Virginia Soil and Water Conservation Board
Thursday, March 17, 2016 – 9:30 a.m.
Chesterfield, Virginia

TIME AND PLACE

The meeting of the Virginia Soil and Water Conservation Board took place on March 17, 2016 at the Swift Creek Dining Hall at Pocahontas State Park, Chesterfield, Virginia.

MEMBERS PRESENT

Daphne W. Jamison, Chair
Richard A. Street, Vice Chair
Jerry L. Ingle
Stephen Lohr
Barry L. Marten
Raymond L. Simms
Clyde E. Cristman, DCR Director, Ex Officio
Dr. Bobby Grisso, Virginia Cooperative Extension, Invitee

MEMBERS ABSENT

C. Frank Brickhouse, Jr.
Gary Hornbaker
Janette F. Kennedy
John A. Bricker, NRCS, Ex Officio

DCR STAFF

Rochelle Altholz, Deputy Director of Administration
Anne Crosier, Enforcement and Compliance Manager
David C. Dowling, Deputy Director for Dam Safety and Soil and Water Conservation
Michael R. Fletcher, Board and Constituent Services Liaison
Darryl Glover, Director, Division of Soil and Water Conservation
Blair Gordon, Conservation District Coordinator
Stephanie Martin, SWCD Liaison
Gary Moore, Ag Incentives Program Manager
Amanda Pennington, Engineering Services Manager
Amy Walker, Conservation District Coordinator
Christine Watlington, Senior Policy and Planning Analyst
Charlie Wilson, District Dams Engineer
Kelci Block, Office of the Attorney General

OTHERS

Suzanne Brown, Loudoun SWCD
Sharon Connor, Hanover-Caroline SWCD
Laura Grape, Northern Virginia, SWCD
Ann Jennings, Chesapeake Bay Commission
Matt Kowalski, Chesapeake Bay Foundation
Alyson Sappington, Thomas Jefferson SWCD
Wilmer Stoneman, Virginia Farm Bureau
Dr. Kendall Tyree, Virginia Association of Soil and Water Conservation Districts

E.B. Watson, Peaks of Otter SWCD
Greg Wilchens, Culpeper SWCD

ESTABLISHMENT OF A QUORUM
With six (6) members of the Board present, a quorum was established.

CALL TO ORDER AND INTRODUCTIONS

Chairman Jamison called the meeting to order at 9:30 a.m. and called for introductions of members, staff, and guests.

APPROVAL OF MINUTES FROM DECEMBER 9, 2015

BOARD ACTION:
Mr. Lohr moved the approval of the minutes of the December 9, 2015 meeting of the Virginia Soil and Water Conservation Board and was seconded by Mr. Simms. The minutes were approved unanimously.

DIRECTOR'S REPORT

Mr. Cristman gave the Director's report. He welcomed members and guests to Pocahontas State Park, the largest in the Virginia State Parks system with over 8,100 acres. The park initially opened as a national park in 1936 and was used following World War II for a place for servicemen to adjust to reentry. The park was donated to the Commonwealth in 1946. It is the closest park to downtown Richmond.

Mr. Cristman noted the following:

- Former State Parks Director and, most recently, Deputy Director of Operations, Joe Elton, retired on March 1, 2016.
- Former Director of the Division of Natural Heritage, Tom Smith, has been named Deputy Director of Operations.
- District Dams Engineer, Charles Wilson, has joined DCR to work with district owned/ managed dams.

Mr. Cristman reported that the General Assembly had adjourned, but that the veto session was still scheduled for April 20th.

He noted that legislation had passed that will eliminate the potential conflict of interest regarding District Directors receiving cost-share payments. Chairman Dunford had previously requested an opinion from the Office of the Attorney General, but the General Assembly has now addressed the issue making issuance of an opinion unnecessary. The legislation will be retroactive.

Mr. Cristman noted that while the budget is not yet finalized, funding for Soil and Water Conservation Districts reached an historic level. The House and Senate adopted the Governor's recommendation with regard to WQIF funding. $61.7 million in surplus funds will be deposited into the WQIF, with $8.2 million of it going into the reserve fund and lesser amounts for other water quality initiatives. The remaining $51.8 will be deposited into the Natural Resources Commitment fund for the Ag BMP Cost-share program.

Mr. Cristman noted that he was pleased to see that Delegate Hodges and Senator McDougle attended the Area 3 meeting.

Money has been appropriated to hire a second person to work with shoreline erosion. Recruiting will begin soon.

LEGISLATIVE UPDATE

Mr. Dowling reported on additional legislative items.

- House Joint Resolution No. 189 recognized the 2015 winners of the Clean Water Farm Awards.
- House Joint Resolution No. 92 confirmed Board appointments for Ms. Kennedy, Mr. Marten, and Mr. Street.

VIRGINIA SOIL AND WATER CONSERVATION BOARD FY 2017 VACS PROGRAM AND POLICY DISCUSSION

Mr. Dowling, Mr. Glover, and Mr. Moore addressed the Agricultural BMP Cost-Share Manual Amendments and other cost-share and technical assistance policy recommendations. A working document entitled "Virginia Soil and Water Conservation Board FY 2017 Cost-Share Program and Policy Discussion" was provided to members and is available from DCR. The Board provided staff with direction regarding the 30 items outlined in the document. The Board will take final action on the Agricultural BMP Cost-Share Manual at their April meeting and on the Policies and Grant Agreements at their May meeting.

Mr. Moore reviewed Sections 1-10 on pages 1-3. He noted that these recommendations came through the Agricultural BMP TAC process.

Mr. Lohr moved and Mr. Simms seconded that cisterns be included in item #8. That included edits to the accompanying document "Roof Runoff Management System: DCR Specifications for No. WQ-12."

The motion was amended to say that the document should read that all cisterns, including ones that are filtered, may receive cost-share or tax credits. The motion carried.

Dr. Grisso expressed a concern regarding soil samples as referenced in Item #9. He noted that the cost of soil sampling was approximately $150,000. That does not include staff time. Currently the turn-around time for sampling is about 1-2 weeks. Results are provided to the farmer in PDF format but do not allow integration into the farmer's farm management program.

Mr. Ingle moved and Mr. Lohr seconded that the Board approve in concept Items 1-10, with the exclusion of #8. The motion carried.

Mr. Moore continued the review of the document.

Mr. Lohr moved and Mr. Marten seconded that the Board approve in concept items #11-23. The motion carried.

Mr. Dowling addressed item #24. Discussion included Appropriation Act language, program budget figures, status updates on recordation revenue and SL-6 backlog, progress charts outlining N, P, and sediment reductions towards Chesapeake Bay WIP milestones, and analyses regarding how best to target necessary reductions with available program funding.

Mr. Dowling provided a Fiscal Discussion Document. A copy of this document is available from DCR.

Mr. Ingle asked about the SL-6 backlog.

Mr. Dowling replied that $19 million from the surplus funds deposit was being targeted to address the $62 million backlog. Additional funds from the recordation fee arealso being recommended to be put towards SL-6.

Mr. Ingle moved the following regarding the questions under item #24 and Mr. Simms seconded:

- Use a recordation fee revenue estimate of $8.2 million.
- Allocate the recordation funds to the SL-6 backlog.

