

Technical Memos & Hot Topics

Identifying and Closing Gaps

MDE Dam Owners Workshop

16 March 2021

John Roche, P.E.

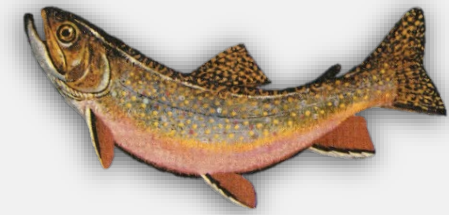


Maryland
Department of
the Environment



MDE Dam Owners Workshop, March 2021

HOT TOPICS



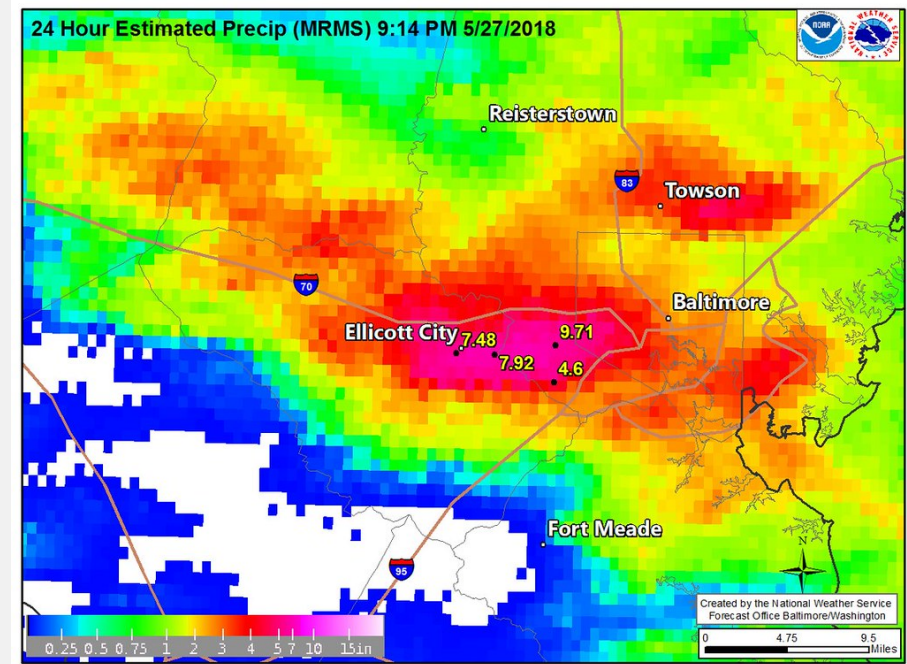
Thermal Reviews: Ponds in Use III Waters

- MDE Previously allowed local discretion under certain conditions to review/approve ponds in Use III
 - MDE Attorneys advised Dam Safety that COMAR is clear, we cannot offer discretion.
- All ponds in Use III waters must be submitted for Dam Safety Permit
 - Submit via the Joint Permit Application Process described on MDE website
 - County responsible for SWM review, grading permits, erosion & sediment control approvals
 - Ponds exempt from MD378 approvals (e.g., under 4 ft) do not need Dam Safety review/permitting
- Regulatory change under way to modify the requirement for Dam Safety to permit ponds in Use III
 - Summer 2021 likely effective date
- “Thermal Best Practices” document needed from DNR



Impact of a Changing Climate

- We cannot deny that the climate is changing
 - Storms are more intense, bigger temperature swings, prolonged drought
- Are changes necessary in design storms?
 - Annual exceedance probability (AEP) and duration change?
 - Should NOAA Atlas14 be updated?
 - Should design storm for dam safety = design storm for SWM?
- Dam Safety is pursuing grant funding for a state-specific PMP study
 - Will include an evaluation of climate change factors
 - Includes evaluation of temporal distribution of rainfall
 - May also include evaluation of storms with lesser AEP (i.e., 10, 100-yr 24-hr storms)



Dams are Aging, Maintenance is Lacking

- Average age of inventory dams in Maryland is over 50 years
- Increasingly finding ponds with new owners who have no idea of required maintenance, obligations
- Who is responsible for inspections/enforcement?
- Reminder that “farm ponds” are not exempt from necessary maintenance activities
- Encourage an “all-hands” approach to ensure that dams are maintained in an acceptable condition, repaired where necessary, and removed if no longer providing value



MDE File Photos: Martin Farm Dam. Harford County.

