

# **Division of Dam Safety**

## **General Permit Program for Low Hazard Dams**

Andrea Henry, PE  
Chief Engineer

October 2025

# Webinar Overview

Who we are

What we  
regulate

Permits vs.  
Certificates

Types of Low  
Hazard Dams

Owner  
responsibilities

# VA Dam Safety Program Objectives

## Regulatory Compliance

- Submittal review
- Site visits
- Strategic planning
- Renewal reminders

## Training/Outreach

- Guidance documents
- Dam owner training
- Regulatory updates
- Site visits
- Municipal partnerships

## Enforcement

- Notice of Violation
- Corrective action

## Inventory Management

- Screening-level hazard assessments
- Desktop condition assessments
- DSIS/VFRIS
- Inundation map digitization

## Funding Support

- Dam Safety grants
- FEMA grants
- Simplified studies

## Emergency Response

- EAP/EPP template
- Preliminary emergency plans
- Table-top exercises
- EOC staffing / VDEM collaboration

# Dam Safety Regions and Contacts

## REGION 1

Andrea Henry, P.E.\*  
Chief Engineer  
Division of Dam Safety  
600 E. Main St., 24<sup>th</sup> Floor  
Richmond, VA 23219  
804-584-0033  
Andrea.Henry@dcr.virginia.gov

\*Until vacancy is filled

## REGION 2

Brenton Payne, P.E.  
Regional Dam Safety Engineer  
600 E. Main St., 24<sup>th</sup> Floor  
Richmond, VA 23219  
804-786-1359  
Brenton.Payne@dcr.virginia.gov

## REGION 3

Scott J. Thomas, P.E.  
Regional Dam Safety Engineer  
600 E. Main St., 24<sup>th</sup> Floor  
Richmond, VA 23219  
804-229-2610  
Scott.Thomas@dcr.virginia.gov

## REGION 4

Steven Bricker, P.E.  
Regional Dam Safety Engineer  
220-C East Main Street  
Radford, VA 24141  
804-363-0992  
Steven.Bricker@dcr.virginia.gov

## REGION 5

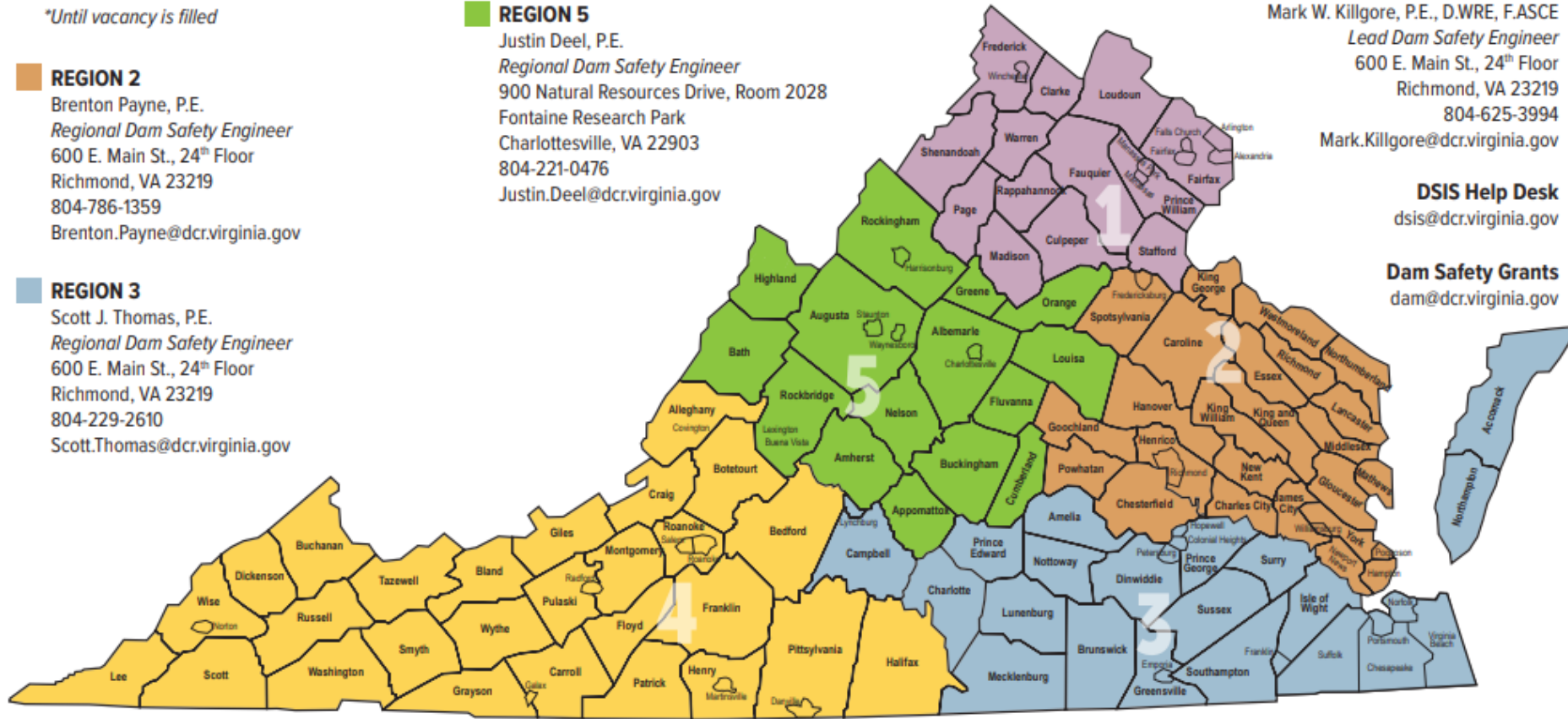
Justin Deel, P.E.  
Regional Dam Safety Engineer  
900 Natural Resources Drive, Room 2028  
Fontaine Research Park  
Charlottesville, VA 22903  
804-221-0476  
Justin.Deel@dcr.virginia.gov