Unallocated Funds

- From unallocated funds take $200K for RMPs.
- Split the remaining unobligated funds 50/50 between the SL-6 backlog and Cost-Share.
- Provide Technical Assistance at 12% unless funds were otherwise obligated.
- SL-6 funds will be split 50/50 between the Bay and non-Bay areas.
- The general cost-share will follow the 60/40 standard basin split.

The motion carried.

Mr. Street requested that DCR look into possible funding for Virginia Cooperative Extension to work with soil sampling.

With regard to Technical Assistance allocations to the Districts, staff has historically used FY13 funding as a base allocation. It was recommended that this practice be discontinued and that Technical Assistance allocations be made proportionally to cost-share allocations.

Mr. Street moved and Mr. Lohr seconded that Technical Assistance funding be proportionate to funding received. The motion carried with Mr. Ingle voting no.

Regarding district deliverables and the recommended assessment process, Mr. Street moved that the wording of the documents move as proposed and that during the next year the Board establish a subcommittee to continue to review and refine the entire process of district deliverables and ratings. Mr. Ingle seconded and the motion was approved.

Mr. Dowling advised that staff would take the Board's recommendations as discussed and bring the various documents to the next Board meeting for consideration.

REVIEW OF BOARD WORK SCHEDULE

Mr. Dowling reviewed the Board work schedule for April and May.

Wednesday, April 20, 2016 (Virginia Horse Center, Lexington, Virginia)

- Approval of the Board's Fiscal Year 2017 Agricultural BMP Cost-Share Manual
- Review of Draft Policy on Soil and Water Conservation District Administration and Operations Funding Allocations for Fiscal Year 2017
- Review of Draft Policy and Procedures on Soil and Water Conservation District Cost-Share and Technical Assistance Funding Allocations (Fiscal Year 2017)
- Review of Administration and Operations Cost-Share and Technical Assistance Contracts and Deliverables
- Bylaws Update
- Soil and Water Conservation Division Program Updates (ex. Conservation Planning, Engineering Approval Authority, etc.)
- Review of Dam Safety Insurance Guidance
- District Audit Results
- Virginia Association of Soil and Water Conservation Districts' Board Appointment Recommendations

Tuesday, May 24, 2015 (Old Dominion Electric Cooperative, Glen Allen, Virginia)

- Board Approval of Policy on Soil and Water Conservation District Administration and Operations Funding Allocations for Fiscal Year 2017
- Board Approval of Policy and Procedures on Soil and Water Conservation District Cost-Share and Technical Assistance Funding Allocations (Fiscal Year 2017)
- Approval of Administration and Operations and Cost-Share and Technical Assistance Contracts and Deliverables
- Review of Dam Safety Program Enforcement Manual (Tentative)
- Review of Nutrient Management Regulation
- Desk Top Guide Review
- COIA/FOIA Training

SOIL AND WATER CONSERVATION

Division Report

Mr. Glover gave the following report:

Madam Chairwoman, members of the Virginia Soil and Water Conservation Board, Director Cristman, please accept this Soil and Water Conservation Division Report.

District Engineering Services

The Department has hired Charles Wilson, a Professional Engineer, as our new District Dam Safety Engineer, to replace Ken Turner, to be the "engineer of record" for all District Dams. Charles will also be working on all of State Park's dams. Charles came to DCR via the private sector.

Engineering training sessions for District staff noted in an earlier report, are being scheduled. Two of them will be held on March 29 in Rustburg, and July 12 in Culpeper. Three additional trainings will be planned soon.

In addition to reviewing the qualifications of District staff who previously obtained engineering job approval authority under USDA-NRCS, the Department is also evaluating additional options that would help address the engineering needs of Districts, particularly those related to SL-6 livestock stream exclusion practices.

Accounting Training for SWCDs

The Department continues, to plan to offer book keeping/basic accounting classes, in several locations, to Districts in May and June 2016. Additional details will be announced to Districts soon.

Resource Management Plan (RMP) Program

An expected reduction in federal grant funding will reduce the number of contractual Resource Management Plans (RMPs) prepared in the Chesapeake Bay from 278 last year (in 2015), to less than 30 this year. A similar number of contractual RMPs, i.e. totaling less than 30, are expected Outside the Chesapeake Bay (OCB) in 2016. Federal grant funding for roughly 30 more RMPs in the Chesapeake Bay is expected in 2017.

Shoreline Erosion Advisory Service

Requests for SEAS assistance continue to be very steady. With a second staff person to be hired in FY2017, this program can then expand more into non-tidal areas in Virginia. The second SEAS position will be stationed in either Warrenton or Tappahannock.

BMP Verification Plan Status

Virginia's BMP Verification Plan has received "conditional" approval from the US Environmental Protection Agency (EPA). The Department continues to provide input to DEQ in response to those comments that pertain to agriculture. Virginia's responses to EPA's comments on the entire plan are due by April 4.

Conservation Plan Training and Certification

The Department will advertise for a Conservation Planning and Certification Trainer before July 1st. This position will be full-time, under the supervision of Barbara McGarry, from our Resource Management Plan Program. Barbara is USDA-NRCS conservation planning certified. She will be ably assisted in establishing the program by David Kindig, our Nutrient Management Plan Certification and Training Manager. While this position will spend a majority of their time on helping Districts with conservation planning, they will also facilitate other types of training for Districts and for our own staff within the Division of Soil and Water Conservation.

Nutrient Management

Requests for Applications were recently released by the Department, with a combined total of just under $200,000, for contracts to write agricultural nutrient management plans on both permitted and unpermitted animal operations.

Funding is available to resume poultry litter transport out of the Chesapeake Bay watershed. A meeting with Poultry representatives will be held on March 22nd to gauge their interest in a resumption of this effort.

For Urban Nutrient Management, golf course acreage, state-owned land acreage, and acreage reported by lawn care operators continues to grow.

Homeowner nutrient management plan acreage is increasing because of the Healthy Virginia Lawns Program run by various Virginia Cooperative Extension Offices in Virginia. They work with homeowners to improve their landscapes through proper fertilization and cultural practices. Last year this program wrote over 1,000 plans covering about 400 acres.

There are currently 137 golf course nutrient management plans in Virginia covering 14,730 acres. All 332 golf courses in Virginia are required to have plans by July 1, 2017. The Department continues to offer grant contracts for golf course nutrient management plan development. The current round of grants is set to expire on June 30, 2016, but new funding is included in the FY2017 budget bill to offer additional grant contracts.

This summer we shall begin verifying 10% of the golf course acreage with nutrient management plans. This will be accomplished by reviewing fertilization records to check for timing and rates of application. We shall also meet individually with Turf & Landscape planners soon to discuss their ideas about urban nutrient management plan verification. This initial 10% plan verification will be used to establish a compliance baseline, and then statistical significance will be used to determine the amount of acreage that needs to be verified each year.

There are 44 state agencies required to obtain nutrient management plans. To date, 35 agencies have obtained 97 urban plans, covering 2,945 acres, plus 35 agricultural plans, covering 5,758 acres. This summer the Department will verify 10% of the urban state-owned land acreage to establish a compliance baseline.