Closing the Gaps in MD378: Time to Update

- MDE and State NRCS agree MD378 is in need of an update
- Update will require a change in COMAR to reference new standard(s)
- MDE prefers to “own” the document in whole or in part
 - Helps facilitate changes out-of-cycle with changes to national 378 standard
- “New 378” will require hard work, careful thought
 - Workgroups/workshops will be necessary to ensure technical adequacy and consensus on standards.
 - First order of business – submit all your comments, suggestions, grievances, examples of something “better” to John.Roche@Maryland.gov
- Once a “New 378” is completed we will need to:
 - Develop criteria for “grandfathering”
 - Develop a schedule for periodic review/updates





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GUIDANCE DOCUMENTS

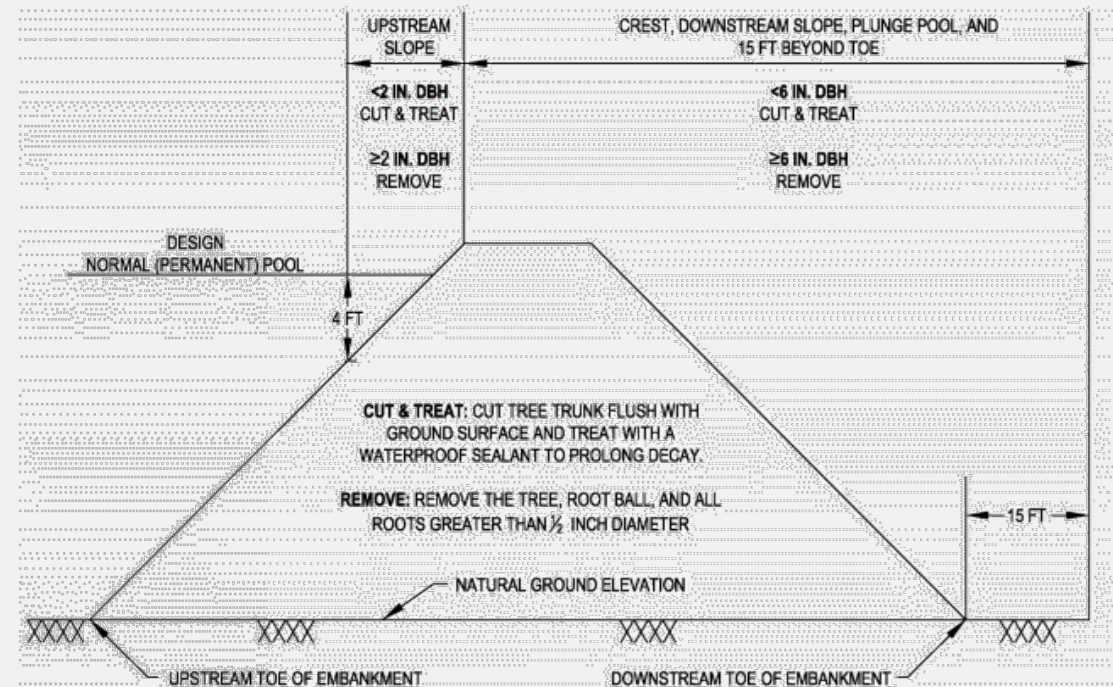
- Dam Safety Division of Water Resources Administration formed in 1978
 - Regulations revised and remain largely unchanged
- MD378 does not meet current needs.
 - Could be clearer
 - Doesn't address many current issues
 - Dam Safety Policy memos clarify acceptable design criteria in accordance with existing regulations (and apply to small ponds and most dams)



MDE File Photos.

