

Probable Maximum Precipitation Web Pages

Monday, December 14, 2015

<http://www.dcr.virginia.gov/dam-safety-and-floodplains/>

Dam Safety and Floodplains

- Dam Safety +
 - Dam Safety Documents
 - Dam Safety Contacts
 - Dam Classification
 - DS Regulations (PDF)
 - Dam Owner Handbook (PDF)
 - Probable Maximum Precipitation Study and PMP Evaluation Tool
 - Probable Maximum Precipitation Study Background
 - Vegetation, Erosion
 - Rodent Control
 - Forms

Dam Safety

Unless specifically excluded, all dams in Virginia are regulated. More than 2,900 dams are regulated here.

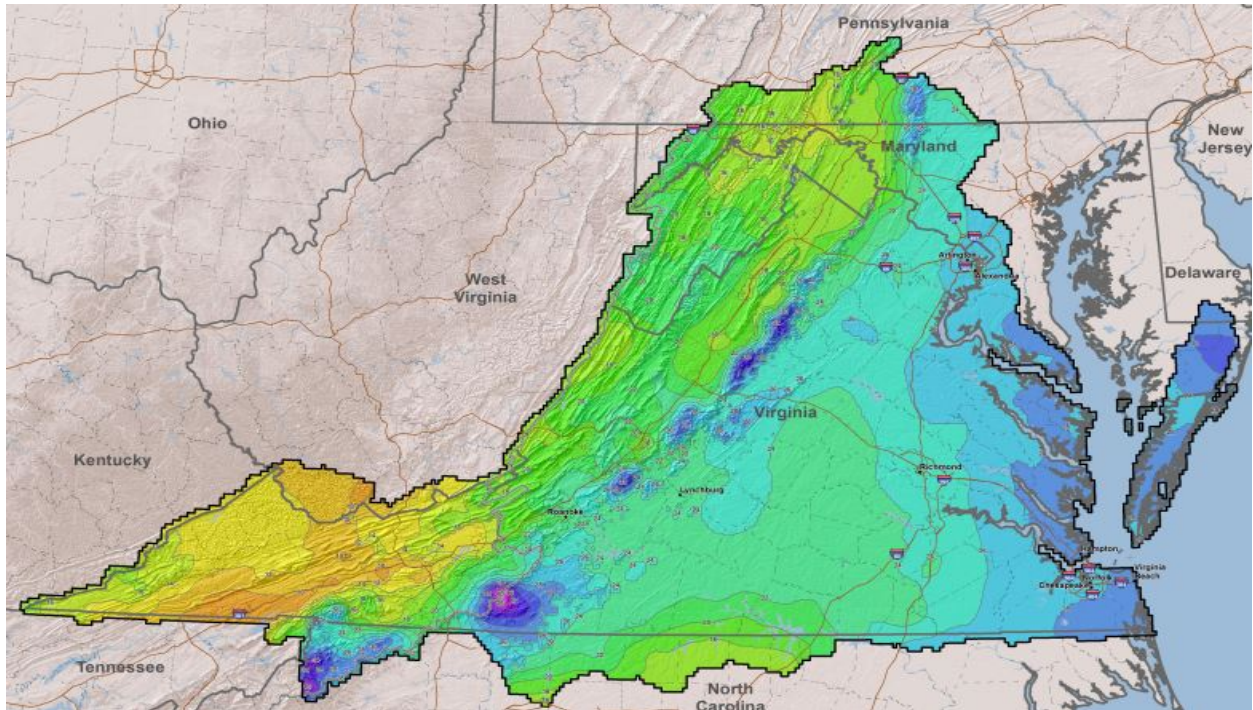
DCR's dam safety staff works to ensure that dams are properly and safely designed, built, operated and maintained. Dams in Virginia are classified according to their hazard potential - high, significant or low. Classification of a dam can change depending on how the dam's failure may lead to the loss of life and property downstream.

- [Learn more about DCR's Dam Safety Program.](#)

Dam Safety News

- **Virginia Soil and Water Conservation Board Adoption of Probable Maximum Precipitation Study for Virginia and Associated PMP Evaluation Tool and Database**
 - Probable Maximum Precipitation Study and PMP Evaluation Tool
 - Probable Maximum Precipitation Study Background
- **2015 Dam Safety, Flood Prevention and Protection Assistance Fund grants (PDF) awarded.**
- **[View several recently approved dam safety guidance documents.](#)**

[Probable Maximum Precipitation Study and PMP Evaluation Tool Link](#)



Probable Maximum Precipitation Study for Virginia and Associated PMP Evaluation Tool and Database (November 2015)

NOTE: This tool and database is being pre-released for informational purposes only. The effective date for regulatory permit or certificate issuance or other regulatory approvals utilizing this information is expected to be in March of 2016. Additional information regarding the specific effective date will be forth-coming.

This study provides gridded Probable Maximum Precipitation (PMP) values (2.5 square mile grids) for any drainage basin within Virginia, including regions adjacent to the State that provide runoff into drainage basins within Virginia. These values replace those provided in Hydrometeorological Reports (HMRs) including, but not limited to, 40, 51, 52, and 56 (1965, 1978, 1982, and 1986 respectively). Results of this analysis reflect the most current practices used for defining PMP, including comprehensive storm analyses procedures, extensive use of geographical information systems (GIS), explicit quantification of orographic effects, updated maximum dew point climatologies for storm maximization and transposition, and an updated understanding of the weather and climate throughout the state.