The Green & Clean Initiative was formerly called the Water Quality Agreement Program. This program works with lawn care operators to ensure they are following the Virginia Nutrient Management Standards and Criteria fertilization rates. The Green & Clean Initiative had 25 companies participating last year, fertilizing 15,000 acres. Green & Clean participants are also subject to verification. Verification of Green & Clean participants involves approving submitted fertility plans and checking to see that there is a fertilization record keeping system in place. The Department has verified 10% of the acreage associated with this program since 2014. We offer business listing on the Department website, promotional logos, and free outreach to potential clients at various events.

All non-agricultural commercial applicators in the state are required to receive training via the Virginia Department of Agricultural and Consumer Services (VDACS) Certified Fertilizer Applicator Program (CFA). The VDCAS CFA program follows the Virginia Nutrient Management Standards and Criteria fertilization rates so every acre treated by certified fertilizer applicators is being treated as if it is under a nutrient management plan. The Department is interested in finding a way to convert this particular data into a reportable format for pollution reduction credit.

The Department is also attempting to get all CFA lawn care operator participants to also participate in the Green & Clean Initiative.

Area Visits

I am again offering to meet with District Board chairpersons and vice-chairpersons in each area at any time that is convenient for them throughout the year. Area I has requested a meeting in April.

District Director Resignations and Appointments

Ms. Martin presented the District Director Resignations and Appointments.

Big Sandy

Resignation of Joshua Brown, Buchanan County, effective 1/11/16, elected director position (term of office expires 1/1/20).

Recommendation of Jason Deel, Buchanan County, to fill unexpired term of Joshua Brown (term of office to begin upon qualifying* through 1/1/20).

Henricopolis

Recommendation of Edward Olsen, Henrico County, to fill unexpired appointed Extension Agent director position term of Lisa Sanderson, (term of his office to begin upon qualifying* through 1/1/17).

Resignation of Lisa Sanderson approved at the September 24, 2015 Board Meeting.

Mountain

Resignation of David J. Byer, Alleghany County, effective 12/31/15, elected director position (term of office expires 1/1/16).

Write in Elected Director Kevin T. Carey, Alleghany County, declined to take the Oath of Office and replied to a written request from the SWCD that he did not wish to serve as a Director on the Mountain SWCD Board.

Recommendation of Nicholas B. Pillow, Alleghany County to fill the vacant office for the remainder of the four-year term (term of his office to begin upon qualifying* through 1/1/20).

Write in Elected Director Emmett F. Boguess, City of Covington, declined to take the Oath of Office and replied to a written request from the SWCD that he did not wish to serve as a Director on the Mountain SWCD Board.

This position is vacant. Previous City of Covington director resigned and the SWCD does not have a candidate at this time.

Peanut

Resignation of Glenn R. Slade, Surry County, effective 1/26/16, appointed Extension Agent director position (term of office expires 1/1/17).

Recommendation of Janet Spencer, Isle of Wight County, to fill unexpired appointed Extension Agent director position term of Glenn Slade, (term of her office to begin upon qualifying* through 1/1/17).

*NOTE: To qualify, an appointed Director shall complete and file the Oath of Office prior to assuming the title and responsibilities of District Director. An appointed Director may not act in the office or function before taking the Oath.

Mr. Ingle moved and Mr. Lohr seconded that the Board approve the list of District Director Resignations and Appointments as presented by staff. The motion carried unanimously.

District Employment of a Secretary-Treasurer in Accordance with §10.1-532

Ms. Martin presented a request from the Virginia Dare SWCD that the Board approve the appointment of District Manager, Kathleen Sullivan as District Treasurer in accordance with §10.1-532 which states:

> The district directors may employ a secretary-treasurer, whose qualifications shall be approved by the Board, technical experts, and such other officers, agents and employees, permanent and temporary, as they may require, and shall determine their qualifications, duties and compensation.

Mr. Lohr moved and Mr. Street seconded that the Board approve the qualifications of Kathleen Sullivan, Virginia Dare SWCD District Manager, to serve as secretary-treasurer of the Virginia Dare SWCD. The motion was approved unanimously.

DAM SAFETY AND FLOODPLAIN MANAGEMENT

Division Report

Mr. Dowling reviewed the following Dam Safety items:

Virginia Dam Safety Program Budget Actions

From Governor's Introduced Budget (Maintained in General Assembly Approved Budget)

- **Provide additional funding to support dam safety and floodplain management.**
  Provides additional funding to support dam safety and floodplain management. The funding will be used to hire a position and allow the Division of Dam Safety and Floodplain Management to provide public safety services related to its programs.

	2017	2018
General Fund	$546,080	$546,080

From General Assembly Approved Budget

- **Funding for the rehabilitation of the Hearthstone Lake Dam in Augusta County.**
  "Out of these amounts, $633,100 in the first year from the general fund shall be provided to match federal and local funding for the rehabilitation of the Hearthstone Lake Dam in Augusta County."

Explanation: This amendment provides $633,100 in the first year from the general fund to rehabilitate the Upper North River Watershed Dam Number 77 on Hearthstone Lake in Augusta County to meet current NRCS safety performance standards for a high hazard dam. The proposed project would provide sediment storage for another 68 years after construction and maintain the current level of flood protection downstream. The plan provides for raising the dam embankment by 2.6 feet with earthfill, widening the auxiliary spillway by 92 feet, constructing a splitter dike, and installing turn reinforcement mat for stability. It is anticipated that federal funds will be provided for the remaining $2.1 million of costs associated with the rehabilitation.

- **Funding for the rehabilitation of the Lake Pelham and Mountain Run dams in Culpeper County.**
  "Out of these amounts, $2,942,490 in the first year from the general fund shall be provided to match federal and local funding for the rehabilitation of the Lake Pelham and Mountain Run dams in Culpeper County."

  Explanation: This amendment provides additional funding to match federal and local funding for the rehabilitation of two high hazard dams in Culpeper County.
  Likely allocations are: Mountain Run #50 (Pelham Lake), $1,352,535; and Mountain Run 11 (Mountain Run Lake), $1,589,955.

- **Increased funding for District Small Dam Repairs**
  Explanation: This amendment provides an additional $350,000 from the general fund in each year for the repair of small dams maintained by Soil and Water Conservation Districts. $500,000 in total per year.

Probable Maximum Precipitation Update

The Probable Maximum Precipitation regulation that implements the new PMP values becomes effective on March 23, 2016. At the Virginia Lakes and Watersheds Association Conference earlier this week, several papers were presented that explained the new PMP values and that demonstrated some of the potential cost-savings associated with the new values. Mr. Marten represented the Board at this Conference. It appeared that the engineering community was supportive and appreciative of the Board's efforts.

Implementation guidance has been drafted for the Board's consideration and support in "concept". A copy of the draft document is included as Attachment #A.

Mr. Street moved and Mr. Simms seconded that the Board approve in "concept" the document titled "Guidance Document on New Probable Maximum Precipitation (PMP) Implementation" and authorize the Board Chair and Director to approve the final document pending review by the Attorney General's Office. The motion carried unanimously.

