the federal government has no direct responsibility or authority concerning the safety of non-federal dams, the results of the Phase I studies dramatically pointed out the need for adequate state dam safety programs.

The Federal Emergency Management Agency (FEMA) was particularly concerned about the large number of unsafe non-federal dams and indications that many, or most, states had inadequate dam safety laws and programs. In response, FEMA funded a National Research Council Committee on Safety of Non-Federal Dams. Its report (1982) pointed out the need for better state dam safety programs, interstate dam safety communication, and the need for a national perspective (assessment) of the problem of poor state dam safety programs. This report was followed by a National Research Council report, *Safety of Existing Dams* (1983), a technical manual focused on dam safety assessments and remedial alternatives.

A landmark assessment of state dam safety programs was conducted by Dr. Bruce A. Tschantz in 1982 and published under FEMA sponsorship in 1983 as a Report on Review of State Non-Federal Dam Safety Programs. That report, based on a detailed questionnaire distributed to the 50 states, made it clear that over half the states either had no dam safety law or no dam safety program. Another very important conclusion of the report, based on the questionnaires, was that almost without exception the states felt a need to have an interstate forum for sharing information related to state dam safety programs.

Thus, by the early 1980s both federal and state interests felt that a vacuum existed in interstate dam safety communication. Rather spontaneous and informal interstate regional conferences had begun to develop, but no mechanism for national interstate communication existed. It became increasingly apparent that the states could help each other strengthen and streamline their dam safety programs and that, collectively, they could have an impact on federal policies and programs concerning non-federal dams if they could establish a formal association. In 1982 the writer had several independent conversations with Dr. Bruce Tschantz of the University of Tennessee, Mr. Bill Bivins of FEMA, and representatives of the Council of State Governments to discuss this issue.

In January of 1983 a meeting was held between Bill Bivins, Bruce Tschantz, the writer, and several staff members of the Council of State Governments (CSG) including Leslie Cole, Judith Sardo, and Doug Roderer. The purpose of the meeting was to explore the possibility of having CSG assist the states in putting together a national association of dam safety officials. It was agreed that 1) the writer would develop an organizing committee to work with CSG to plan a national meeting of state dam safety officials and 2) CSG would submit a proposal to FEMA

to solicit funds for the national meeting and national organizing efforts. State dam safety representatives from all 50 states were invited to attend a meeting on February 28, 1983, in Orlando, Florida (concurrent with a Southeastern Dam Safety Conference) to discuss the concept of a national association and to form the organizing committee. In response, 16 states sent representatives to the Orlando meeting and an additional 26 states sent letters of support for the concept.

At the February 28, 1983, meeting in Orlando, Dr. Tschantz reviewed the state dam safety program survey results, Mr. Doug Roderer of CSG and Mr. Bill Bivins of FEMA indicated supporting roles their organizations could take, and the writer solicited the following broad-based Organizing Committee for the Association of State Dam Safety Officials.

- Colorado
- Kansas
- Pennsylvania
- Ohio
- Wyoming
- Texas
- North Carolina
- New Hampshire

Appendix C — Committees, Workgroups, & Taskforces

ASDSO	USSD
Awards	Awards
Book Club	Book Club
Technical Journal Editorial	USSD Bulletin Editorial
National Conference Program Committee	Conference Program Committee
Regional Conference Program Committee	
NA	Diversity, Equity, and Inclusion
Training Committee	Education and Training
Dam Owner Education Committee	Subcommittees:
Dam Safety Toolbox Subcommittee (of the Dam Design and Construction Committee)	<ul style="list-style-type: none"> • Risk Training • Dam Failures and Incidents
NA	Membership
Public Safety around Dams	Public Safety, Security and Emergency Management for Dams
Young Professionals Interest Group	Young Professionals
Career Development and Student Outreach	Subcommittees:
Subcommittees:	<ul style="list-style-type: none"> • Student Outreach
<ul style="list-style-type: none"> • Undergraduate Scholarship: Historically there was agreement that ASDSO would provide an undergraduate scholarship and USSD would provide a graduate level scholarship. • Model Dam Competition • Student Paper Competition 	This is a function of Awards Committee. Note: Historically there was agreement that ASDSO would provide an undergraduate scholarship and USSD would provide a graduate-level scholarship.
Advisory Committee	NA
Media Relations Committee	NA
Peer Review Committee	NA
Extreme Precipitation and Investigation Task Force	NA
Legislative Advocacy Interest Group	NA
NA	ICOLD Congress Papers
NA	Concrete Dams
	Subcommittees:
	<ul style="list-style-type: none"> • Dam Raises • Seismic Analysis of Concrete Dams