Andrea Henry, P.E.  
Chief Engineer  
Division of Dam Safety  
600 E. Main St., 24<sup>th</sup> Floor  
Richmond, VA 23219  
804-584-0033  
Andrea.Henry@dcr.virginia.gov

Mark W. Killgore, P.E., D.WRE, F.ASCE  
Lead Dam Safety Engineer  
600 E. Main St., 24<sup>th</sup> Floor  
Richmond, VA 23219  
804-625-3994  
Mark.Killgore@dcr.virginia.gov

DSIS Help Desk  
dsis@dcr.virginia.gov

Dam Safety Grants  
dam@dcr.virginia.gov





# VA Dam Safety Program

## **Purpose:**

To provide for proper and safe design, construction, operation and maintenance of dams to protect public safety. This includes ensuring the integrity and viability of dams such that they do not present an unacceptable risks to the public, property, and the environment.

## **Implementation:**

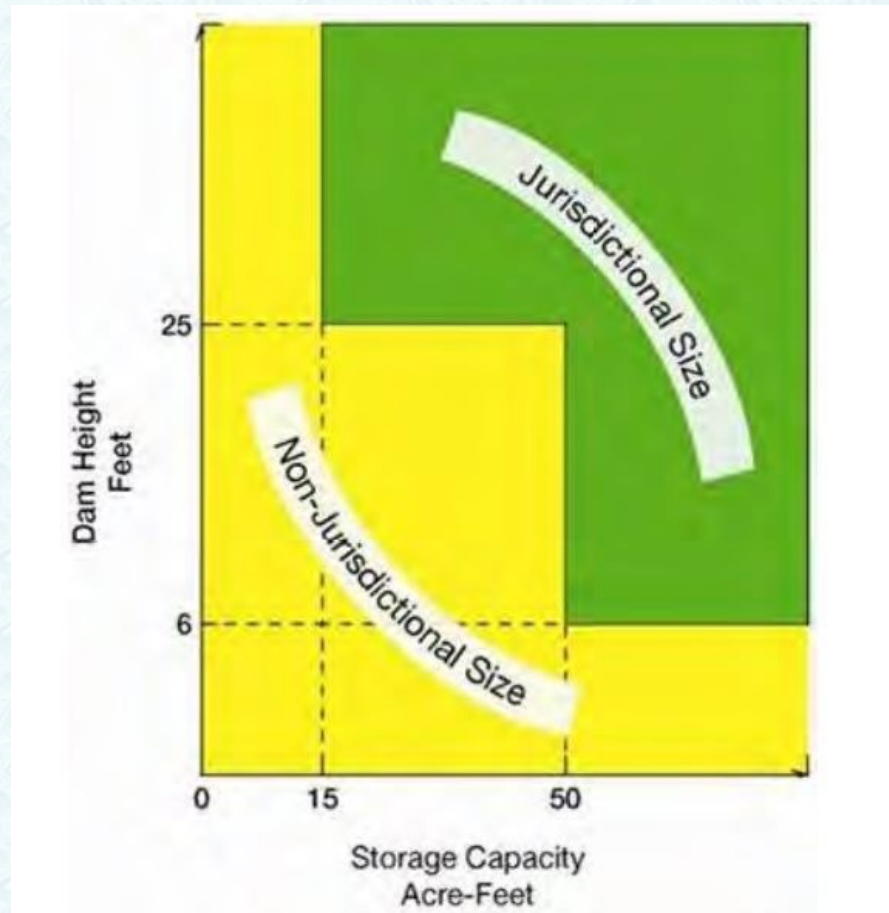
### Dam Safety Act

- Code of Virginia, Title 10.1, Chapter 6, Article 2
- <https://law.lis.virginia.gov/vacodefull/title10.1/chapter6/article2/>
- General permit language – 10.1-605.2