For technical assistance regarding this information, please contact:

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Deliverables from the PMP Study Available for Download

PMP Final Report and Appendices

- **Executive Summary** (293 KB)
- **Final Report** (13.0 MB)
- **Appendices A-E, G-K** (53.3 MB)
- **Appendix F** (74.2 MB)

Pre-Run PMPs

- **Virginia PMPs Pre-run For 900+ High and Significant Hazard Dams** (6.23 GB)
 - (Note: Download and unzipping times will vary but may be significant due to file sizes.)

PMP Evaluation GIS Tool

- **PMP Evaluation Tool** (240 MB) (May be Downloaded)
- **PMP Evaluation Tool Description and Usage** (190 KB)

Disclaimer:

All final deliverables for the Virginia Probable Maximum Precipitation Study are being provided herein with the expressed understanding that the Virginia Department of Conservation and Recreation (DCR) and the Commonwealth of Virginia are releasing these products at the user's own risk. This Study is based on the best information, science, and techniques available; however, no warranty, expressed or implied, is made regarding the accuracy, adequacy, completeness, or reliability of the data provided. These data are provided on an "as is" basis. Neither the DCR nor the contributors of said data to the DCR shall be held liable for any use or application of the data provided whatsoever, whether or not that use is improper or incorrect, and assume no responsibility for the use or application of the data or information derived from interpretation of the data. In no event shall the DCR or its collaborators be liable for any direct, indirect, or incidental damages arising from the use or application of these data. This disclaimer of liability applies to any damages or injury, including but not limited to those caused by any failure of performance including failures resulting in personal injury or property damage, error, omission, defect, delay in operation or transmission, computer virus, alteration, use, application, analysis, or interpretation of data. It is the owner's engineer and/or other end users who are expected to take all steps necessary to ensure proper use and understanding of these products and that all information is being interpreted and applied properly.

Users should check back routinely for new updates as data will be added and changed periodically resulting in some data becoming out-of-date. It is recommended that the user not let a significant period of time elapse between obtaining and using the data.

See also: [Probable Maximum Precipitation Study Background](#)

Probable Maximum Precipitation Study Background Link**Probable Maximum Precipitation Study Background**

During the 2014 Virginia General Assembly Session, the legislature passed (House Bill 1006 and Senate Bill 582) and the Governor approved on April 1, 2014 (Chapters 475 and 489 of the 2014 Virginia Acts of Assembly), legislation that authorized a new Virginia Probable Maximum Precipitation Study to be completed by December 1, 2015. The legislation directed “[t]hat the Department of Conservation and Recreation, on behalf of the Virginia Soil and Water Conservation Board, shall utilize a storm-based approach in order to derive the Probable Maximum Precipitation (PMP) for locations within or affecting the Commonwealth. The PMP revisions shall be based on accepted storm evaluation techniques and take into account such factors as basin characteristics that affect the occurrence and location of storms and precipitation, regional and basin terrain influences, available atmospheric moisture, and seasonality of storm types. The results shall be considered by the Virginia Soil and Water Conservation Board in its decision to authorize the use of the updated PMP values in Probable Maximum Flood calculations, thus replacing the current PMP values.”

In accordance with this legislative direction, Applied Weather Associates (AWA), on behalf of the Virginia Soil and Water Conservation Board, completed a statewide Probable Maximum Precipitation (PMP) Study for Virginia. A Technical Review Board of experts, with additional ad-hoc participation by cooperating state and federal agencies, was established by the Department to provide advice and expertise throughout the development of the study. The Technical Review Board met to review and discuss study progress and results in July and November of 2014 and April and October of 2015 and accepted AWA’s estimates for probable maximum precipitation (PMP) for Virginia.

The Virginia Soil and Water Conservation Board adopted the Probable Maximum Precipitation Study for Virginia and the Associated PMP Evaluation Tool and Database on December 9, 2015 and the Director of the Department of Conservation and Recreation subsequently approved on December 9, 2015 the design procedures and criteria as accepted current, sound engineering practices for the design of an impounding structure.

Supporting Documentation

- [Chapter 475 of the 2014 Virginia Acts of Assembly \(House Bill 1006\)](#)
- [Chapter 489 of the 2014 Virginia Acts of Assembly \(Senate Bill 582\)](#)
- Technical Review Panel Members
- Virginia PMP Study Technical Review Panel Final Report
- Virginia Probable Maximum Precipitation (PMP) Study Overview PPT (Presented to the Virginia Soil and Water Conservation Board on December 9, 2015)
- Virginia Soil and Water Conservation Board Study Adoption and Regulation Approval Motion (December 9, 2015)
- Exempt Regulatory Action to Amend the Impounding Structure Regulations (4VAC50-20) (December 9, 2015)

- First Virginia PMP Study Meeting (July 8, 2014)
 - Agenda
 - Project Overview Presentation
 - Storm Precipitation Analysis System (SPAS) Overview

- Second Virginia PMP Study Meeting (November 18, 2014)
 - Agenda
 - PMPs Never Happen-Or Do They - Harrison 2001 ASDSO
 - Ballpark PMFs - Harrison & Paxson 2004 ASDSO

- Third Virginia PMP Study Meeting (April 7 and 8, 2015)
 - Agenda
- Fourth Virginia PMP Study Meeting (October 6 and 7, 2015)
 - Agenda
 - Project Overview Presentation

See also: [Probable Maximum Precipitation Study and PMP Evaluation Tool](#)