2016 Dam Safety, Flood Prevention and Protection Assistance Fund grant projects and funding allocations.

Mr. Dowling presented the following which was moved and approved by the Board as follows:

Motion for the Board to obligate funds for 2016 Dam Safety, Flood Prevention and Protection Assistance Fund grant projects and funding allocations.

In accordance with its responsibilities pursuant to §10.1-603.16 et seq. (Article 1.2) of the *Code of Virginia*, the Virginia Soil and Water Conservation Board (Board) approves the obligation of new funding for a future grant round (likely Fall of 2016) from Dam Safety, Flood Prevention and Protection Assistance Fund (DSFPPAF) balances in an amount not to exceed $436,977.50 which represents 50% of the FY 2015 deposits and earned interest to the Fund. The Board shall approve the specific projects and conditions of the awards upon completion of the grant round.

In addition to this sum, special Grant Funds for Upper North River #77 (Hearthstone Lake), Mountain Run #50 (Pelham Lake), and Mountain Run 11 (Mountain Run Lake) will be disbursed by the Virginia Resources Authority (VRA) after the funds are received by the Department and transferred to VRA pursuant to the 2016 Appropriations Act, and other Agreement terms have been satisfied.

The Department is authorized to communicate this approval to the Virginia Resources Authority (VRA) so that VRA may obligate these funds.

Motion made by:	Mr. Street
Motion seconded by:	Mr. Lohr
Action:	Motion carried unanimously

Enforcement Report and Status Presentation

Mr. Dowling noted that the enforcement reports had been mailed to members and that an effort had been made to conform the formatting of the information between dam safety regions and to improve upon the information provided.

High Hazard Dams

Ms. Crosier gave an update regarding high hazard dams. She noted the following:

Rainbow Forest

- This dam is unsafe because the capacity is 12.5% of the PMF.
- The General Assembly has appropriated $490,000 to pay for necessary improvements.
- The dam inundation zone includes 82 homes, four businesses, several rural roads, and a part of US Route 460.
- Water levels were lowered pursuant to the Director's Special Enforcement Order.
- Estimated cost to bring the dam into compliance is more than $1 million.
- The PMP study may indicate a reduction in storm event percentages that may result in savings.

Ivy Hill Lake Dam

- Owned by Liberty University
- The Emergency Action Plan indicates that more than 300 homes and businesses are located in the floodplain downstream of the dam.
- The University has been waiting for the results of the PMP study before finalizing the engineering report.
- Liberty is negotiating an agreement with the landowners whereby Liberty would make the required upgrades and repairs and then transfer ownership to the property owners association.
- The proposed property owners would repay Liberty through an interest-free loan over the next twenty years.
- Liberty has provided DCR with a revised plan and schedule for the Dam's Conditional and Operational Maintenance Certificate.

Kalnasay Dam

- Located in Loudoun County, in February 2014, DCR engineers found the Dam's principal spillway blocked.
- After ownership matters were resolved in 2015, owners now have an approved inundation study, Emergency Action Plan, and Annual Inspection reports.
- Necessary repairs and upgrades for the issuance of the regular Operation and Maintenance Certificate are scheduled to be completed in the summer of 2016.

Mr. Simms asked about the status of Little Lake Arrowhead Dam and Lake Arrowhead Dam in Stafford County.

Ms. Crosier responded that DCR is working on the next step. The homeowner's association was disbanded leaving the dams orphaned with no acknowledged owner or operator. DCR did hold a public meeting to inform the Lake Arrowhead subdivision residents and the local government of the conditions of the dams. The community and the County need to assess the results of the Probable Maximum Precipitation (PMP) Study on the Dams in order to decide whether to address the deficiencies or to drain the Lakes and decommission the Dam.

Mr. Cristman stated that he would like staff to speak with legal counsel regarding DCR's authority to lower the dams and that he would contact the County Administrator.

PARTNER REPORTS

Natural Resources Conservation Service

There was no NRCS report.

Virginia Association of Soil and Water Conservation Districts

Dr. Tyree gave the report for the Virginia Association of Soil and Water Conservation Districts.

- She expressed appreciation for DCR's support regarding legislative issues.

- Four of six area meetings have been held.
- New district director directories have been printed and distributed.
- The Association has hired a new coordinator for the VCAP program.
- The quarterly Association Board meeting will be held on March 31 at the Old Dominion Electric Cooperative in Glen Allen. [NOTE: at least three VSWCB Board members will be in attendance. DCR has issued a public notice regarding the meeting even though no VSWCB business will be transacted.]
- Upcoming Dates
    - May 4 – Association golf tournament
    - May 17-18 – Envirothon at James Madison University
    - June 21-22 – Summer Board Meeting
- The terms for the Area II and Area IV representatives to the VSWCB expire on June 30, 2016. The Association will bring forth recommended names at the April VSWCB meeting.

Virginia Cooperative Extension

Dr. Grisso gave the report for Virginia Cooperative Extension. He expressed appreciation for the work of the Board. He noted that there will be a changeover in many of the Extension Agency director positions. There may be sharing of positions.

There has been a good deal of interest in VCE well testing programs following the incidents in Flint, Michigan.

VCE has a new equine specialist in Middleburg. He suggested the Board may want to consider a presentation at the Lexington meeting regarding how to manage and maintain ground cover. DCR staff will coordinate this with Dr. Grisso.

NEW BUSINESS

As part of the budget template process, Ms. Connor from the Hanover-Caroline SWCD advised that with regard to base funding for Districts that consideration should be given to the Districts that fall within the Bay region and are subject to the Chesapeake Bay Preservation Act. She noted that the Act refers to SWCDs and not just to localities. This is a problem with the District funding template. She asked that there be an amendment for allowance for Districts in the Bay area to note this on the budget template. This is an unfunded mandate for Districts. Most Districts have neither the time nor money to carry out the Bay Act regulations.

PUBLIC COMMENT

There was no additional public comment.

NEXT MEETINGS

Upcoming Board meetings are scheduled as follows:

- Wednesday, April 20, 2016 – Virginia Horse Center, Lexington, VA
- Tuesday, May 24, 2016 – Old Dominion Electric Cooperative, Glen Allen, VA

ADJOURN

There was no further business and the meeting was adjourned.

Respectfully submitted,

Daphne W. Jamison
Chair

Clyde E. Cristman
DCR Director

Attachment #A

GUIDANCE DOCUMENT ON NEW PROBABLE MAXIMUM PRECIPITATION (PMP) IMPLEMENTATION

DRAFT Version 03-13-16

(Approved XXXX, 2016)

Summary:
This guidance document specifies the decision process to be utilized by impounding structure owners and their engineer in determining when a dam break inundation zone map, emergency action/ emergency preparedness plan, and hazard potential classification need to be updated to reflect Virginia's new Probable Maximum Precipitation (PMP) values that became effective on March 23, 2016.

Electronic Copy:
An electronic copy of this guidance in PDF format is available on the Regulatory Town Hall under the Virginia Soil and Water Conservation Board at http://townhall.virginia.gov/L/GDocs.cfm.

The study entitled "Probable Maximum Precipitation Study for Virginia (November 2015)", the PMP Evaluation Tool, *the Virginia PMP 2015 Watershed Calculation Spreadsheet*, *and related information may be found on the Department's website at* http://www.dcr.virginia.gov/dam-safety-and-floodplains/.

