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*Saving a National Treasure*

July 18, 2024

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Maryland Department of the Environment  
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*Sent via email to [Stewart.Comstock@Maryland.gov](mailto:Stewart.Comstock@Maryland.gov)*

### **RE: Draft NPDES Permit No. 24-DP-3313, NPDES No. MD0068276 for MDOT SHA**

Dear Mr. Comstock:

The Chesapeake Bay Foundation (CBF) is a 501(c)(3) non-profit organization whose mission is to “Save the Bay” and keep it saved. CBF represents more than 200,000 members and supporters across the country and for over 50 years has been working to restore the Chesapeake Bay and its tributary rivers and streams. On behalf of our nearly 71,000 Maryland members, we thank you for the opportunity to offer comment on the draft National Pollution Discharge Elimination System (NPDES) Permit for the Maryland State Highway Administration (SHA) [hereinafter, the “Draft Permit”].

Roads, highways, and bridges are a significant source of polluted runoff that reaches local rivers, streams, and the Chesapeake Bay. Contaminants from vehicles, construction, and highway maintenance are washed from roads when it rains or snow melts, delivering large amounts of this pollution directly to Maryland waters. As the SHA is responsible for more than 15,000 lane miles and more than 2,600 bridges across the state, this permit and the activities of the SHA it governs play a vital role in achieving Maryland’s pollution reduction goals under the Chesapeake Bay Total Maximum Daily Load (TMDL), as well as local TMDLs.

The recommendations and concerns below reemphasize comments that CBF and our partners have made about previous iterations of the SHA permit, along with recent county and municipal stormwater permits. Generally, the draft permit falls short of achieving the water quality improvements that the Clean Water Act requires from such regulatory tools by relying on outdated rainfall data, prioritizing “check-the-box” mitigation practices that fail to sufficiently reduce

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pollution and sanctioning a decrease in overall mitigation effort from the permit it's proposed to replace (backsliding). In most cases, permit activities do little for habitat preservation and in some cases, damage habitat and further degrade ecosystem function.

We urge MDE to address these concerns detailed below before proceeding to issue a final permit, especially now as Maryland makes plans to recommit to the Chesapeake Bay Agreement, Governor Moore takes leadership of the Chesapeake Bay Executive Council, and MDE prepares for the next round of updates to county and municipal MS4 permits for which this permit ought to be an example.

## **I. THE DRAFT PERMIT DOES NOT ADEQUATELY ACCOUNT FOR INCREASED STORM VOLUME AND INTENSITY OR OTHER CLIMATE CHANGE IMPACTS**

Weather data and modeling continue to show increasing quantities of rainfall and more frequent and severe storms that result from climate change.<sup>1</sup> Stormwater infrastructure designed and constructed decades ago is often inadequate to deal with the volume of storms we see today, resulting in street flooding in urban areas, inundation of sewer connections causing untreated sewage to enter surface waters and back up into homes, and stormwater best management practices being overwhelmed to the point of failure. Scientists report that for every 1 degree Celsius of temperature increase, the atmosphere holds seven percent more moisture that intensifies precipitation.<sup>2</sup> Maryland's stormwater permits must reflect this reality. What has worked in the past can no longer be expected to work in the future.

The draft permit fails to require SHA to manage the higher volumes of stormwater caused by today's climate. It directs SHA to implement the "stormwater management design policies, principles, methods, and practices found in the latest version of the 2000 Maryland Stormwater Design Manual." Yet these policies, principles, methods, and practices are based on rainfall data and related stormwater volume predictions that are out of date. MDE's current effort to overhaul Maryland's stormwater flood management regulations (Advancing Stormwater Resiliency in Maryland, or A-StoRM) recognizes this deficiency. In fact, agencies indicate that the updates to these regulations are expected to result in significant modifications to the current design manual. Given these changing guidelines, MDE should replace static guidelines with dynamic stormwater volume references to this and future permits, including A-StoRM criteria that incorporates MARISA projections that better account for real-time storm frequency and intensity indicators.<sup>3</sup> If

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<sup>1</sup> USGCRP, 2017: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp, doi: 10.7930/J0J964J6.

<sup>2</sup> National Aeronautics and Space Administration, *Steamy Relationships: How Atmospheric Water Vapor Amplifies Earth's Greenhouse Effect*. July 3, 2024. Available at: <https://climate.nasa.gov/explore/ask-nasa-climate/3143/steamy-relationships-how-atmospheric-water-vapor-amplifies-earths-greenhouse-effect/>

<sup>3</sup> The Mid-Atlantic Regional Integrated Sciences and Assessments (MARISA) program was established by NOAA in 2016. Intensity, duration, and frequency ("IDF") curves that are commonly used in engineering practice are based on historical precipitation observations and do not account for recent and projected future changes in the region's climate. MARISA's Intensity, Duration and Frequency curve tool innovates to provide users with

the State's definition of a 1-year, 24-hour rainfall event does not keep up with reality, neither will the capacity of its stormwater management designs. MDE must update the draft permit's requirements to ensure stormwater controls are based on current and projected rainfall data and stormwater volumes.