ASDSO	USSD
Estimating the National Cost to Rehab US Dams Task Force Dam Design and Construction Committee (with a focus on state regulatory issues)	Construction and Rehabilitation Subcommittees: <ul style="list-style-type: none"> ▪ Cost Estimating and Cost Trends ▪ Cutoff Wall Construction ▪ Cofferdams ▪ Risk Management ▪ Underwater Inspection and Construction, Slurry ▪ Wall Construction ▪ GERCC Construction Technique ▪ Asset Management
NA	Dam Decommissioning
Dam Failures and Incidents Committee Subcommittees: <ul style="list-style-type: none"> ▪ Failures History Book ▪ Decade Dam Failures ▪ DamFailures.Org Researchers ▪ ENR Research ▪ Dam Failures Investigation Manual Updates 	Dam Safety Subcommittees: <ul style="list-style-type: none"> ▪ Dam Failures ▪ Risk
NA	Earthquakes
NA	Embankment Dams
NA	Environment and Sustainability
NA	Foundations
NA	H&H Subcommittees: <ul style="list-style-type: none"> ▪ Gates and Valves ▪ Spillways ▪ Sedimentation ▪ Water Resources ▪ Hydrology
NA	Monitoring of Dams and Their Foundations Subcommittees: <ul style="list-style-type: none"> ▪ Fully Grouted and Piezometer Installations ▪ Seismic Instrumentation for Dams ▪ Training of On-Site Dam Operations Personnel ▪ Threshold Values and Action Levels
Tailings Dams Regulatory Committee (soon to be turned into an interest group after the guidelines are finished)	Tailings Subcommittees: <ul style="list-style-type: none"> ▪ Liquefaction

Appendix D — Past ASDSO — USSD Agreements and Correspondence

To be made available upon request per each organizations internal processes.

**ASSOCIATION OF STATE DAM SAFETY OFFICIALS
AND
U.S. COMMITTEE ON LARGE DAMS**

PARTNERING AGREEMENT

Mission Statement


By this agreement, the Association of State Dam Safety Officials (ASDSO) and the United States Committee on Large Dams (USCOLD) establish a partnering relationship. Our common purposes are to provide a forum for the exchange of ideas and experiences in the engineering and operation of dams, to foster communication among professionals in order to develop and maintain safe dams, and to promote public awareness of the importance of dam safety.

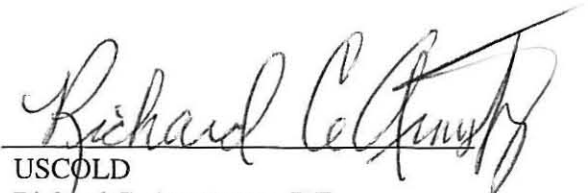
Goals & Objectives

- Establish and maintain effective communications between ASDSO and USCOLD at all levels.
- Maintain a mutual investment in the future by promoting continuing education, research and development.
- Develop a process of joint meetings, conferences and projects towards effective participation of all involved industry professionals and organizations.
- Cooperate in the development and improvement of guidelines, standards and research in dam-related technology and practices on a continuous basis.
- Promote public awareness of dam safety and the role of safe and functional dams.

This agreement is a model for direction and a roadmap for action. ASDSO & USCOLD will convene future discussions and meetings to improve, refine and continue effective implementation of each of these objectives.

Agreed to this day,
March 24, 1995


ASDSO
James D. Simons, P.E.
President


USCOLD
Richard C. Armstrong, P.E.
President

United States Society on Dams
of the International Commission on Large Dams
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Memorandum

July 28, 2010

To: David Gutierrez, President, and Lori Spragens, Executive Director, ASDSO
Kenneth Steele, Past President, and Larry Stephens, Executive Director, USSD

From: Dan Hertel, President, and Keith Ferguson, Member, Board of Directors, USSD

During the USSD Board of Directors meeting on April 11, 2010, members of the Board expressed interest in advancing discussions with ASDSO on topics of mutual interest and potential organizational collaborative initiatives. Directors Muller and Ferguson subsequently met at the USSD annual conference with Mr. Gutierrez, President of ASDSO to discuss ways that such an initiative could be advanced. It was generally agreed that representatives from both organizations would schedule and conduct a meeting at the upcoming ASDSO Annual Conference in Seattle. The purpose of this memorandum is to propose and work toward an agenda for that meeting and to outline other meeting details as may be necessary. Mr. Gutierrez and Mr. Ferguson subsequently discussed the first version of this memo by phone on July 12th. The memo has been updated to reflect those discussions and to help further advance the agenda and attendance list for the September meeting.