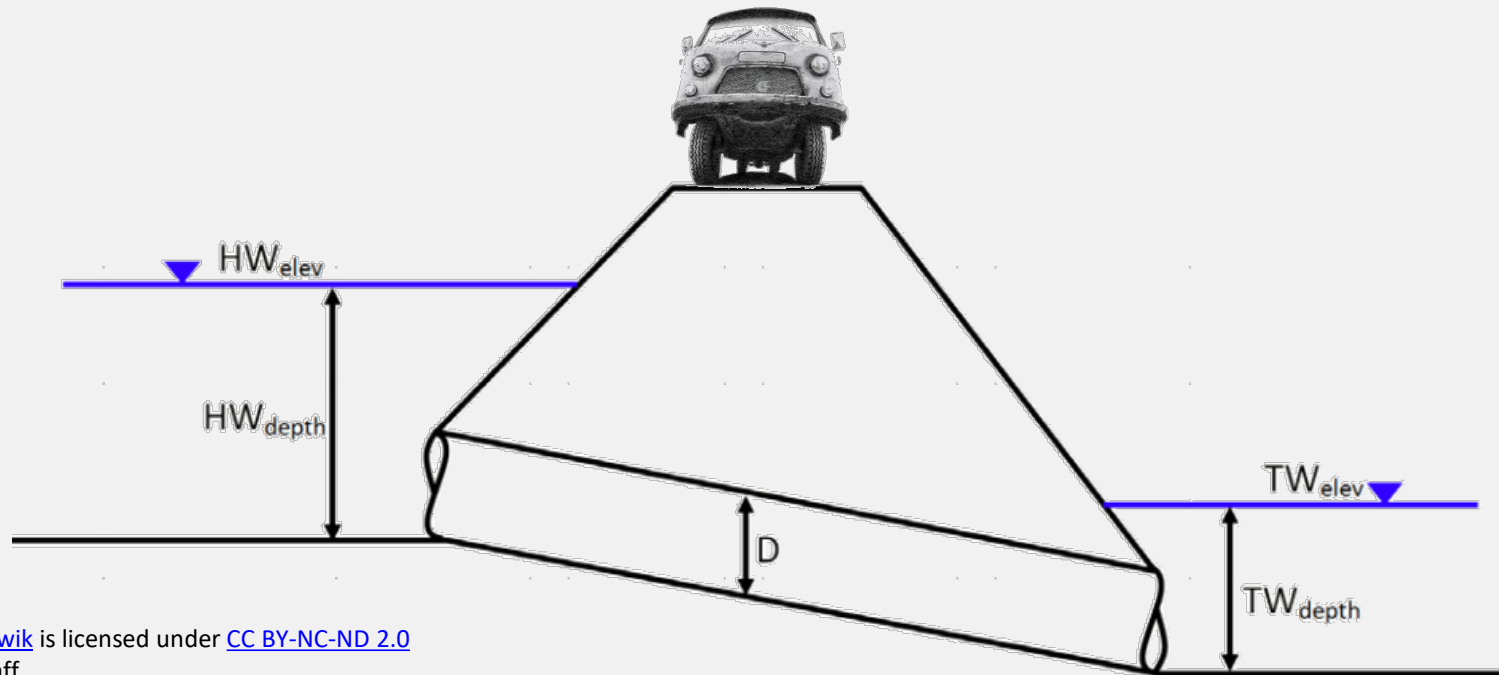
Dam Safety Policy Memo 1: Maintenance and Repair, Trees and Woody Vegetation

- 2/25/2019, updated 8/3/2020
- Replaces and expands on former 1993 memo “Plantings on Roadway Dams”
- Clarifies tree removal requirements
- Provides detail for removal



Dam Safety Policy Memo 2: Roadway/Railroad Embankment with Culvert Crossing

- 6/11/2019, updated 10/9/2019 and 2/21/2020
- Issued to resolve confusion in existing MD 378 language for road embankments
- Adds clarifying definitions to ensure consistent application



Dam Safety Policy Memo 3: Impoundments Adjacent to Steep Slopes

- 5/23/2019
- Discusses potential dangers of siting a dam/pond at crest of steep slope



Dam Safety Policy Memo 4: Hazard Classification – Small Impoundments

- 4/5/2019
- Provides for simplified hazard classification for certain low height, low storage volume dams.
- Supplements “Guidance for Completing a Dam Breach Analysis for Small Ponds and Dams in Maryland”



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Dam Safety Policy Memo 5: Best Practices for Construction of Dams and Small Ponds

- Currently under development
- Presented in 2019 MDE Seminar
- Supplements MD378 “Specifications” which lack detail, are not comprehensive
- Intended to aid designers, contractors, inspectors



MDE File Photos: Mt. Soma Reservoir, Bel Air, MD.