### Impounding Structure Regulations

- Virginia Administrative Code, Title 4, Agency 50, Chapter 20
- [www.dcr.virginia.gov/dam-safety-and-floodplains/document/ds-va-code-4vac50-20-10.pdf](http://www.dcr.virginia.gov/dam-safety-and-floodplains/document/ds-va-code-4vac50-20-10.pdf)
- General Permit Language – 4VAC50-20-500

# VA Dam Safety Program – What We Regulate



## Exceptions:

Non-jurisdictional size

Agricultural exemption

Federally owned/licensed

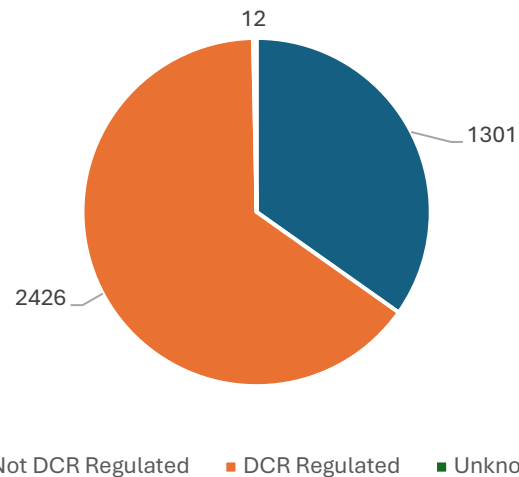
Mining purposes

Purposeful canal obstruction (lowering/raising water elevation)

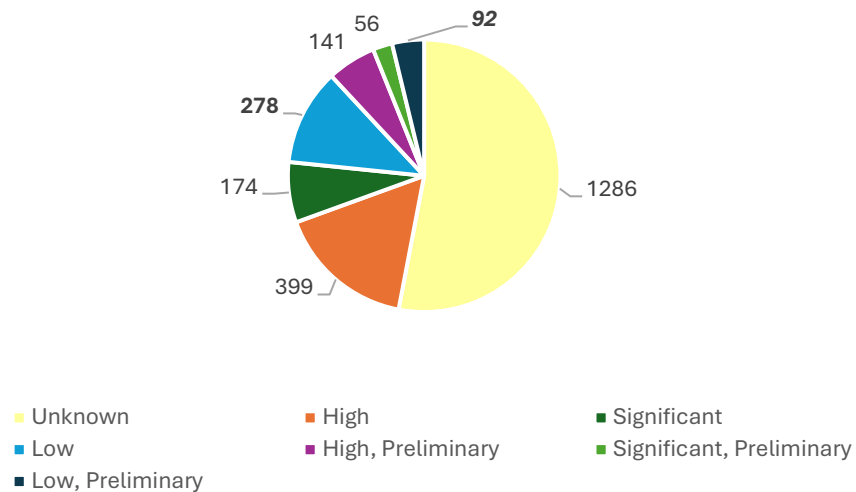
Storage of treated water

# Dam Safety Quarterly Reporting - FY26 Q1

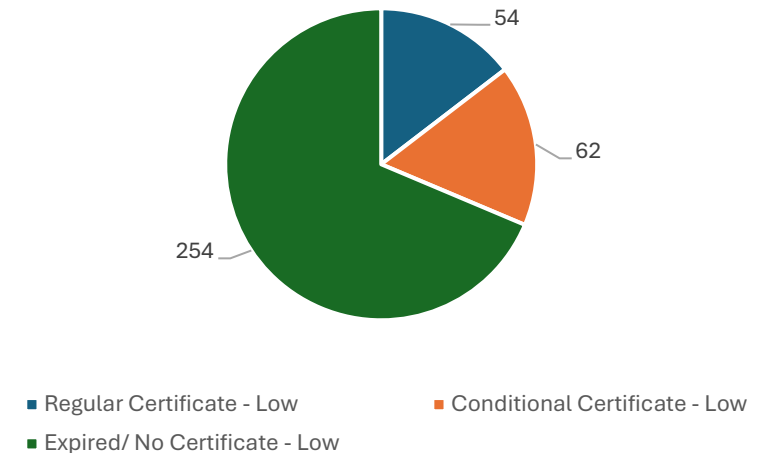
## Total DSIS Dams



## Hazard Classification



## Compliance Status



# VA Dam Safety Program – Hazard Class

## Hazard Potential Classification of Dams:

4VAC50-20-40

- Dams are classified with a hazard potential depending upon the downstream losses anticipated in event of failure.
- Hazard potential is unrelated to the structural integrity of a dam. Rather it is directly related to potential adverse downstream impacts should the given dam fail.
- HIGH - dams that upon failure would cause probable loss of life or serious economic damage.
- SIGNIFICANT - dams that upon failure might cause loss of life or appreciable economic damage.
- LOW - dams that upon failure would lead to no expected loss of life and minimal economic damage.