Several topics of mutual interest have been identified by the Directors of USSD and ASDSO. These are outlined below along with appropriate background and discussion:

1. Dam Safety Research
2. Training Programs
3. Legislative Initiative

This memorandum will be circulated for input and consensus development of the final meeting agenda around this and other topics. It is anticipated that a 1 hour meeting between representatives of ASDSO and USSD will first be held to develop consensus on the key issues, topics, and action items. Results of this meeting will be summarized in a set of notes. Following this initial meeting, a separate 2 hour meeting will be held for the specific purpose of discussing dam safety research topics, concerns, and to try to develop a consensus agenda to develop a coordinated effort for future research and research funding. Topics of interest to be included in the agenda are as follows:

Dam Safety Research:

- proposal by CU for National Dam Safety Research Institute at CU raised important questions regarding research topics and the lack of a national research strategy critical to the advancement of the dam safety profession
- Federal Agencies currently advance separate research Often, different organizations are doing the same or similar research without finding out whether an initiative has been done before or what conclusions have been discovered prior
- A joint USSD/ASDSO/Federal Agency (National Dam Safety Review Board) initiative related to research would appear to have the potential to secure significant funding and advancement of research topics. Some of the pressing research topics include

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Vice President

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Patrick J. Regan

Michael F. Rogers

Jerry W. Webb

Executive Director

Larry D. Stephens

Committees

Awards

Victor M. Vasquez

Concrete Dams

Michael F. Rogers

Construction and Rehabilitation

Daniel L. Johnson

Dam Decommissioning

Timothy J. Randle

Dam Safety and Dam Security

Brian Becker

Earthquakes

Joseph L. Ehasz

Environment

Patrick Mangan

Foundations

Richard A. Millet

Hydraulics of Dams

James E. Lindell

ICOLD Congress Papers

John S. Wolfhope

Levees

Peter J. Hradilek

Materials for Embankment Dams

Craig W. Harris

Membership

Manoshree Sundaram

Monitoring of Dams and Their Foundations

Jay N. Stetler

Newsletter

John C. Lyon, Jr.

Public Awareness

Rebecca Ragon

Tailings Dams

Jose L. M. Clemente



July 28, 2010 (page 2 of 3)

- PMF hydrology in the western US and how risk applications could affect hydrology criteria and corrective actions
- Development of a common platform for the application of risk analysis to non-federal dam owners, particularly those under the jurisdiction of State Agencies

Training Programs:

- Training of dam safety professionals on key technical and program administration activities are strategic interests of both organizations
- Each organization brings important capabilities to the organization and execution of training programs
- ASDSO/USSD should discuss whether or not collaboration on one joint technical training workshop on a topic of mutual interest each year is needed. A joint training committee consisting of representatives from each organization could meet bi-annually at the USSD and ASDSO annual conferences to provide the direction and oversight of this joint initiative.

Legislative Initiatives:

- The development and passage of dam safety legislation is central to the interests and strategic plan of ASDSO
- Dam safety legislation has significant impact on the technical agenda of USSD
- A joint initiative whereby ASDSO leads, and USSD supports the technical aspects of such legislation appears to be in the mutual interest of both organizations
- A joint subcommittee of both organizations should meet bi-annually at the USSD and ASDSO annual conferences to discuss legislative issues and develop collaborative initiatives in the mutual interest of both organizations. Technical committees within USSD would subsequently be identified to support the collaborative initiatives consistent with the bi-laws and terms of reference of USSD and its committees.

Meeting Agendas:

Meeting No. 1 (ASDSO/USSD Leadership – 1 hour)

1. Introduction of Participants
2. History of Collaboration Initiatives
3. Training Topics and Initiatives
4. Legislative Topics and Initiatives
5. Research Topics and Initiatives
6. Summary of Action Items and Assignments
7. Future Meeting

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Meeting No. 2 (Members of National Dam Safety Review Board, ASDSO, USSD, and other Invited Guests)

1. Introduction of Participants
2. Review of Existing Research Issues, Topics, Agenda's and Funding
 - a. FEMA....
 - b. USACE (Eric Halpin)
 - c. USBR (Brian Becker, Perry Hensley)
 - d. FERC (Dan Mahoney, Pat Regan)
 - e. State of California (Dave Gutierrez)
 - f. Others?
3. Update of National List of Research Issues, Topics and Priorities
4. Discussion on Potential for Collaboration to Achieve Supplemental Funding and Priority for Research
5. Summary of Action Items, Assignments
6. Future Meetings

A handwritten signature in black ink that reads "Daniel J. Heeter".