## **II. THE DRAFT PERMIT DOES NOT ADEQUATELY REDUCE RELIANCE ON IN-STREAM PROJECTS TO MITIGATE STORMWATER POLLUTION**

CBF recognizes and appreciates that the draft permit directs SHA to use green infrastructure to control stormwater. Green infrastructure is a preferred method of addressing statewide stormwater loads, can attenuate severe rainfall and flooding caused by climate change, and is demonstrated by EPA to be generally beneficial to Chesapeake Bay communities.<sup>4</sup> While including green infrastructure in the draft is an improvement over the current permit, the draft does not specify metrics for the number, type, and location of green infrastructure practices that should be used to achieve the permit's management objectives.

Furthermore, alternative practices listed among the permit's eligible BMPs, such as street sweeping and septic system treatments, make it unlikely green infrastructure will actually be installed, because these alternatives often are considered easier to implement and therefore are usually prioritized. Stream restoration, street sweeping and septic system treatments do not directly reduce impervious surface or mitigate impacts of stormwater volume as the MS4 program expects, yet these practices are used extensively under the current permit terms. The reliance on generating impervious acre credits rather than direct restoring impervious acreage undermines the program's intent to minimize impervious surface and fails to achieve the permit program outcomes the Clean Water Act directs.

While green infrastructure and other best management practices – like riparian plantings and removal of unused impervious surfaces – are widely recognized as effective methods to manage stormwater, the draft permit fails to specify a broad range of these strategies, instead relying heavily on invasive and costly stream restorations to satisfy mitigation requirements. SHA prioritizes stream restoration projects to implement environmental site design (ESD), which is required to be used to the maximum extent practicable (MEP).

However, while stream restoration may achieve some nutrient and sediment pollution reductions, it frequently fails to provide biological uplift, and has been known to result in rampant habitat destruction, including removal of mature trees and massive devastation to riparian ecosystems caused during construction. Despite these negative impacts, SHA reports restoring seventy-four percent of equivalent impervious acres (EIA) since 2016

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change factors to model predicted precipitation that could be used to scale design storm depths from existing models to account for future climate change.

<sup>4</sup> [Chesapeake Bay Program funding helps four local communities in designing beneficial green infrastructure projects](#)

through stream restoration.<sup>5</sup> The heavy reliance on this strategy and proportionally minimal investment in far less harmful green infrastructure, reforestation, and impervious surface removal practices significantly limit the overall effectiveness of the agency's stormwater control efforts.

Stream restoration was never intended by the Bay Program's Expert Panel that considered the practice to be the go-to solution to accumulating impervious acre credits. Rather than stand-alone projects, panelists "felt strongly that as a qualifying condition to receive credit, projects have to be part of a comprehensive watershed plan that also addresses the root causes of stream bank erosion: impervious cover."<sup>6</sup> There was also an expectation that projects demonstrate "functional lift" from a biological perspective to improve the ecosystem, further emphasizing the need to address impervious surface in upstream locations that is the source of most downstream temperature, volume, velocity, and contamination issues. Because the restoration protocols are complicated, local and state government, as well as NGO practitioners, do not always have the skills needed to deliver the practice in ways that ensure watershed planning and biological uplift objectives are achieved.

SHA's own actions demonstrate that prioritizing a whole watershed approach to stream restoration can produce valuable wildlife and water quality outcomes. In Washington County, the agency coordinated with multiple partners to address the source of runoff responsible for thermal shock in Beaver Creek, a high-value, cold water trout fishery. An easement was purchased to convert an upland property, previously planned for a truck stop, to a forest, facilitating water infiltration and enabling the transpiration of as much as 50 percent of soil water to the air. Forested buffers were installed along the creek, and cattle were fenced out of waterways to slow flow and reduce nutrients and sediment downstream. The local Soil Conservation District removed an in-line irrigation pond to minimize thermal impacts, further adding to the collective impact of multiple efforts designed to work together to maximize treatment of pollution at its source. The cooperative approach contributed to tripling the trout biomass in Beaver Creek, which is now a popular recreation area for fly fishers and supports a new fly-fishing store that recently opened.