# Regular O&M Certificate vs. General Permit

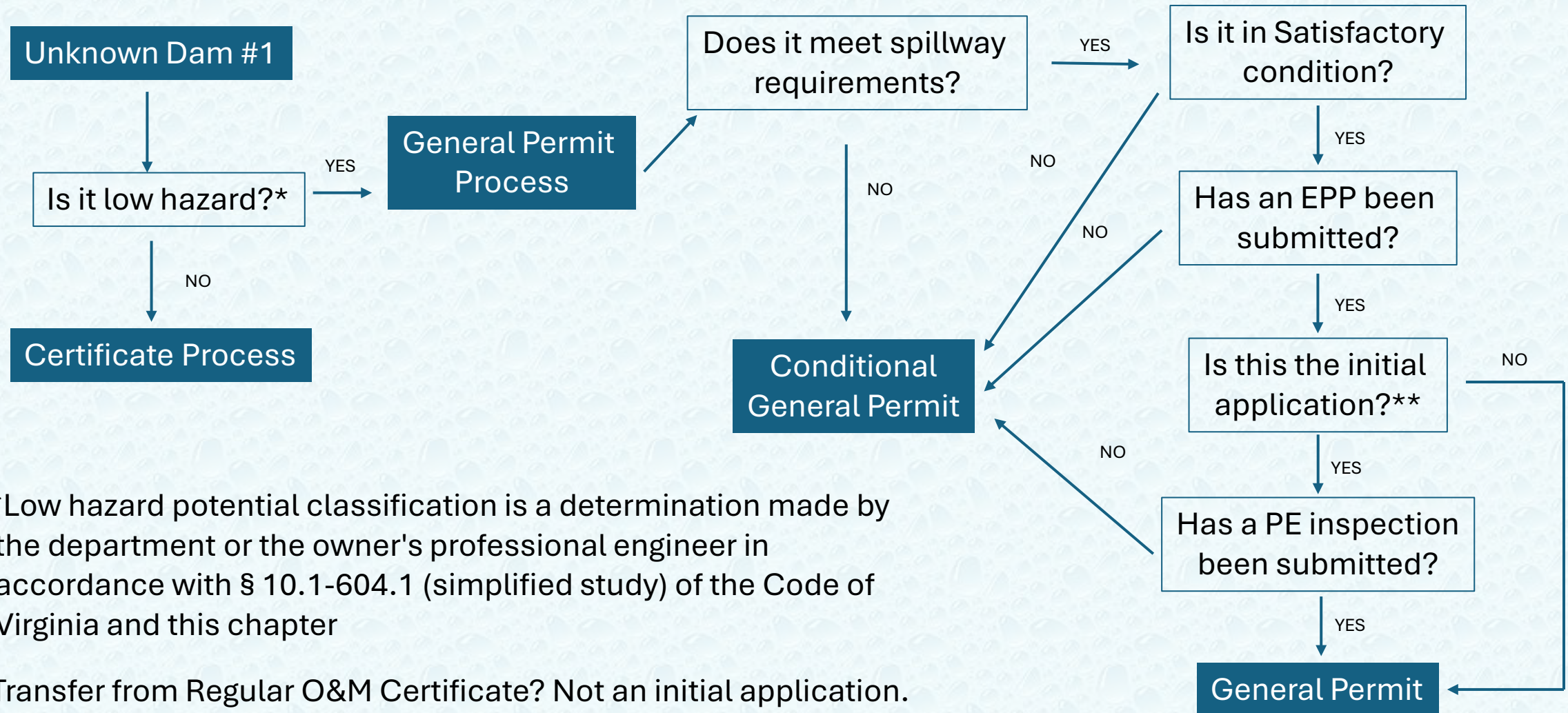
## Regular Certificate

- Certificate Term = 6 years
- Certificate Fee = \$300
- Requirements
  - EPP
  - Inundation maps
  - Inundation study
  - Spillway conveyance (100-yr/none)
  - Operation & Maintenance Plan
  - PE inspection (last 6 years)
  - Owner inspection (last year)
  - Dam condition = Satisfactory\*
  - Application w/ PE signature

