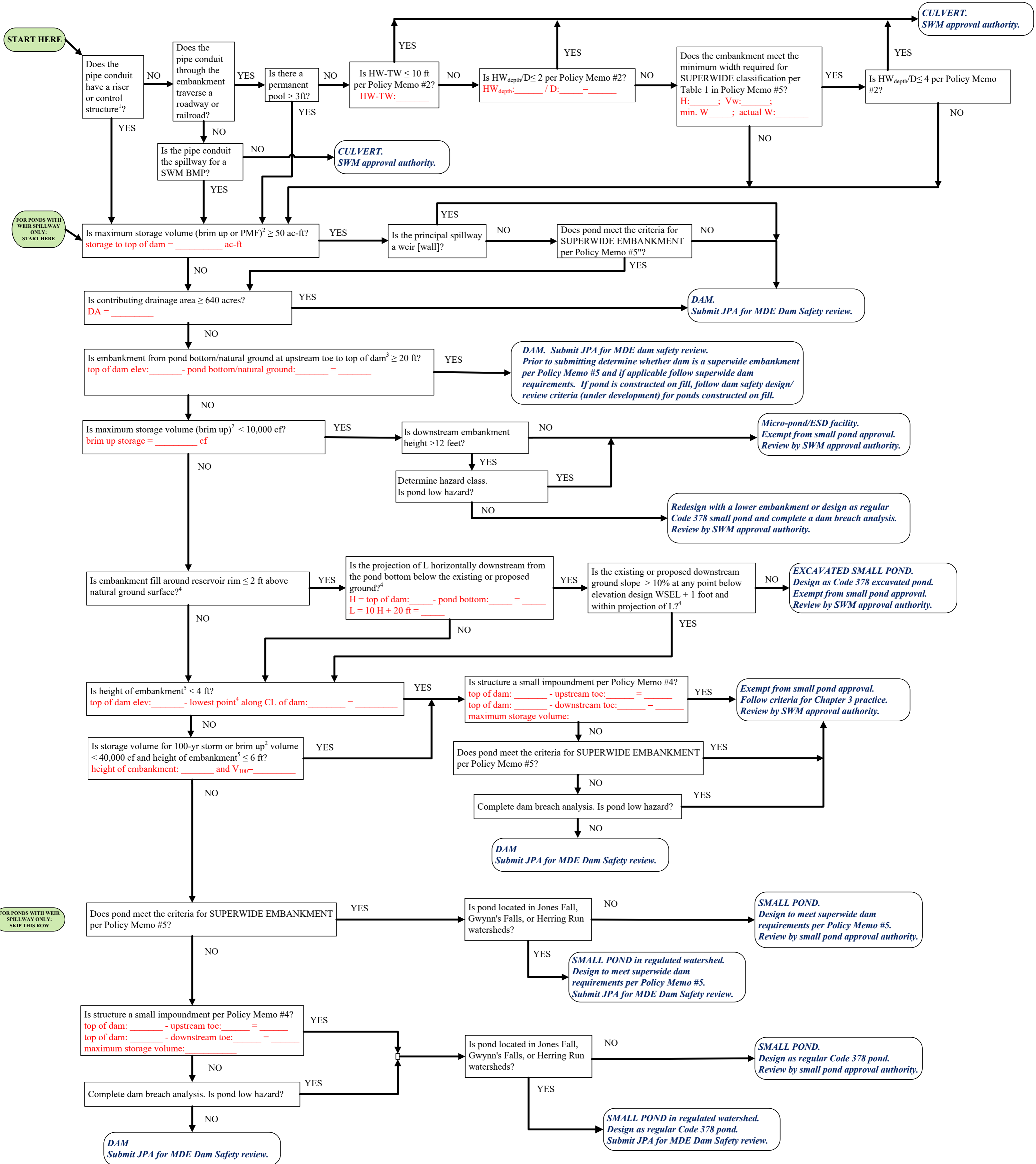




**DRAFT July 20, 2024**  
**MDE Stormwater, Dam Safety, and Flood Management Program**  
**Flow Chart for Determining Embankment Design Category**  
**and Approval Authority**



## **Definitions:**

- <sup>1</sup>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.
- <sup>2</sup>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. For media ponds, this includes the storage volume in the voids of the media (per Policy Memos #3 and #4). This is the “brim full” volume unless the probable maximum flood (PMF) (27 inches in Maryland) does not fill the pond. It is conservative to consider brim full volume. The upper limit of the storage volume is the top of dam/incipient point of overflow, not the invert of the emergency spillway.
- <sup>3</sup>This is the regulatory height which is “measured vertically from the lowest point on the top of the dam to the lowest point on the upstream toe of the dam.” The lowest point refers to the lowest point of excavation into natural ground, anywhere along the dam. Note that natural ground will be different from existing ground if the pond is constructed on fill. In unfavorable situations where the pond is constructed on fill, the lower limit is measured from the lowest point of fill where the upstream embankment slope intercepts natural ground. The upper limit or top of dam is the incipient point of overflow, not the invert of the emergency spillway.
- <sup>4</sup>Refer to MDE Dam Safety Policy Memo No. 13 - Excavated Ponds.
- <sup>5</sup>Height of Embankment: Top of the dam to the lowest point of excavation, excluding the cutoff trench, along the center line of the dam. This is the NRCS Code 378 definition. Note that this usually, but not necessarily, coincides with the location of the principal spillway.

### 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, April 5, 2019 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.