Contact Information:
Please contact the Department of Conservation and Recreation's Division of Dam Safety and Floodplain Management at dam@dcr.virginia.gov or by calling 804-371-6095 with any questions regarding the application of this guidance.

Disclaimer:
This document is provided as guidance and, as such, sets forth standard operating procedures for the Department of Conservation and Recreation in administering the Dam Safety Program on behalf of the Virginia Soil and Water Conservation Board. This guidance provides a general interpretation of the applicable Code and Regulations but is not meant to be exhaustive in nature. Each situation may differ and may require additional interpretation of the Dam Safety Act and attendant regulations. This guidance is not intended and cannot be relied on to create any rights, substantive or procedural, on the part of any person or entity.

PMP Implementation Procedures

I. Background:

Chapters 475 and 489 of the 2014 *Virginia Acts of Assembly* directed the Department of Conservation and Recreation (Department), on behalf of the Virginia Soil and Water Conservation Board (Board), to conduct a study that would result in a set of new Probable Maximum Precipitation or PMP values for Virginia. The legislation further stated that "*[s]uch PMP revisions shall be adopted by the Board if it finds that the analysis is valid and reliable and will result in cost savings to owners for impounding structure spillway construction or rehabilitation efforts".* The study entitled "Probable Maximum Precipitation Study for Virginia (November 2015)", was completed on December 1, 2015.

At the Board meeting on December 9, 2015, the Board found that the PMP analysis was valid and reliable and would result in cost savings to many owners for impounding structure spillway construction or rehabilitation efforts. The Board also:

- Recognized that the 2015 Virginia PMP values upon the effective date of the regulations shall replace the current PMP values provided in Hydrometeorological Reports (HMRs) and accepted the new values as sound engineering practices for use in the design of impounding structures;
- Recognized that owners of impounding structures with spillway design inadequacies who were under a moratorium on spillway rehabilitation shall now again be required to rehabilitate the spillway of their impounding structures utilizing the new PMP values upon the effective date of the regulatory action; and
- Adopted the Study, the PMP values, and authorized an exempt final regulatory action to effectuate the values.

The Board approved regulatory action amended 4VAC50-20-50 titled *Performance standards required for impounding structures* and incorporated by reference the Probable Maximum Study for Virginia (and associated PMP Evaluation Tool and Database) (November 2015). The regulatory action became effective on March 23, 2016.

This Guidance serves to specify the decision process to be utilized in determining when a dam break inundation zone map and emergency action/ emergency preparedness plan needs to be updated to reflect Virginia's new probable maximum precipitation (PMP) values.

II. Definitions (pursuant to 4VAC50-20-30):
"Dam break inundation zone" means the area downstream of a dam that would be inundated or otherwise directly affected by the failure of a dam.

"Design flood" means the calculated volume of runoff and the resulting peak discharge utilized in the evaluation, design, construction, operation and maintenance of the impounding structure.

III. Authority:

The 2014 *Virginia Acts of Assembly* contained the following Section 1 authorities applicable to this Guidance:

CHAPTER 475/ CHAPTER 489

An Act directing the Department of Conservation and Recreation to utilize a storm-based approach in updating the Probable Maximum Precipitation (PMP) for locations within or affecting the Commonwealth.

[H 1006]/ [S 582]
Approved April 1, 2014

Be it enacted by the General Assembly of Virginia:

1. *§ 1. That 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. Such PMP revisions shall be adopted by the Board if it finds that the analysis is valid and reliable and will result in cost savings to owners for impounding structure spillway construction or rehabilitation efforts.

§ 2. The development of the methodology shall be completed by December 1, 2015.

§ 3. Owners of impounding structures with spillway design inadequacies who maintain coverage under a Conditional Operation and Maintenance Certificate in accordance with the Board's Impounding Structure Regulations (4VAC50-20) shall not be required to rehabilitate the spillway of their impounding structure until the analysis required under § 1 has been completed and reviewed by the Virginia Soil and Water Conservation Board. Such owners shall remain subject to all other requirements of the Dam Safety Act (§ 10.1-604 et seq.) and regulations.

2. That in addition to other sums made available, the Department of Conservation and Recreation is authorized to utilize up to $500,000 in unobligated balances in the Dam Safety, Flood Prevention and Protection Assistance Fund established pursuant to § 10.1-603.17 of the Code of Virginia or the Dam Safety Administrative Fund established pursuant to § 10.1-613.5 of the Code of Virginia to contract out for the analysis required under § 1.

3. That an emergency exists and this act is in force from its passage.

Appendix 1 contains the *Code of Virginia* authorities applicable to this Guidance and Appendix 2 contains the *Impounding Structure Regulations* authorities applicable to this Guidance. These include:

§ 10.1-606.2. Mapping of dam break inundation zones.
§ 10.1-606.3. Requirement for development in dam break inundation zones.
4VAC50-20-20. General Provisions.
4VAC50-20-40. Hazard Potential Classifications of Impounding Structures.
4VAC50-20-50. Performance standards required for impounding structures.
4VAC50-20-54. Dam Break Inundation Zone Mapping.
4VAC50-20-105. Regular Operation and Maintenance Certificates.
4VAC50-20-175. Emergency Action Plan (EAP) for High and Significant Hazard Potential Impounding Structures.
4VAC50-20-177. Emergency Preparedness Plan for Low Hazard Impounding Structures.
DOCUMENTS INCORPORATED BY REFERENCE (4VAC50-20)

IV. Discussion and Interpretation:

Facts

Section 10.1-606.2. (Mapping of dam break inundation zones.) of the *Code of Virginia* specifies that an owner of an impounding structure shall prepare a map of the dam break inundation zone (DBIZ) for the impounding structure in accordance with criteria set out in the Virginia Impounding Structure Regulations (4VAC 50-20), that such DBIZ maps shall be filed with the Department of Conservation and Recreation 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, and that properties identified within the DBIZ shall be incorporated by the owner into the dam safety emergency action/ preparedness plan.

Section 4VAC50-20-54 (Dam Break Inundation Zone Mapping.) of the *Impounding Structure Regulations* specifies that DBIZ maps and analyses, completed in accordance with the requirements set out in the Section, shall be provided to the Department, except as provided for in 4VAC50-20-51 [Special Low Hazard Dams], to meet the requirements set out in 4VAC50-20-40 [Hazard Potential Classifications of Dams], 4VAC50-20-175 [Emergency Action Plans (EAP)], and 4VAC50-20-177 [Emergency Preparedness Plans (EPP)], as applicable. It further states that to meet the EAP/EPP requirements, that all owners of impounding structures shall provide a DBIZ map. It also notes that the hazard potential classification analysis must include the use of both the SDF and PMF in the analysis, both of which may be potentially affected by the new PMP values.

Section 4VAC50-20-40 specifies that to support the appropriate hazard potential classification that a dam break analysis shall be conducted by the owner's engineer utilizing procedures set out in 4VAC50-20-54 and that the resulting hazard potential classification be certified by the owner.