## General Permit

- Permit Term = 6 years
- Permit Fee = \$300
- Requirements
  - EPP (simplified, owner-developed)
  - Inundation maps (as needed)
  - Inundation study (as needed)
  - Spillway conveyance (100-yr/50-yr/none)
  - Operation & Maintenance Plan (upon request)
  - PE inspection (upon first application)
  - Owner inspection (upon request)
  - Dam condition = Satisfactory\*
  - Registration statement w/ Owner signature

# General Permit: Approval Decision Tree





# Conditional General Permit

- Permit Term = 2 years maximum
- Permit Fee = \$200
- Requirements
  - DSIS fillable form
- Renewal
  - Written justification of extension
  - Additional time needed
  - Permit fee
  - Substantial and continual progress towards compliance
- Transition from Conditional Certificate to General Permit
  - PE inspection within last 2 years

## \*EXAMPLE LANGUAGE\*

This Conditional Operation and Maintenance Certificate is issued because the dam does not satisfy the current Regulations. The condition(s) that must be corrected to qualify for a Regular Operation and Maintenance Certificate is(are):

- Preliminary Engineering Report - Based on dam deficiencies noted in the annual inspection report by engineer dated 04/14/22, provide a preliminary engineering report (PER) using the DCR Dam Safety Inventory System (DSIS) to show what corrective actions, repairs and/or remediations that are necessary or will need to be performed at the dam to address existing emergency spillway damage, damage to the outlet conduit pipe through the dam embankment, animal burrows, and trees and woody vegetation. In addition, assess the feasibility of implementation of a low-level drain device for this existing regulated impounding structure consistent with the provisions of Section 4VAC50-20-280 of the Virginia Impounding Structure Regulations and DCR guidance document DCR-VSWCB-046. **To be completed by Wednesday, December 31, 2025.**
- Alteration Permit - Apply for an Alterations Permit using the DCR Dam Safety Inventory System (DSIS) to address noted deficiencies and subsequent corrective actions, repairs and/or remediations needed for the dam as outlined in the submitted and DCR reviewed and approved preliminary engineering report (PER). The Alterations Permit application shall be in accordance with Sections 4VAC50-20-60 and 4VAC50-20-80 of the Virginia Impounding Structure Regulations and DCR Form 199-101. **To be completed by Friday, July 31, 2026.**
- Certificate Renewal - Apply for renewal of this two-year conditional operation and maintenance certificate within ninety (90) days of expiration of the certificate, using the DCR Dam Safety Inventory System (DSIS) and DCR Forms 199-099 and 199-192 as appropriate, and in accordance with the provisions of Sections 4VAC50-20-105, 4VAC50-20-150, 4VAC50-20-350, 4VAC50-20-380, and 4VAC50-20-390 of the Virginia Impounding Structure Regulations (as applicable). **To be completed by Monday, August 31, 2026.**

This certificate is for a term of two years, effective Saturday, November 30, 2024 and expires Monday, November 30, 2026.

# Types of Low Hazard Dams

## Tier 1: “Exempt” Low Hazard Dam, Low Special – 4VAC50-20-501

- Economic damage is limited to own property (PE certification)
- No spillway conveyance requirement
- No emergency preparedness plan (EPP), only notification responsibilities
- No permit fee

## Tier 2: Low Hazard Dam – 4VAC50-20-503

- No critical infrastructure/primary highway/public utility access
- Spillway conveyance requirement = 50-YR (approval required)

## Tier 3: Low Hazard Dam – 4VAC50-20-503


- Spillway conveyance requirement = 100-YR



# Emergency Preparedness Plan (EPP)

## 4VAC50-20-177

- Submit to:
  - DCR (via DSIS)
  - VDEM (via email)
  - Local emergency management coordinator
- Content:
  - Dam information
  - Owner information
  - Local emergency management information
  - Named observer and alternate
  - Roadways downstream
  - Stage triggers (depth above spillway crest)
  - Staff gauge location
  - Observation intervals
  - Access route
- Not included
  - Precipitation triggers
  - Inundation maps



Date Prepared: \_\_\_\_\_  
Prepared By: \_\_\_\_\_

**EMERGENCY PREPAREDNESS PLAN FOR LOW HAZARD  
VIRGINIA REGULATED IMPOUNDING STRUCTURES**

Reference: Impounding Structures Regulations, 4VAC 50-20-10 et seq., including 4VAC 50-20-177, Virginia Soil and Water Conservation Board

1. Name of Impounding Structure: \_\_\_\_\_  
Inventory Number: \_\_\_\_\_ City/County: \_\_\_\_\_  
Other Name (if any): \_\_\_\_\_  
Stream Name: \_\_\_\_\_  
Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

2. Name of Owner: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: (Residential) \_\_\_\_\_ (Business) \_\_\_\_\_  
Email: \_\_\_\_\_  
(Note: 24-hour telephone contact required)

3. Name of Impounding Structure Operator/Observer: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: (Residential) \_\_\_\_\_ (Business) \_\_\_\_\_  
Email: \_\_\_\_\_  
(Note: 24-hour telephone contact required)  
Name of Alternate  
Operator: \_\_\_\_\_  
Telephone: (Residential) \_\_\_\_\_ (Business) \_\_\_\_\_  
Email: \_\_\_\_\_  
(Note: 24-hour telephone contact required)


4. City/County Emergency Services Coordinator(s): \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Other means of communication: \_\_\_\_\_  
(Note: 24-hour telephone contact required)

5. If available, attach a simple dam break inundation map, demonstrating the general inundation that would result from an impounding structure failure.

