

# Maryland Dam Safety Update



**Maryland**  
Department of  
the Environment

Issue 1, May 2017



*Dams provide many benefits for Maryland's citizens; however, dams can also be a great threat to the safety and well being of downstream property and people if they are not properly constructed or maintained. Maryland has been assuring the safety of dams since 1934.*

## Maryland Acknowledges National Dam Safety Awareness Day on May 31st

A dam may provide many benefits, such as storing drinking water and improving wildlife habitat but if it fails it can cause catastrophic damage downstream. If you own a dam or perform engineering or maintenance services for dam owners, you should know the

risks, understand the roles of the organizations that work to keep dams safe, and proactively seek out training and educational opportunities to ensure you are familiar with current best practices.

National Dam Safety Awareness Day was established to

memorialize the devastation that occurred on May 31, 1889, when the South Fork Dam in Johnstown, Pennsylvania failed. This tragic event resulted in the deaths of 2,200 people and left thousands homeless – the worst dam failure in the history of the United States.

To learn more about Maryland's Dam Safety Program and to review technical references, permitting information, dam safety guidelines and policies and Emergency Action Plan templates visit

[mde.maryland.gov/damsafety](http://mde.maryland.gov/damsafety)

### National Dam Safety Awareness Day

*Dam Safety is a Shared Responsibility*



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## Dam Safety Training Opportunities

ASDSO Webinar: Introduction to Embankment Dams

June 13 [damsafety.org](http://damsafety.org)

ASDSO Seminar: HEC-HMS

June 27-29 Austin, TX

ASCE Seminar: Dam Breach Analysis Using HEC-RAS

June 28-30 Boston, MA

ASDSO Webinar: How to Make Your Emergency Action Plan More Effective

July 11 [damsafety.org](http://damsafety.org)

ASDSO Seminar: Soil Mechanics for Earth Dam Design and Analysis

July 26-28 Denver, CO

ASDSO Seminar: Inspection and Assessment of Dams

August 1-3 Salt Lake City, UT

ASDSO Dam Safety 2017 National Conference

Sept. 10-14 San Antonio, TX

AEG Annual Meeting

Sept. 10-17 Colorado Springs, CO

ASDSO Webinar: Design of Siphon Systems

October 10 [damsafety.org](http://damsafety.org)

***MDE Dam Safety Staff are available to provide technical assistance for your dam. Contact our staff individually by email, or call 410-537-3538.***



Photo Credit: Executive Office of the Governor

## Legislation Update: How Does HB 125 Affect Dam Owners?

Recent dam failures in the Carolinas in 2015 and 2016, and the ongoing incident at Oroville Dam in California highlight the need for dam owners, operators and emergency responders to have an effective and actionable plan in place to provide for notification of the downstream populations and for reducing loss of life and damage that result from a dam failure. While dams can be a significant public asset, they also pose a significant risk to downstream populations.

Accordingly, in the interest of public safety, Governor Larry Hogan signed House Bill 125 (HB125) into law in Annapolis on Thursday May 4, 2017. HB125 adds language to The Annotated Code of Maryland Environment Article, Section 5-503.1 to require owners of Significant and High Hazard dams to prepare and submit to the Department for approval an Emergency Action Plan (EAP), and to perform functional exercises of the EAP at least once every five (5) years. These requirements have been included as conditions in the permits issued by the Dam Safety Division since 2007; however, this change to Section 5-503.1 expands the requirements to all owners of High and Significant Hazard dams.

The bill, which went into effect immediately upon signature, requires the following from owners of High and Significant Hazard dams:

- Prepare and submit to the Department for approval a new or updated EAP no later than August 1, 2017;
- Upon approval, distribute the EAP to appropriate state and local emergency management agencies;
- Beginning in 2018, make annual updates to the EAP by May 1 and submit to the Department for approval; and
- Conduct a functional exercise or test of the approved EAP at least once every five (5) years.

The Dam Safety Division will be notifying dam owners of the status of their EAP, necessary actions to comply with the new law, and to provide technical assistance in the review of existing EAPs this month. For owners of Significant or High Hazard dams without an EAP, it is strongly recommended to engage a qualified engineering consultant to prepare a dam break analysis as soon as possible to ensure that the work can be completed by the August 1 deadline.

The Dam Safety Division offers a template EAP document online that, if completed properly, will comply with the requirements of the new law. This and numerous technical resources can be found online at: [mde.maryland.gov/programs/water/DamSafety/](http://mde.maryland.gov/programs/water/DamSafety/)

The full text of the bill is available for viewing at: <http://mgaleg.maryland.gov/2017RS/bills/hb/hb0125e.pdf>

Please do not hesitate to contact the Dam Safety Division if you have a question regarding HB125.