Dam Safety Policy Memo 6: Dam Decommissioning

- 5/23/2019
- Provides general concepts to consider when planning a dam removal
- Provides criteria for appropriate design of controlled breaches



MDE File Photo: Martin Farm Dam. Harford County. Controlled Breach



Dam Safety Policy Memo 7: Impoundment Filling Plans

- 5/23/2019
- Impoundment filling plans required as permit condition
- Provides clarification on considerations for first filling and content of filling plan.



Dam Safety Policy Memo 8: Structural Considerations for Risers and Trash Racks

- Under Development
- Multi-stakeholder input received
- Clarifies structural design guidance where COMAR 26.17.04.05(A)(3) and MD378 lack important details



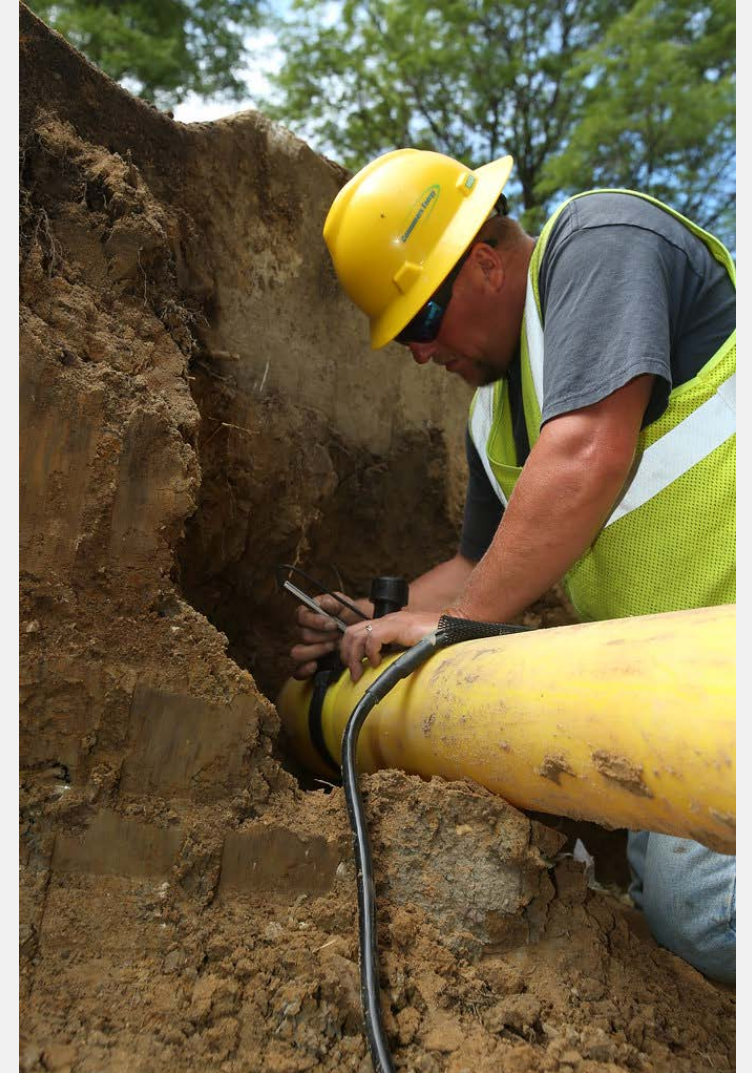
Dam Safety Policy Memo 9: Water Storage and Collection Tanks

- 2/24/2020, updated 8/3/2020
- Addresses broad definition of “dam” in regulations
- Discusses when Dam Safety involvement may be necessary for permitting water storage and collection tanks.