If there are public roads downstream from the impounding structure, identify by highway number and distance below dam:

Route # \_\_\_\_\_ , \_\_\_\_\_ Miles  
Route # \_\_\_\_\_ , \_\_\_\_\_ Miles

Route # \_\_\_\_\_ , \_\_\_\_\_ Miles  
Route # \_\_\_\_\_ , \_\_\_\_\_ Miles



(DCR199-103) (08/25)Page 1 of 3

# Owner Inspection

## When to inspect?

- Annually
- Post-event
- Post-alteration

## Preparation Tips

- Mow
- Review last inspection report
- Bring a camera and measuring tool
- Don't open a low-level drain without a plan!

### **Dam Owner Academy — ASDSO's Dam Owner Education Video Series**

The Dam Owner Academy is a series of videos to educate and inform owners on all aspects of operating and maintaining a dam safely. The videos concisely present the critical basics of owner responsibilities and are available as a free resource for owners and those conducting owner outreach programs. Over the next few years, ASDSO will release additional videos and tools as part of the Dam Owner Academy. Many of the videos will correspond with ASDSO's dam owner fact sheets (below). For future videos, make sure to subscribe to [ASDSO's Youtube Channel](#) and this webpage.



# General Permit – Registration Statement

- Certification from the owner that the impounding structure is:
  - (i) classified as low hazard potential pursuant to a determination by the department or the owner's professional engineer in accordance with § 10.1-604.1 of the Code of Virginia and this chapter;
  - (ii) to the best of the owner's knowledge, properly and safely constructed;
  - (iii) currently has no observable deficiencies (or if deficiencies exist, such deficiencies shall be corrected in a timeframe and manner acceptable to the Department); and
  - (iv) shall be maintained and operated in accordance with the provisions of the general permit.



# Hazard Creep – What To Know

**Low Hazard Dam + 1 downstream development = High Hazard Dam**

## 4VAC50-20-503.7

In order to qualify for the protections established in § 10.1-606.3 of the Code of Virginia, the owner shall file a dam break inundation zone map developed in accordance with 4VAC50-20-54 or provides the limits of the dam break inundation zone in an acceptable electronic format in accordance with 4VAC50-20-54 with the department and with the offices with plat and plan approval authority or zoning responsibilities as designated by the locality for each locality in which the dam break inundation zone resides.

## 10.1-606.3

If the Department determines that the plan of development would change the spillway design flood standards of the impounding structure, the locality shall not permit development as defined in § [15.2-2201](#) or redevelopment in the dam break inundation zone unless the developer or subdivider agrees to alter the plan of development so that it does not alter the spillway design flood standard required of the impounding structure or he contributes payment to the necessary upgrades to the affected impounding structure pursuant to § [15.2-2243.1](#).