Additionally, in order for an owner to receive or renew a regular Operation and Maintenance Certificate in accordance with 4VAC50-20-105, the certificate application shall include a current EAP/EPP and that it, and the application as a whole, shall be certified by the owner in accordance with this Section and the owner's engineer in accordance with this section and 4VAC50-20-20. The Section also requires the owner to notify the Department immediately of any change in the use of the area downstream that would impose hazard to life or property in the event of a failure.

Further, 4VAC50-20-175 (EAPs) specifies that an EAP shall be maintained by the owner, shall be revised as needed and re-submitted every six years (at a minimum), and that the owner shall update and resubmit the EAP immediately upon becoming aware of necessary changes to keep the EAP workable. This Section requires that the approved DBIZ map(s) to be a part of the EAP/EPP.

Issues Summarization

The new PMP values could affect the impounding structures spillway design flood, hazard potential classification, DBIZ map, and EAP/EPP. As explained above, the owner and the owner's engineer are responsible for assessing the new PMP values and for ensuring that dam break inundation zone maps and the emergency action/ preparedness plans are complete and that the documents reflect any changes in the use of the area downstream of an impounding structure that would impose hazard to life or property in the event of failure. It is also clear that the owner and the owner's engineer need to

assess the impacts that the new PMP values may have upon the impounding structure's hazard potential classification (e.g. see if the hazard classification increases).

With the new PMP values becoming effective on March 23, 2016, through application of this guidance, the Department wants to ensure that the DBIZ map and EAP/EPP adequately protect lives and property of those downstream of an impounding structure while endeavoring to ensure that no unnecessary financial burden is imposed on the owner.

Procedures to be Applied

Procedures for addressing the revised PMP values and for updating DBIZ maps and EAPs/EPPs are as follows:

1) For maps not yet produced or produced prior to September 26, 2008:
   A) When the Department reviews a DBIZ map, it needs to ensure that it was completed in accordance with the current requirements of Section 4VAC50-20-54. In accordance with this item, a map, when required, shall be produced or updated to reflect current requirements. Such updates shall reflect the new PMP values.

2) For maps produced on or after September 26, 2008:
   A) At any time after March 23, 2016, if there have been any known changes in the use of the area downstream of an impounding structure that would impose hazard to life or property in the event of failure, the owner shall have their engineer run hydrologic and / or hydraulic models utilizing the new PMP values. If this creates a change in DBIZ maps and/ or EAPs/EPPs, updated maps and plans shall be submitted. Updated hazard potential classification analyses shall also be completed where applicable.
   B) Upon submission of a regular certificate renewal application after March 23, 2016, the owner's engineer must run the new PMP Evaluation Tool (http://www.dcr.virginia.gov/dam-safety-and-floodplains/pmp-tool) and determine the new governing PMP values for the 6-, 12-, and 24-hour durations (for the three storm types; general, local, and tropical). A completed copy of the *Virginia PMP 2015 Watershed Calculation Spreadsheet* and any supporting calculations shall serve as the confirmation record and shall be submitted with the owner's regular or conditional certificate renewal application. With the submission of a conditional certificate renewal application, the owner must provide this information or provide a reasonable schedule for the completion of this analysis.
      i) If all of the new governing 6-, 12-, and 24-hour PMP values are found and documented to have decreased from previously utilized HMR PMP values, no revisions to the map or EAP's need be conducted at this time, except in response to determinations required to be made in accordance with § 10.1-606.3 which shall be discussed later in this document (see Item 3). It is recognized that if all PMP values have decreased, that for the purposes of EAPs/EPPs and for hazard classification, that the version of the DBIZ map on file is more conservative and therefore adds an additional margin of safety.
         a) It should be noted that if the dam requires rehabilitation due to an insufficient spillway, then new modeling is recommended. However, the Department will accept information that is more conservative than may be needed had the new PMP values been applied to the design.
      ii) If one or two of the new governing 6-, 12-, and 24-hour PMP values are found and documented to have increased, it must be determined if either of these new increased

PMP values have become the controlling storm for the basin in question. Therefore, hydrologic and / or hydraulic models must be run utilizing the new governing 6-, 12-, and 24-hour PMP values to ensure that the hydrograph that creates the largest peak outflow is the one being used to determine hazard classification, SDF, and the capacity for non-failure and failure analysis. Should the controlling storm be the one that has decreased, paragraph (B)(i) set out above shall be followed. If it is found that the PMP value that represents the controlling storm is the one that has increased, revised DBIZ maps and EAPs/EPPs shall be required. The owner and the owner's engineer also need to assess the impacts that the revised controlling storm value may have upon the impounding structure's hazard potential classification (see if the hazard classification increases).

iii) If all of the new governing 6-, 12-, and 24-hour PMP values are found and documented to have increased, revised DBIZ maps and EAPs/EPPs shall be required. Updated hazard potential classification analyses shall also be completed where applicable.

3) <u>Section 10.1-606.3 requirement for re-mapping</u>

A) In accordance with § 10.1-606.3 of the *Code of Virginia*, for any development proposed within the boundaries of a dam break inundation zone that has been mapped in accordance with § 10.1-606.2, the locality shall, as part of a plan review, review the dam break inundation zone map on file with the locality for the affected impounding structure, and within 10 days forward a request to the Department of Conservation and Recreation to make a determination of the potential impacts of the proposed development on the spillway design flood standards required of the dam. The Department will utilize the map on file for the purposes of this review, but if it is known that the map has not been updated in response to the new PMP values, the Department shall note such in our response and require the owner to immediately initiate efforts to update the DBIZ map so that a refined impact of the development may be assessed regardless of whether the new PMP values increased or decreased for the impounding structure in question.

4) <u>Certifications</u>

A) Where an owner and owner's engineer based on their assessment determine that updates to DBIZ maps produced on or after September 26, 2008 and EAPs/EPPs are not necessary in accordance with this guidance, they shall each complete and submit with the owner's renewal application the following certifications in addition to any other certifications that may be required.

B) **Certification by Owner's Engineer**
I certify that I have evaluated the new probable maximum precipitation (PMP) values, and have found that each of the governing PMP values for the 6-, 12-, and 24-hour durations have decreased from previously utilized HMR PMP values or that the PMP value for the controlling storm has decreased from previously utilized HMR values. I therefore find that the original dam break inundation zone map and the emergency action plan/ emergency preparedness plan on file remain protective of public safety. I have attached a completed copy of the *Virginia PMP 2015 Watershed Calculation Spreadsheet* and my supporting calculations to serve as the confirmation record. Further, I have notified the impounding structure owner of my findings.

C) **Certification by Owner**
I, as the Owner of the impounding structure, certify that my engineer has evaluated the new probable maximum precipitation (PMP) values and advised me of the findings. I recognize that each of the governing PMP values for the 6-, 12-, and 24-hour durations have decreased from previously utilized HMR PMP values or that the PMP value for the controlling storm has decreased from previously utilized HMR values. In addition, I also certify that the original dam break inundation zone map and the emergency action plan/ emergency preparedness plan on file remain protective of public safety. I agree that should an evaluation be required in accordance with § 10.1-606.3 of the *Code of Virginia* to assess any development proposed within the boundaries of the dam break inundation zone below this impounding structure, that I shall upon notification from the Department of Conservation and Recreation immediately initiate efforts to update the dam break inundation zone map for my impounding structure so that a refined impact of the development may be assessed.
(Please see Appendix 3 for the Probable Maximum Precipitation Certification Form.)