Dam Safety Policy Memo 10: Utilities in Dam Embankments

- 7/29/2019
- Addresses treatment of utilities within and near dam embankments



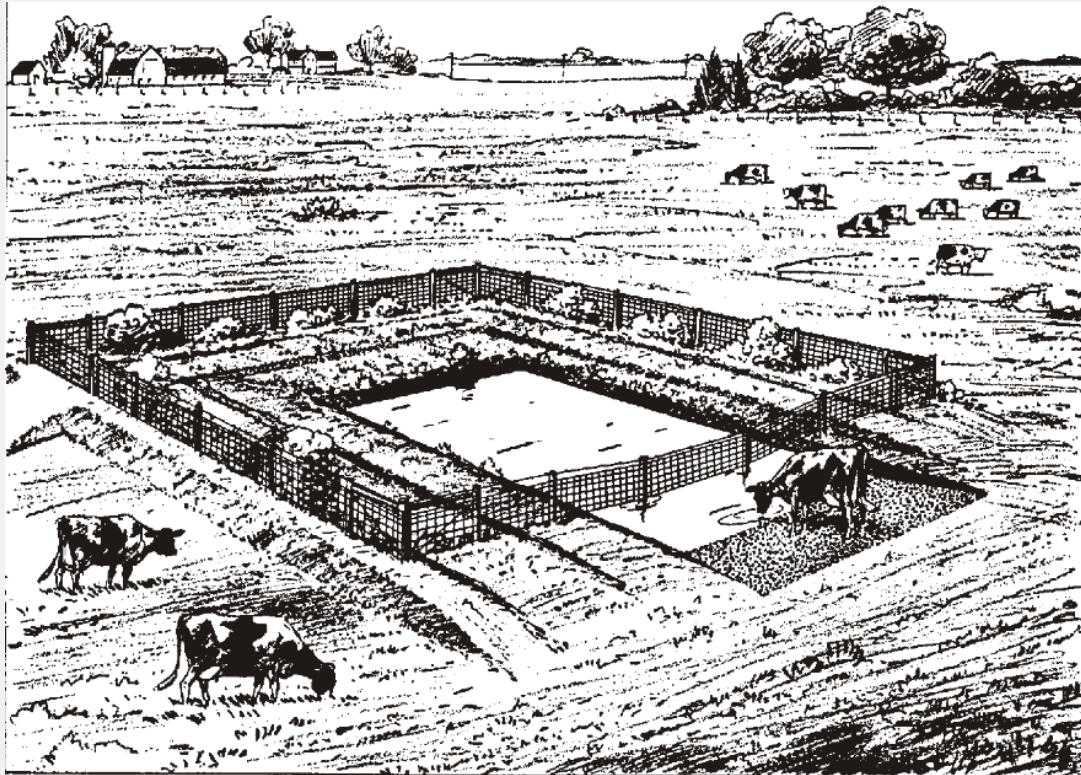
Dam Safety Policy Memo 11: Activities Not Requiring Dam Safety Permit

- 7/29/2019
- Provides clarification of activities considered normal maintenance (no permit/authorization required) and those considered repairs/modifications (permit/authorization required)



Dam Safety Policy Memo 12: Excavated Ponds

- Under Development
- Multi-stakeholder input received
- Clarifies potentially contradictory language in MD378



Future Work Planned

- Project Review Guide
 - Provides clarity on expected submissions for permitting
 - COMAR 26.17.05.05(A)(3)
- Smart Pond Guidance
- Weir Wall Design Guidance
 - MD378 refers to NEH Sec. 11 for Drop Spillways
 - NRCS rescinded this in 1986
 - 174 pages, can pertinent parts be pulled out and simplified?
- Geotechnical Investigations / Design Guidance
 - Both COMAR 26.17.05.05(A)(3) and MD378 do not offer adequate detail
- Filter Diaphragm Design Aid



Future Work Planned

- Considerations for Dam Siting
 - Address issues with ability to properly maintain dam and prevent hydraulic trespassing
- Screening Level Risk Analysis Guidance [For larger dams]



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Future Work Unplanned

– What else do YOU need?



"Uncle Sam" by [uhuru1701](#) is licensed under [CC BY-SA 2.0](#)

Thank You

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