

Dam Safety E-Newsletter



NJDEP BUREAU OF DAM SAFETY
Office of Dam Safety and Flood Engineering




Spring 2023

National Dam Safety Awareness Day: May 31, 2023

National Dam Safety Awareness Day was created to memorialize the South Fork Dam failure in Johnstown, Pennsylvania that occurred on May 31, 1889. This dam failure was the worst dam-related disaster in the history of the United States where over 2,200 lives were lost. We encourage all dam safety stakeholders to educate themselves on best practices for dam safety by promoting the lessons learned from dam failures. Best practices have been developed on a national level to address the need to accurately and consistently warn against potentially hazardous conditions resulting from the general operation of dams (see [FEMA's Dam Safety Warning Signs Best Practices](#)).

In addition to community outreach and education, Dam Safety Awareness Day also highlights the increasing number of dams that are in need of rehabilitation due to deterioration, changes in land use, and updated design standards. The Association of State Dam Safety Officials (ASDSO) recently posted a 2023 report on the staggering cost of dams that are in need of upgrades throughout the nation - [click here for the report](#). Based on the study detailed in the report, ASDSO estimates the cost to rehabilitate the nation's non-federal dams at \$157.5 billion, with \$34.1 billion needed just for the most critical dams. Estimated costs for dam rehabilitation have significantly increased since ASDSO's last report (2022), which estimated the costs at \$75.7 billion for all non-federal dams and \$24 billion for high hazard potential dams. ASDSO developed this report to inform national and state policy decisions as well as to provide the public and the media with a high-level understanding of the national dam rehabilitation need in terms of estimated costs.

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Security and Protection of Dams and Levees Workshop – Linden, NJ

The Cybersecurity and Infrastructure Security Agency (CISA), as the Sector Risk Management Agency for the Dams Sector, will be hosting a two-day Security and Protection of Dams and Levees Workshop. The workshop will take place on June 27-28, in Linden, NJ. Register (required) through June 20 at this [link](#).



This workshop is designed for dam owners/operators, professional staff of dam safety and dam security programs, emergency managers, and other safety, security, and incident management personnel with roles and responsibilities relevant to dams and related infrastructure. The workshop combines traditional lectures with multiple group discussions and activities to reinforce the concepts learned during the course. Registration will close on June 20, 2023. Upon registering, confirmed attendees will receive full logistics information, including the workshop location and the requirements for receiving course credit from the FEMA Emergency Management Institute. While the workshop is offered at no cost, students are responsible for arranging and costs related to transportation, housing, and meals. For additional information, contact the Dams Sector Management Team at DamsSector@cisa.dhs.gov.

Dam Owners Workshop: June 7, 2023

The Association of State Dam Safety Officials (ASDSO), in conjunction with the NJ Department of Environmental Protection, Bureau of Dam Safety, is hosting a one-day Dam Safety Workshop for Owners and Operators as well as any engineers with an interest in dam safety. The workshop will be offered on June 7, 2023 at the Robert Wood Johnson Conference Center in Hamilton, New Jersey.

This workshop is intended to be an owner-friendly look at dam engineering to help owners/operators recognize problems and emergency situations, improve operations, and perform or schedule preventive maintenance. Attendee check-in will begin at 8am and the workshop will run from 8:15am to 4:00pm. Lunch and refreshment breaks are included in the registration fee. Information will be available throughout the day and you will have the opportunity to meet and network with your state dam safety officials, well-known experts in the field of dam safety, and other dam owners. Materials and resources will be available in advance for registered attendees. All attendees must register by June 1, 2023 (walk-ins are not allowed). Please register online at <https://damsafety.org/DamSafety.org/NJ23>.