V. Adoption, Amendments, and Repeal:
This document will remain in effect until rescinded or superseded.

_____	_____
Daphne W. Jamison	Clyde E. Cristman
Board Chair	Department Director

Appendix 1
Applicable *Code of Virginia* Authorities

The *Code of Virginia* contains the following authorities applicable to this guidance:

§ 10.1-606.2. Mapping of dam break inundation zones.

A. An owner of an impounding structure shall prepare a map of the dam break inundation zone for the impounding structure in accordance with criteria set out in the Virginia Impounding Structure Regulations (4VAC 50-20). Existing maps prepared by the locality in accordance with these regulations may be used for this purpose.

B. All maps prepared in accordance with subsection A shall be filed with the Department of Conservation and Recreation 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. …

D. All properties identified within the dam break inundation zone shall be incorporated by the owner into the dam safety emergency action plan of that impounding structure so as to ensure the proper notification of persons downstream and other affected persons or property owners in the event of an emergency condition at the impounding structure.

§ 10.1-606.3. Requirement for development in dam break inundation zones.

A. For any development proposed within the boundaries of a dam break inundation zone that has been mapped in accordance with § 10.1-606.2, the locality shall, as part of a preliminary plan review pursuant to § 15.2-2260, or as part of a plan review pursuant to § 15.2-2259 if no preliminary review has been conducted, (i) review the dam break inundation zone map on file with the locality for the affected impounding structure, (ii) notify the dam owner, and (iii) within 10 days forward a request to the Department of Conservation and Recreation to make a determination of the potential impacts of the proposed development on the spillway design flood standards required of the dam. The Department shall notify the dam owner and the locality of its determination within 45 days of the receipt of the request. Upon receipt of the Department's determination, the locality shall complete the review in accordance with § 15.2-2259 or 15.2-2260. If a locality has not received a determination within 45 days of the Department's receipt of the request, the Department shall be deemed to have no comments, and the locality shall complete its review. Such inaction by the Department shall not affect the Board's authority to regulate the impounding structure in accordance with this article.

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.

The developer or subdivider shall provide the dam owner and all affected localities with information necessary for the dam owner to update the dam break inundation zone map to reflect any new development within the dam break inundation zone following completion of the development.

The requirements of this subsection shall not apply to any development proposed downstream of a dam for which a dam break inundation zone map is not on file with the locality as of the time of the official submission of a development plan to the locality.

B. The locality is authorized to map the dam break inundation zone in accordance with criteria set out in the Virginia Impounding Structure Regulations (4VAC 50-20) and recover the costs of such

mapping from the owner of an impounding structure for which a dam break inundation zone map is not on file with the locality and a map has not been prepared by the impounding structure owner.

C. This section shall not be construed to supersede or conflict with the authority granted to the Department of Mines, Minerals and Energy for the regulation of mineral extraction activities in the Commonwealth as set out in Title 45.1. Nothing in this section shall be interpreted to permit the impairment of a vested right in accordance with § 15.2-2307.

Appendix 2
Applicable *Impounding Structure Regulations* Authorities

The *Impounding Structure Regulations* contain the following authorities applicable to this guidance:

4VAC50-20-50. Performance standards required for impounding structures.

B. The spillway design flood (SDF) represents the largest flood that need be considered in the evaluation of the performance for a given project. The impounding structure shall perform so as to safely pass the appropriate SDF. Reductions in the established SDF may be evaluated through the use of incremental damage analysis pursuant to 4VAC50-20-52. The SDF established for an impounding structure shall not be less than those standards established elsewhere by state law or regulations, including but not limited to the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870). Due to potential for future development in the dam break inundation zone that would necessitate higher spillway design flood standards or other considerations, owners may find it advisable to consider a higher spillway design flood standard than is required.

C. PMF: Probable Maximum Flood is the flood that might be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the region. The PMF shall be calculated from the probable maximum precipitation (PMP) derived from the Probable Maximum Precipitation Study for Virginia (and associated PMP Evaluation Tool and Database) (November 2015). The owner's engineer must develop PMF hydrographs for 6-, 12-, and 24-hour durations. The hydrograph that creates the largest peak outflow is to be used to determine capacity for nonfailure and failure analysis. Present and planned land-use conditions shall be considered in determining the runoff characteristics of the drainage area. …

H. PMP: Probable maximum precipitation means the theoretically greatest depth of precipitation for a given duration that is meteorologically possible over a given size storm area at a particular geographical location at a particular time of year with no allowance made for future long-term climatic trends. In practice, this is derived by storm transposition and moisture adjustment to observed storm patterns. In Virginia, the 0.9 PMP is meant to characterize the maximum recorded rainfall event within the Commonwealth.

DOCUMENTS INCORPORATED BY REFERENCE (4VAC50-20)
Probable Maximum Precipitation Study for Virginia (and associated PMP Evaluation Tool and Database), Prepared for the Virginia Department of Conservation and Recreation by Applied Weather Associates, LLC, November 2015

4VAC50-20-54. Dam Break Inundation Zone Mapping.

A. Dam break inundation zone maps and analyses shall be provided to the department, except as provided for in 4VAC50-20-51, to meet the requirements set out in 4VAC50-20-40, 4VAC50-20-175, and 4VAC50-20-177, as applicable. In accordance with subsection G of this section, a simplified dam break inundation zone map and analysis may be completed by the department and shall be provided to the impounding structure's owner to assist such owner in complying with the requirements of this chapter. All analyses shall be completed in accordance with 4VAC50-20-20 D.

B. The location of the end of the inundation mapping should be indicated where the water surface elevation of the dam break inundation zone and the water surface elevation of the spillway design flood during an impounding structure nonfailure event converge to within one foot of each other. The inundation maps shall be supplemented with water surface profiles showing the peak water surface elevation prior to failure and the peak water surface elevation after failure.

C. All inundation zone map(s) shall be signed and sealed by a licensed professional engineer.

D. Present and planned land-use for which a development plan has been officially approved by the locality in the dam break inundation zones downstream from the impounding structure shall be considered in determining the classification.

E. For determining the hazard potential classification, an analysis including, but not limited to, those hazards created by flood and nonflood dam failures shall be considered. At a minimum, the following shall be provided to the department:

1. A sunny day dam break analysis utilizing the volume retained at the normal or typical water surface elevation of the impounding structure;

2. A dam break analysis utilizing the spillway design flood with a dam failure;

3. An analysis utilizing the spillway design flood without a dam failure; and

4. A dam break analysis utilizing the probable maximum flood with a dam failure.

F. To meet the Emergency Action Plan requirements set out in 4VAC50-20-175 and the Emergency Preparedness Plan requirements set out in 4VAC50-20-177, all owners of impounding structures shall provide dam break inundation zone map(s) representing the impacts that would occur with both a sunny day dam failure and a probable maximum flood with a dam failure.