The Beaver Creek model demonstrates that a whole watershed mindset to restoring water quality, as prioritized by the Maryland General Assembly when it adopted the Whole Watershed Act in 2024, can produce the outcomes that EPA's Chesapeake Bay Program intended when it approved stream restoration as a water quality improvement practice.<sup>7</sup>

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<sup>5</sup> Maryland State Highway Administration. National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit No. 11-DP-3313 MD0068276. Eighth Annual Report – Fiscal Year 2023. [https://roads.maryland.gov/OED/FY23\\_MS4\\_AnnualReport\\_20231101.pdf](https://roads.maryland.gov/OED/FY23_MS4_AnnualReport_20231101.pdf)

<sup>6</sup> [Chesapeake Bay Program Stream Restoration Credits: Moving Toward Functional Lift? - Center for Watershed Protection \(cwp.org\)](#)

<sup>7</sup> D Laws, Ch. 559.

MDE should update the draft permit to require upstream impervious surface treatment as an required part of any stream restoration project the permit allows, and it should set minimum requirements alongside an ambitious goal for the use of green infrastructure, specifying in the permit the number, type, and location of projects needed to deliver the restoration results the permitting system seeks to achieve. Moreover, the permit should include requirements to address impacts of stormwater and investments in green infrastructure in disadvantaged and overburdened communities as research suggests that these areas are disproportionately impacted by stormwater and flooding and receive less investment in green infrastructure than areas with higher incomes or majority white communities.<sup>8</sup>

### **III. THE DRAFT PERMIT MUST EXPAND MONITORING OF TEMPERATURE CHANGES, IMPACTS ON WILDLIFE HABITAT, AND LEGACY POLLUTANTS LIKE PCBs AND PFAS**

CBF again recognizes that the draft permit incorporates some requirements for SHA to monitor temperature and biological responses in a particular sample watershed (Little Catoctin Creek). Likewise, we recognize the draft permit requires SHA to develop tools for polychlorinated biphenyls (PCB) source tracking for certain watersheds where the applicable TMDL requires a reduction. While these are steps in the right direction, Maryland should hold itself (and others) accountable by thoroughly monitoring these factors and evaluating the effectiveness of stormwater interventions not just on a limited basis, but in all locations where the permit's jurisdiction applies.

MDE's recent draft 2024 Integrated Report of Surface Water Quality records 196 new Category 5 temperature impairments<sup>9</sup>. Zero percent of monitored streams in the state exhibit cooling over time. More streams like Beaver Creek are at risk and continuing to expand monitoring efforts through this permit will help the state address this troubling water quality trend.

Additionally, the permit does not direct any monitoring requirements for per- and polyfluoroalkyl substances (PFAS). These "forever chemicals" are a pollutant of growing concern to which the state is responding with increased monitoring and regulation. For example, MDE has currently imposed a moratorium on issuing new biosolid utilization permits in part due to concerns about PFAS impacts on water quality. Not including a requirement in the draft permit to monitor PFAS prevents the State from getting a better handle on the breadth and prevalence of PFAS pollution during the permit term.

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<sup>8</sup> Solins *et al* 2023. Regulatory requirements and voluntary interventions create contrasting distributions of green stormwater infrastructure in Baltimore, Maryland. *Landscape and Urban Planning*. <https://doi.org/10.1016/j.landurbplan.2022.104607>

<sup>9</sup> [Draft 2024 Integrated Report of Surface Water Quality](#)

The draft permit should explicitly include statewide monitoring requirements for temperature, biological response, and the presence of legacy chemicals including PCBs and PFAS.

#### **IV. THE DRAFT PERMIT MUST BE ADAPTIVE TO CHANGING POLLUTION REDUCTION TARGETS**

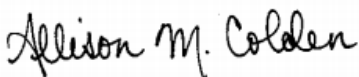
SHA's current permit was initially issued in 2015, modified in 2019, and has been administratively continued through the present day. The draft permit makes specific reference to restoration requirements and pollution reduction targets that align with Maryland's 2025 nutrient load reduction targets. As Maryland and other Chesapeake Bay watershed states work towards new goals and agreements that extend beyond 2025, the permit should be forward-looking and ensure SHA can be held accountable for its part in meeting those new goals, should they be adopted during the permit term.

#### **V. CONCLUSION**

CBF notes that while the draft permit includes a much-needed environmental justice lens and a nod to the alarming warming trend in the state's waterways, many of the same deficiencies that have plagued prior SHA and other MS4 permits are still present in this draft permit. To reverse increasing stormwater impacts in a growing state and changing climate while preparing Maryland with the tools it needs to achieve mandated water quality restoration targets, a substantial shift in approach is necessary for the permits to have the needed and legally required effect.

We appreciate your consideration of these comments and attention to the concerns raised here in the drafting of the final permit.

Sincerely,



Allison Colden  
Maryland Executive Director