A handwritten signature in blue ink that reads "Karl A. Ferguson".



ASSOCIATION OF STATE DAM SAFETY OFFICIALS

Working to improve dam safety in the USA

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MEMO

To: Dan Hertel, President USSD

From: David Gutierrez, President ASDSO

Date: July 29, 2010

Thank you for your letter dated July 12, 2010. While USSD's mission encompasses all aspects of dams to benefit society, ASDSO's mission is focused solely on dam safety and therefore, as you acknowledge, there are several topics of mutual interest on which our organizations can collaborate. In your letter you outline three topics for collaboration including:

1. Dam Safety Research
2. Training Programs
3. Legislative Initiatives

I suggest we immediately focus on dam safety research because this subject is a critical aspect of dam safety and one that is currently not being adequately addressed.

Training Program

ASDSO has a well established training program including a "program of study" for dam safety professionals and several off the shelf courses. Our organization has sponsored several technical training courses over the years and is currently developing web based courses. We are currently updating our "program of study" and would like to share that with USSD once it is complete in a few months. Our course of study will outline the dam safety courses offered by ASDSO and others. Once our course of study is complete, there may be gaps that USSD can eventually fill. Therefore, I suggest we concentrate on coordinating training between our organizations at this point instead of collaborating so we can focus on the dam safety research issue outlined below

Legislative Initiatives

ASDSO also has a well established legislative committee and has been formally advocating for national dam safety for years. ASDSO retains a consultant in Washington D. C. to help us lobby the many important political issues facing dam safety. Currently ASDSO is focused on the following legislative issues:

1. Reauthorization and further appropriation of the National Dam Safety Act
2. Authorization and eventual appropriation of a National Dam Rehabilitation Act
3. Authorization and eventual appropriation of a new National Levee Safety Act.

Many of our members join us annually to meet with congressional representatives and describe and discuss the many dam safety issues facing our country. USSD can assist by helping to lobby legislation that is common to both of our organizations. I suggest USSD appoint a member to join our legislative committee, who can be a liaison to the USSD Board.

Dam Safety Research

There are several dam safety technical issues that are not clearly understood. Although there is research being conducted around the country, it is currently not being coordinated effectively and may not be addressing some of the most critical issues. I suggest USSD and ASDSO lead the effort to help identify and select the most critical research topics, coordinate funding for the research and help oversee research that will assist the dam safety community. There is already work that we can rely upon including the report completed by FEMA which identified dam safety research topics and further reports that detailed the specific research needs for each of the previously identified topics.

There are many dam owners, organizations and researchers working on various topics. Our vision would be for USSD and ASDSO to contact these organizations and coordinate an effort on the common needs related to dam safety research. It would be advantageous to pool funding for common goals and research projects. This would allow research conducted in the most efficient manner possible and to obtain results that would eventually be most beneficial to the dam safety community. I also recommend that we include the National Dam Safety Review Board (NDSRB) be part of this effort. Both of our organizations already have representatives on the NDSRB. There are various research topics underway from various organizations that would benefit from better coordination on a national scale. In addition, there are significant resources being expended to rehabilitate dams that could benefit from further research. As an example and as you outlined, this includes

1. Risk based analysis including perspectives from dam owners and regulators.
2. Hydrologic issues including Possible Maximum Precipitation and the potential application of risk based approaches to hydrology. Basin modeling.
3. Dynamic strength characteristics of large size particles and residual strengths.

As mentioned in your letter I concur; we can best serve the dam safety community through the following steps:

1. Identify the participants including potential sponsors of research
2. Identify entities interested in and already conducting or embarking on research related to dam safety.
3. Identify needed research topics using work already completed by FEMA
4. Select research
5. Coordinate funding to pool dollars for research selected
6. Oversee the completion of research topics
7. Sponsor events presenting research completed

I look forward to meeting with you, USSD members and other interested parties at the ASDSO national conference in September to discuss these issues.

I will work with Mr. Ferguson to detail an agenda, identify participants and begin this effort. I look forward to this collaboration between our two organizations on this very important topic.

Sincerely



David Gutierrez, President
Association of State Dam Safety Officials

Cc Larry Stephens, Executive Director USSD; Keith Ferguson, USSD Member; Ken Steel, Past President and Director USSD; John Moyle, President Elect ASDSO; Lori Spragens, Executive Director, ASDSO