1. The map(s) shall be developed at a scale sufficient to graphically display downstream inhabited areas and structures, roads, public utilities that may be affected, and other pertinent structures within the identified inundation area. In coordination with the local organization for emergency management, a list of downstream inundation zone property owners and occupants, including telephone numbers may be plotted on the map or may be provided with the map for reference during an emergency.

2. Each map shall include the following statement: "The information contained in this map is prepared for use in notification of downstream property owners by emergency management personnel." …

4VAC50-20-20. General Provisions.

… D. All engineering analyses required by this chapter, including but not limited to, plans, specifications, hydrology, hydraulics and inspections shall be conducted or overseen by and bear the seal of a professional engineer licensed to practice in Virginia.

E. Design, inspection and maintenance of impounding structures shall be conducted utilizing competent, experienced, engineering judgment that takes into consideration factors including but not limited to local topography and meteorological conditions. …

4VAC50-20-40. Hazard Potential Classifications of Impounding Structures.

⋯ C. To support the appropriate hazard potential classification, dam break analysis shall be conducted by the owner's engineer or the department in accordance with one of the following alternatives and utilizing procedures set out in 4VAC50-20-54. ⋯

2. The owner may propose a hazard potential classification that shall be subject to approval by the board. To support the proposed hazard potential classification, an analysis shall be conducted by the owner's engineer and submitted to the department. The hazard potential classification shall be certified by the owner. …

4VAC50-20-105. Regular Operation and Maintenance Certificates.

Part III. Certificate Requirements

A. A Regular Operation and Maintenance Certificate is required for an impounding structure. …

C. Any owner of an impounding structure that does not have a Regular Operation and Maintenance Certificate or any owner renewing a Regular Operation and Maintenance Certificate shall file an Operation and Maintenance Certificate Application. A form for the application is available from

the department (Operation and Maintenance Certificate Application for Virginia Regulated Impounding Structures). Such application shall be signed by the owner and signed and sealed by a licensed professional engineer. The following information shall be submitted on or with the application:

1. The application shall include the following required information: …

b. The proposed hazard potential classification; …

i. A statement as to whether or not the current hazard potential classification for the impounding structure is appropriate and whether or not additional work is needed to make an appropriate hazard potential designation; …

k. Certification by the owner's engineer that the Operation and Maintenance Certificate Application information provided pursuant to subdivision 1 of this subsection is true and correct in their professional judgment. Such certification shall include the engineer's signature, printed name, Virginia number, date, and the engineer's Virginia seal; and

l. Owner's signature certifying the Operation and Maintenance Certificate Application information provided pursuant to subdivision 1 of this subsection and that the operation and maintenance plan and schedule shall be conducted in accordance with this chapter. …

3. An Emergency Action Plan in accordance with 4VAC50-20-175 or an Emergency Preparedness Plan in accordance with 4VAC50-20-177 and evidence that the required copies of such plan have been submitted to the local organization for emergency management and the Virginia Department of Emergency Management; …

F. The owner of an impounding structure shall notify the department immediately of any change in the use of the area downstream that would impose hazard to life or property in the event of failure.

4VAC50-20-175. Emergency Action Plan (EAP) for High and Significant Hazard Potential Impounding Structures.

A. In order to protect life during potential emergency conditions at an impounding structure, and to ensure effective, timely action is taken should an impounding structure emergency occur, an EAP shall be required for each High and Significant Hazard Potential impounding structure. …

B. It is the impounding structure owner's responsibility to develop, maintain, exercise, and implement a site-specific EAP.

C. An EAP shall be submitted every six years. The EAP shall be submitted with the owner's submittal of their Regular Operation and Maintenance Certificate application (Operation and Maintenance Certificate Application for Virginia Regulated Impounding Structures).

D. The owner shall update and resubmit the EAP immediately upon becoming aware of necessary changes to keep the EAP workable. Should an impounding structure be reclassified, an EAP in accordance with this section shall be submitted. …

G. An EAP shall contain the following seven basic elements unless otherwise specified in this subsection. …

5. Dam Break Inundation Maps. The EAP shall include dam break inundation maps developed in accordance with 4VAC50-20-54.

4VAC50-20-177. Emergency Preparedness Plan for Low Hazard Impounding Structures.

Low Hazard impounding structures shall provide information for emergency preparedness to the department, the local organization for emergency management and the Virginia Department of Emergency Management. A form for the submission is available from the department (Emergency Preparedness Plan for Low Hazard Virginia Regulated Impounding Structures). The information shall include, but not be limited, to the following:

1. Name and location information for the impounding structure including city or county and latitude and longitude;

2. Name of owner and operator and associated contact information including residential and business telephone numbers and other means of communication;

3. Contact information for relevant emergency responders including the following:

a. Local dispatch center or centers governing the impounding structure's dam break inundation zone; and

b. City or county emergency services coordinator's name or names;

4. Procedures for notifying downstream property owners or occupants potentially impacted by the impounding structure's failure;

5. A dam break inundation zone map completed in accordance with 4VAC50-20-54 and evidence that:

a. Such map has been filed 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; and

b. Required copies of such plan have been submitted to the local organization for emergency management and the Virginia Department of Emergency Management; and

6. Certification of the accuracy of the plan by the owner.

Appendix 3

Review of New Probable Maximum Precipitation Values (Effective March 23, 2016)
Using the PMP Evaluation Tool

Name of Dam (Print): _____; Inventory Number for Dam: _____; Dam in County or City: _____

CERTIFICATION BY OWNER'S ENGINEER

I certify that I have evaluated the new probable maximum precipitation (PMP) values, and have found that each of the governing PMP values for the 6-, 12-, and 24-hour durations have decreased from previously utilized HMR PMP values or that the PMP value for the controlling storm has decreased from previously utilized HMR values. I therefore find that the original dam break inundation zone map and the emergency action plan/ emergency preparedness plan on file remain protective of public safety. I have attached a completed copy of the *Virginia PMP 2015 Watershed Calculation Spreadsheet* and my supporting calculations to serve as the confirmation record. Further, I have notified the impounding structure owner of my findings.

Signed: _____ Virginia Number: _____
Professional Engineer's Signature Print Name

This _____ day of _____ , 20 _____ .

Engineer's Virginia Seal:

CERTIFICATION BY OWNER

I, as the Owner of the impounding structure, certify that my engineer has evaluated the new probable maximum precipitation (PMP) values and advised me of the findings. I recognize that each of the governing PMP values for the 6-, 12-, and 24-hour durations have decreased from previously utilized HMR PMP values or that the PMP value for the controlling storm has decreased from previously utilized HMR values. In addition, I also certify that the original dam break inundation zone map and the emergency action plan/ emergency preparedness plan on file remain protective of public safety. I agree that should an evaluation be required in accordance with § 10.1-606.3 of the *Code of Virginia* to assess any development proposed within the boundaries of the dam break inundation zone below this impounding structure, that I shall upon notification from the Department of Conservation and Recreation immediately initiate efforts to update the dam break inundation zone map for my impounding structure so that a refined impact of the development may be assessed.

Signed: _____
Owner's Signature Print Name

This _____ day of _____ , 20 _____ .

Mail the executed form to the appropriate Department of Conservation and Recreation
Division of Dam Safety and Floodplain Management Regional Engineer

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