# Simplified Study Program for Low Hazard Dams



## TIER 2 SIMPLIFIED FLOOD INUNDATION STUDY FOR LOW HAZARD DAMS

### Cole Dam #1

Inv. No: 047018

Culpeper County, Virginia



Vicinity Map

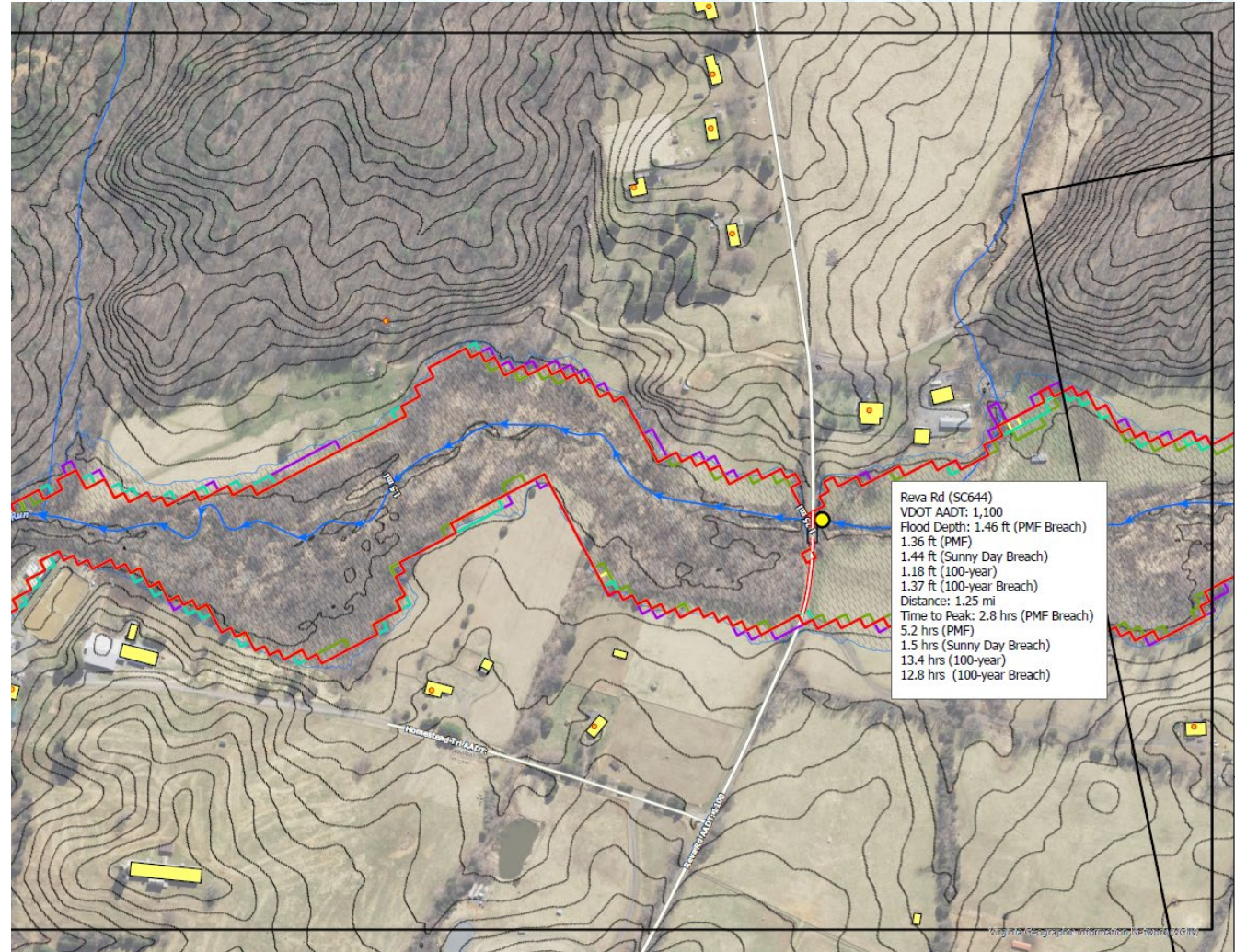


Aerial Map

August 2025

Shiblu Sarker, Ph.D., P.E.

Mapping Engineer/Dam Safety Modeler  
DEPARTMENT OF CONSERVATION AND RECREATION  
DIVISION OF DAM SAFETY AND FLOODPLAIN MANAGEMENT  
600 EAST MAIN STREET, 24TH FLOOR  
RICHMOND, VIRGINIA 23219  
[shiblu.sarker@dcr.virginia.gov](mailto:shiblu.sarker@dcr.virginia.gov)



VIRGINIA DEPARTMENT OF CONSERVATION & RECREATION  
DIVISION OF DAM SAFETY  
600 EAST MAIN STREET, 24TH FLOOR  
RICHMOND, VIRGINIA 23219

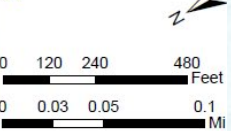
Simplified Dam Break Inundation Study  
Cole Dam #1 (VA-047018)  
MIDDLESEX COUNTY, VA  
INUNDATION MAP - SHEET 3

Notes:  
1. The information contained in this map is prepared for use in the notification of downstream property owners by emergency management personnel.  
2. Limits based on simplified mapping assumptions. Mapping of flooded areas and flood wave travel times are approximate. Timing and extent of actual inundation may differ from the information presented on this map.  
3. DCR makes no warranty or guarantee and assumes no liability for any damages due to errors, omissions, or positional accuracy in this product.  
4. Abbreviations: Probable Maximum Flood (PMF), Spillway Design Flood (SDF), Special Flood Hazard Area (SFHA).

