COLOR LEGEND

EXEMPT (LOCAL SWM APPROVAL AUTHORITY ONLY)

MDE DAM SAFETY SMALL POND APPROVAL AUTHORITY

CECIL SCD SMALL POND APPROVAL AUTHORITY

February 25, 2025

MDE Stormwater, Dam Safety, and Flood Management Program
Flow Chart for Determining Embankment Design Category and Approval Authority

START HERE

STEP 1
FOR PONDS WITH WEIR SPILLWAY ONLY: START HERE

STEP 2
Does the pipe conduit have a riser or control structure[1]?
NO → **STEP 3**
YES → **STEP 9**

STEP 3
Does the pipe conduit through the embankment traverse a roadway or railroad?
YES → **STEP 4**
NO → **STEP 9**

STEP 4
Is there a permanent pool > 3ft?
NO → **STEP 5**
YES → **STEP 10**

STEP 5
Is HW-TW ≤ 10 ft per Policy Memo #2?
HW-TW:_____
YES → **STEP 10**
NO → **STEP 6**

STEP 6
Is HW_{depth}/D≤ 2 per Policy Memo #2?
HW_{depth}:_____ / D:_____=_____
YES → **STEP 10**
NO → **STEP 7**

STEP 7
Does the embankment meet the minimum width required for SUPERWIDE classification per Table 1 in Policy Memo #5?
H:_____; Vw:_____;
min. W_____; actual W:_____
YES → **STEP 8**
NO → **STEP 11**

STEP 8
Is HW_{depth}/D≤ 4 per Policy Memo #2?
YES → **STEP 10**
NO → **STEP 11**

STEP 9
Is the pipe conduit the spillway for a SWM BMP?
NO → **STEP 10**
YES → **STEP 11**

STEP 10
CULVERT.
SWM approval authority.

STEP 11
Is maximum storage volume[2] ≥ 50 ac-ft?
MSV = _____ ac-ft
YES → **STEP 12**
NO → **STEP 14**

STEP 12
Is the principal spillway a weir [wall]?
NO → **STEP 13**
YES → **STEP 15**

STEP 13
Does pond meet the criteria for SUPERWIDE EMBANKMENT per Policy Memo #5"?
YES → **STEP 15**
NO → **STEP 15**

STEP 15
SUPERWIDE DAM.
Submit JPA for MDE Dam Safety review.

STEP 15
DAM.
Submit JPA for MDE Dam Safety review.

STEP 14
Is contributing drainage area ≥ 640 acres?
DA = _____
YES → **STEP 15**
NO → **STEP 16**

STEP 16
Is embankment height[4] ≥ 20 ft?
embankment height = _____ ft
YES → **STEP 17**
NO → **STEP 18**

STEP 17
DAM. Submit JPA for MDE dam safety review.
Prior to submitting determine whether dam is a superwide embankment per Policy Memo #5 and, if applicable, follow superwide dam requirements. If pond is constructed on fill, follow dam safety design/ review criteria (under development) for ponds constructed on fill.

STEP 18
Is maximum active storage volume[3] < 8,000 cf?
brim up storage = _____ cf
YES → **STEP 19**
NO → **STEP 20**

STEP 19
MICRO-POND/ESD FACILITY.
Exempt from small pond approval.
Review by SWM approval authority.

STEP 20
Is embankment fill around reservoir rim ≤ 2 ft above natural ground surface per Policy Memo #13?
YES → **STEP 21**
NO → **STEP 24**

STEP 21
Is the projection of L horizontally downstream from the pond bottom below the existing or proposed ground per Policy Memo #13?
H = top of dam:_____- pond bottom:_____ = _____
L = 10 H + 20 ft = _____
YES → **STEP 22**
NO → **STEP 24**

STEP 22
Is the existing or proposed downstream ground slope > 10% at any point below elevation design WSEL + 1 foot and within projection of L?
NO → **STEP 23**
YES → **STEP 24**

STEP 23
EXCAVATED SMALL POND.
Design as an excavated pond.
Exempt from small pond approval.
Review by SWM approval authority.

STEP 24
Is embankment height[4] < 4 ft?
embankment height = _____ft
YES → **STEP 26**
NO → **STEP 25**

STEP 25
Is maximum active storage volume[3] < 40,000 cf and embankment height[4] ≤ 6 ft?
MASV=_____ cf and embankmen = _____ ft
YES → **STEP 26**
NO → **STEP 31**

STEP 26
Is structure a small impoundment per Policy Memo #4?
top of dam: _____ - upstream toe:_____ = _____
top of dam: _____ - downstream toe:_____ = _____
maximum storage volume:_____
YES → **STEP 29**
NO → **STEP 27**

STEP 27
Does pond meet the criteria for SUPERWIDE EMBANKMENT per Policy Memo #5?
YES → **STEP 29**
NO → **STEP 28**

STEP 28
Complete dam breach analysis. Is pond low hazard?
YES → **STEP 29**
NO → **STEP 30**

STEP 29
EXEMPT SMALL POND.
Exempt from small pond approval.
Follow criteria for Chapter 3 practice.
Review by SWM approval authority.

