



# MAFSM

The Maryland Association of Floodplain and Stormwater Managers

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Maryland Department of the Environment

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Dear Mr. Barr and Mr. Knapp:

The Maryland Association of Floodplain and Stormwater Managers (MAFSM) appreciates the effort the Maryland Department of the Environment (MDE) has taken to create and consult a Stakeholder Consultation Group with representation from academia, government, conservation districts, private sector, and non-profit professional associations as part of their Advancing Stormwater Resiliency in Maryland (A-StoRM) efforts. This letter provides feedback on two proposed conceptual changes to the State stormwater management requirements, as well as comments on general stormwater management.

Necolle Maccherone, immediate past Chair of MAFSM and Bill Musico, Stormwater Chair, attended the MDE-hosted Stakeholder Consultation Group meetings as a member and proxy. The following suggestions were drafted by Ms. Maccherone, Mr. Musico, and Jason Coleman (MAFSM Secretary) and vetted with the MAFSM Board for consensus. We respectfully request MDE consider the following:

**Proposed:** *Update design storm rainfall depths using 2006 Atlas 14 average values for each county. MDE has identified the National Oceanic Atmospheric Administration's (NOAA) Atlas 14, Precipitation-Frequency Atlas of the United States, Volume 2, Version 3.0 (Geoffrey M. Bonnin et al., 2006) (hereafter referred to as Atlas 14) as the most recent precipitation information for Maryland. MDE's conceptual proposal is to replace the design storm rainfall depths currently listed in Table 2.2 of the Design Manual with an updated table based on the Atlas 14 data.*

**MAFSM Feedback:** MAFSM agrees that using more up-to-date information for design storm rainfall depths is beneficial. When updating legislation, consider using language that identifies the issuing agency of the data and refers to the most recent iteration of the data rather than naming Atlas 14 in statute. An update of the current Atlas 14 has recently been congressionally funded with plans to complete for the nation within the next five years, called ATLAS 15. Tying



the legislation language to the most recent dataset is advised and reduces the need to update legislation language frequently.

**Proposed:** *Increase the required ESDv to treat runoff from a rainfall depth of 3 inches. Currently the Design Manual requires a minimum environmental site design volume (ESDv) to be treated based on a rainfall depth of 2.7 inches. Numerous sections, graphs, and examples included in the Design Manual utilize the 2.7-inch standard. Because the Design Manual is incorporated in the Maryland Code of Regulations by reference, an update to the Design Manual will be necessary and will be referenced in the regulations as Supplement 2.*

**MAFSM Feedback:** According to the Design Manual, ESD addresses channel protection requirements when ESD techniques and practices are used to the Maximum Extent Practical to capture, treat, and slowly release the entire runoff volume from 2.7 inches of rainfall. The ESD volume is the increase in runoff volume from wooded conditions to the developed conditions for a specified rainfall amount; currently 2.7 inches.

The goal of this change is to address water quality and stream channel erosion concerns; 2.7 inches of rainfall is the average value for the channel protection requirement in Maryland.

- Average Projected Increase for the 2-Year Storm = 13%
- Current ESD precipitation is 2.7 inches
- Projected ESD precipitation: (2.7 inches X 13%) + 2.7 inches = 3.05 inches
- Suggested value: 3.0 inches

If projected increases bear out, increasing the depth of rain from 2.7" to 3.0" will better match the anticipated depth of rain expected for the 1-year event. It should be considered tying this value to the most recent iteration of the 1-year 24-hour event rather than naming the specific depth in the statute.

**Proposed:** *In addition, MDE welcomes any comments you have on stormwater quantity management beyond the two proposed conceptual changes outlined above. This includes: (1) considering if new information, such as meso-scale precipitation data, should be applied to better characterize rainfall patterns in Maryland; (2) whether MDE should set minimum State standards for conveyance system design; and (3) if shorter duration storms should be incorporated into future State regulatory requirements.*

**MAFSM Feedback:** It has been observed that many of the most destructive and life-threatening floodings have resulted from shorter-duration, high-intensity storm cells moving over smaller watersheds. These shorter-duration storms result in a much lower total rainfall depth when



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compared with the standard 24-hour event, but when the storm cell aligns with a small watershed with a much shorter time-of-concentration the peak flow often exceeds that of a 24-hour event. Additionally, it should be noted that these shorter-duration storms cause their peak flooding to occur minutes after the storm's onset permitting much less time for emergency services.

These suggested changes to the legislation, while likely to create positive outcomes in the stormwater space, are not significant enough to mitigate flooding with the anticipated volume of water from these events and will come with increased cost to implement.


Additionally, we recommend engaging the expertise of the Maryland Hydrology Panel for additional feedback.

Thank you for your consideration.

Sincerely,



Necolle Maccherone, CFM  
MAFSM Member and Immediate Past Chair



Amy G. Moredock, CFM  
MAFSM Chair