1" PMF without breach and with breach occurrence occurs approximately 1 Mi downstream of the dam (i.e., before the Outlet)

#### LEGEND

- ☆ Dam Point
- SR Contour
- 100-yr SFHA
- Sunny Day Breach
- 100-yr
- 100-yr with Breach
- PMF Breach
- PMF (6 HR PMP)
- Outlets





# Virginia Flood Risk Information System (VFRIS)

A Commonwealth of Virginia Website

Virginia.gov Find an Agency

DCR VFRIS - Virginia Flood Risk Information System

Home Map Help & Downloads

Find address or place

Flood Tool Layers Legend

- ☒ Inundation Zones (Detailed)
- ☒ Inundation Zones (Simplified)
- ☒ Dam Watersheds
- ☐ RAS Downloads and FIRM Info Layers
- ☒ NFHL Layers
  - ☒ FIRM Panels
  - ☒ Political Jurisdictions
  - ☐ LOMRs
- ☐ NFHL Cross Sections
- ☐ NFHL Baselines
- ☒ NFHL Hydraulic Structures
- ☒ NFHL Coastal
- ☐ NFHL Water Layers
- ☐ NFHL Gages and

Map showing Zone A and Zone B inundation areas. A dam is labeled 047006 - Mountain Run Dam #18, located 4.37 Mi from the inundation area. A scale bar indicates 200 m.

Zoom to

#047006 - Mountain Run Dam #18

Class: High; Condition: Satisfactory

CertApprvDate	January 30, 2020
CertExpDate	January 30, 2026
CertStatus	Approved
CertType	Regular Operation and Maintenance Certificate
ContactID	12,664
County	Culpeper County
DamName	Mountain Run Dam #18
DamType	Earth-Primary
DateSealed	April 12, 2012

Virginia Geographic Information Network (VGIN) | Federal Emergency Management Agency | Virginia Department of Transportation | Powered by Esri



# Summary of Owner Responsibilities

Once you have a general permit:

- ➡ Make frequent observations of the dam.
- ➡ Perform inspections of the impounding structure annually and maintain records.
- ➡ Notify the local emergency management coordinator, the Virginia Department of Emergency Management, and the department in the event of a failure or emergency condition at the impounding structure.
- ➡ Notify the department immediately of any change in circumstances that would cause the impounding structure to no longer qualify for a general permit.
- ➡ Update and resubmit the Emergency Preparedness Plan immediately upon becoming aware of necessary changes to keep the plan workable.
- ➡ Ensure that the impounding structure is properly and safely maintained and operated according to a written operation and maintenance plan.
- ➡ Do not permit growth of trees and other woody vegetation on the slopes and crest of embankments and the emergency spillway area, and within a distance of 25 feet from the toe of the embankment and abutments of the dam.

# VA Dam Safety Program – Funding Opportunities

## 2026 DSFPPAF Grant Cycle

- Application period: December 31, 2025 – March 31, 2026
- Awards announced July 2025
- 2-year work period
- Project Type I (\$1M available):
  - Private and municipal owners
  - 10% dam owner match or \$5k, whichever is higher
  - Engineering studies (Inspection, DBIZ, EAP, Alternatives analysis, Geotech investigation)
  - Unknown dams get priority
- Project Type II (\$4M available):
  - Private and municipal owners
  - 30% dam owner match
  - Final plans and Construction
  - High hazard dams get priority
  - Dams with alteration permits get priority for construction projects



<https://www.dcr.virginia.gov/dam-safety-and-floodplains/ds-dsis>

# Dam Safety Inventory System (DSIS)

Dam SearchApplication SearchMy AccountSupportEmergency Dashboard

Welcome, "Charles Wilson"Logout

Dams > 171001

Dam Name:Stony Creek Dam #9

Dam Inventory Number:171001

Legacy Number:17101

Dam Region:1

Hazard Classification:High

County:Shenandoah

Owner Name:Lord Fairfax Soil and Water Conservation District

Regional Engineer:Michael Wang

Inundation Study Date:02/04/2010

Certificate Type:Regular Operation and Maintenance Certificate

Certificate Expiration Date:11/30/2023

EP Expiration Date:09/15/2022

Events

General

Regulated

Technical Basics

Technical Hydrology

Contacts

Map

Inundation / PMP Studies

Emergency Plans

Emergency Map

Inspections

Certificates

Permits

Grants

Attachments

All Attachments

History

Technical Structure

Technical Spillway

Watershed


This dam is located in a special flood hazard area. This may require a local floodplain permit. Contact your local floodplain administrator for more information. Click here for directory: [Floodplain Directory](#)

Upcoming Expirations

Expiration Date	Type	Sub Type
11-2023	Certificate	Regular Operation and Maintenance Certificate
09-2022	Emergency Plan	EAP
11-2016	Permit	Alteration Permit

Upcoming Inspections

Inspection Type	Last Inspection Date	Next Inspection Date	Overall Condition
Engineer	10-2019	10-2021	Satisfactory
Owner	11-2007	10-2020	



DCR  
Virginia Department of Conservation & Recreation