STEP 30
DAM.
Submit JPA for MDE Dam Safety review.

FOR PONDS WITH WEIR SPILLWAY ONLY: SKIP THIS ROW

STEP 31
Does pond meet the criteria for SUPERWIDE EMBANKMENT per Policy Memo #5?
YES → **STEP 32**
NO → **STEP 35**

STEP 32
Is pond located in Jones Fall, Gwynn's Falls, or Herring Run watersheds?
NO → **STEP 33**
YES → **STEP 34**

STEP 33
SUPERWIDE SMALL POND.
Design to meet superwide small pond/ dam requirements per Policy Memo #5.
Review by small pond approval authority.

STEP 34
SUPERWIDE SMALL POND in regulated watershed.
Design to meet superwide small pond/dam requirements per Policy Memo #5.
Submit JPA for MDE Dam Safety review.

STEP 35
Is structure a small impoundment per Policy Memo #4?
top of dam: _____ - upstream toe:_____ = _____ft
top of dam: _____ - downstream toe:_____ = _____ft
MASV:_____ ac-ft
YES → **STEP 37**
NO → **STEP 36**

STEP 36
Complete dam breach analysis. Is pond low hazard?
YES → **STEP 37**
NO → **STEP 40**

STEP 37
Is pond located in Jones Fall, Gwynn's Falls, or Herring Run watersheds?
NO → **STEP 38**
YES → **STEP 39**

STEP 38
SMALL POND.
Design as regular small pond.
Review by small pond approval authority.

STEP 39
SMALL POND in regulated watershed.
Design as regular small pond.
Submit JPA for MDE Dam Safety review.

STEP 40
DAM.
Submit JPA for MDE Dam Safety review.

REVISIONS BY CSCD

1. 2/28/25 ADDED COLOR LEGEND, TEXT PERTAINING TO STEPS, AND COLOR CODING

Definitions:

[1]Control Structure: Any device that controls the flow into the pipe including, but not limited to a riser, orifice plate, weir, or gabion baskets. An open culvert is not considered a control structure provided the pipe diameter is uniform through the embankment or increases in diameter in the downstream direction when additional flow is added.

[2]Maximum Storage Volume ("Brim Full" or "Brim Up"): The National Inventory of Dams defines maximum storage as the total storage space in a reservoir below the maximum attainable water surface elevation. This is the "brim full" volume. If the probable maximum flood (PMF) does not fill the storage space, then the PMF volume can be used as the maximum storage volume, and using the brim full volume would be conservatively acceptable. The upper limit of the storage volume is the top of dam/incipient point of overflow, not the invert of the emergency spillway. For media ponds, include the volume of water in the pore space (voids) of the filter media, which can be approximated using a porosity of 0.4.

[3]Maximum Active Storage Volume: This is the portion of the maximum storage volume that would contribute to the breach volume. Dead storage below the elevation of the downstream toe of embankment that does not contribute to the breach volume may be excluded from the maximum storage volume for the referenced purposes. For media ponds, if the filter media is part of the embankment height, the maximum storage volume includes the volume of water in the pore space (voids) of the filter media, which can be approximated using a porosity of 0.4.

[4]Embankment height has been defined by the MDE Dam Safety Division as the vertical distance between the lowest point of fill on the upstream face of the dam to the lowest point on the crest of the dam (excluding the auxiliary spillway). Oftentimes this is found at the principal spillway location but can be at other locations along the embankment. For the purposes of this definition, the lowest point of fill includes human-placed materials such as spillway conduits and cradles. Refer to MDE Dam Safety Policy Memorandum No. 22 – Determining Embankment Height for background information and diagrams.

Note regarding Ponds in Use III and Use IV watersheds:

Effective June 14, 2021, small ponds located in Use III and IV watersheds no longer require a permit from the Dam Safety Division. Thermal concerns in accordance with DNR guidance must be addressed and upheld by the small pond approval authority.

References:

USDA Natural Resources Conservation Service Maryland Conservation Practice Standard Pond Code 378, January 2000 or latest revision.

MDE Dam Safety Policy Memorandum No. 2 - Roadway/Railroad Embankment with Culvert Crossing, February 15, 2022 or latest revision.

MDE Dam Safety Policy Memorandum No. 4 - Hazard Classification of Small Impoundments, January 29, 2025 or latest revision.

MDE Dam Safety Policy Memorandum No. 5 - Superwide Roadway/Railroad Embankments, February 16, 2022 or latest revision.

MDE Dam Safety Policy Memorandum No. 13 - Excavated Ponds, April 24, 2023 or latest revision.

MDE Dam Safety Policy Memorandum No. 20 - Spillways Discharging to Storm Drain Networks, October 27, 2023 or latest revision.

MDE Dam Safety Policy Memorandum No. 22 – Determining Embankment Height, January 29, 2025 or latest revision.

MDE Dam Safety Policy Memorandum No. 23 – Small Ponds Not Requiring Small Pond Approval, January 29, 2025 or latest revision.