This one-day workshop will educate dam owners and operators about the following topics:

- ◆ *State Dam Safety Program*
- ◆ *Basic Dam Terminology and Design Options*
- ◆ *Seepage through Dam Embankments*
- ◆ *Erosion and Other Common Problems*
- ◆ *Dam Engineering Case Studies of Past Problems*



Dam Safety Loan Appropriation

The Department conditionally approved approximately \$28.7 million in funding through the Dam Restoration Loan Program for 19 projects (18 dam restoration projects and one lake dredging project). The NJ State Legislature is currently working to appropriate funds and once the funds are made available, the Department will coordinate loan agreements with the loan recipients for the design and construction necessary to complete the projects.

The funding is made available through the Dam Restoration and Inland Water Projects Loan Program, in accordance with the “Green Acres, Clean Water, Farmland and Historic Preservation Bond Act of 1992,” and the Dam Restoration Loan Program in accordance with the “Dam, Lake, Stream, Flood Control, Water Resources, and Wastewater Treatment Project Bond Act of 2003.” The fund, developed pursuant to the bond act, is a revolving fund. Loan repayments are deposited into the fund for future use. Projects to be funded are selected based upon a priority ranking procedure and the amount of monies available at the time. At this time, it is estimated that the Department will be able to open the next application period in 2024. The Notice of Availability of Loan Funds and Application Deadline will be published in the New Jersey Register and on the Bureau of Dam Safety Web Site when available.

To learn more about the Dam Restoration Loan Program, please visit the Bureau’s website [here](#).

New Jersey Emergency Preparedness Conference



The 24th Annual New Jersey Emergency Preparedness Conference took place at the Hard Rock Hotel in Atlantic City, New Jersey the week of April 17, 2023 and featured multi-disciplinary training seminars, breakout sessions, and networking with emergency response professionals from New Jersey. The Bureau provided a wealth of information to conference attendees about dam safety in New Jersey and received excellent remarks from guests at their information booth.

The Bureau plans to participate in the conference again next year to continue to promote dam safety and effective emergency action planning for dams in New Jersey.



NJDEP Take Your Kids to Work Day

On April 27th, the New Jersey Bureau of Dam Safety participated in “Take Your Kids to Work Day” with a dam safety program for school aged children. The program consisted of a presentation about dam safety and a model demonstration to show how dams work. The demonstration included a hydropower demonstration in which a water-wheel was used to power a flashlight. The dam model was also used to simulate a hydraulic roller to demonstrate the dangers associated with low head dams. The children then formed into groups and built their own embankment dams using a variety of materials including clay, sand, and soil. This is the Bureau’s 14th year presenting this program and approximately 60 children attended this year’s event.



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Low Level Outlets

A low level outlet or “lake drain” is a necessary feature for all dams that allows safe lowering of the impoundment should serious problems ever occur which threaten the integrity of the dam. Drawdown requirements for dams in New Jersey are outlined in the New Jersey Dam Safety Standards (N.J.A.C. 7:20-1.9(i)). Common types of low level outlet systems include, but are not limited to, valved conduits through embankments, gates, valves, or stoplogs on primary spillway structures, and siphons. All low level outlets must be routinely operated and maintained properly to ensure that the system will function when it is needed, particularly for emergency situations. It is recommended that low level outlet systems are exercised (opened and closed fully) annually at minimum, but preferably multiple times a year. Seized gates or valves, deteriorated stems/guides, and sediment build-up are all common problems associated with low level outlets that require attention in order to ensure operability. It must be noted that low level outlet controls (gates, valves, etc.) should be located upstream of the centerline of the dam. Pressurized pipes through dam embankments may increase the likelihood of seepage through pipe joints and could potentially create internal erosion issues leading to an uncontrolled release of the impoundment and dam failure. Other configurations of existing low level outlet works may require modifications for accessibility, drawdown capacity, and/or security. For all dams, the importance of a functional low level outlet system cannot be overstated as its successful operation could save the dam from failure during an emergency situation.





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Helpful Dam Safety Links

[Association of State Dam Safety Officials](#)

[Responsible Dam Ownership](#)

[Living With Dams](#)

[FEMA - National Dam Safety Program](#)

[Bureau of Reclamation - Dam Facilities](#)

[U.S. Army Corps of Engineers](#)

Visit our website at www.nj.gov/dep/damsafety/