## Spring/Summer Maintenance

May is a good time to perform regular maintenance and repairs at your dam. In particular, the Department recommends that:

- Grass is mowed and woody vegetation is removed before significant new growth appears;
- Embankments are checked for unusual conditions such as seepage, slumps, unusually lush vegetation, erosion or animal burrows;
- Concrete structures are checked for cracks, leaks or movement;
- Trash racks are kept clear of debris that may have accumulated during high spring flows;
- Valves are exercised and lubricated as needed to ensure proper working order; and
- Emergency Action Plans are updated

Rigorous maintenance programs are often necessary to ensure that conditions at a dam do not deteriorate over time. If you find a condition that needs attention, the Dam Safety Division is available to provide advice on next-steps.



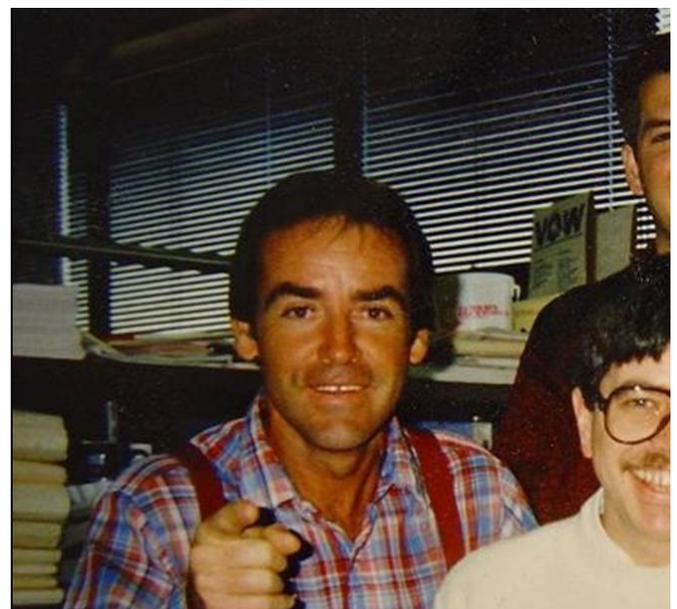


## Bruce Harrington Retirement

After 39 years of service to the citizens of Maryland, Bruce Harrington has announced he will be retiring as of July 1, 2017.

Bruce is the senior hydrologic and hydraulic engineer for the Dam Safety Division, and is regarded as an expert in dam break studies and emergency action planning. Prior to joining the Dam Safety Division in 1988, Bruce was a Water Resources Engineer in the Stormwater Management Division of Maryland Department of Natural Resources, where he helped develop regulations, model ordinances, design manuals and related material for stormwater management and control.

All are invited to attend a Retirement Celebration at Sandy Point State Park on Wednesday June 28th from 11am to 3pm. Cost is \$25 per person (food, desserts, drinks). Please RSVP by June 15th to Kristen Jones. Email: [Kristen.Jones@Maryland.gov](mailto:Kristen.Jones@Maryland.gov) or 410-537-3543



## Preparing for Severe Weather Events

Current forecasts for the Atlantic Hurricane Season indicate an above-average season, (11-17 named storms, 5-9 hurricanes with 2-4 major hurricanes) with more activity than observed in 2016. This forecast assumes a weak El Nino development. A stronger El Nino typically suppresses tropical storm development.

While Maryland has been relatively unscathed by hurricanes, the state has seen a number of severe weather events in recent years - including rain events in Ellicott City and Wicomico County in 2016, Clear Spring in 2014 and others. These storms produced *1000-year rainfall* amounts over a limited area, which severely stressed multiple dams and resulted in a number of failures.

***Remember – past performance of your dam does not guarantee future success in these severe weather events!***

As a dam owner, you can take some proactive steps to help increase the chances that your dam will perform acceptably in severe weather:

- Be proactive, monitor weather and river basin forecasts. The National Weather Service provides a number of forecasting products:
  - Local: [weather.gov](http://weather.gov)
  - Rivers and Lakes: [water.weather.gov/ahps/](http://water.weather.gov/ahps/)
  - Hurricanes: [nhc.noaa.gov/](http://nhc.noaa.gov/)
- Invest in routine maintenance and repair. Don't let short-term band aid fixes become long-term repairs.
- Understand, update and practice using your Emergency Action Plan.
- Ensure trained and knowledgeable staff is on-call to periodically monitor dam performance during and after a storm event.
- Where significant precipitation is forecast days in advance, begin lowering the pool level before the storm hits.

More information can be found in the ASDSO produced document *Living With Dams: Extreme Rainfall Events*

[http://www.damsafety.org/media/Documents/DownloadableDocuments/Living\\_WithDams\\_ExtremeRainfallEvents.pdf](http://www.damsafety.org/media/Documents/DownloadableDocuments/Living_WithDams_ExtremeRainfallEvents.pdf)

