



**Chesapeake Bay Program**  
**SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE**  
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March 9, 2018

RE: STAC Workshop Report: Assessing Impacts of Weather Patterns and Extreme Events on BMP Siting and Design

James Edward, Interim Chair, Chesapeake Bay Program Management Board  
U.S. Environmental Protection Agency  
410 Severn Avenue, Suite 109  
Annapolis, MD 21403

Cc: Management Board; Climate Resiliency Workgroup; Water Quality Goal Implementation Team

Dear Acting Director Edward,

Please see the attached STAC report entitled, “*Monitoring and Assessing Impacts of Changes in Weather Patterns and Extreme Events on BMP Siting and Design*”. This report contains specific recommendations identified by participants at STAC’s September 7-8, 2017 workshop with a summary of workshop proceedings.

Examining both impacts and solutions related to climate and extreme weather on BMP performance is a very timely issue for the Chesapeake Bay Program (CBP). The Partnership is currently in the midst of a multi-year effort to assess how to incorporate climate change considerations into the Chesapeake Bay jurisdictions’ Phase III Watershed Implementation Plans (WIPs). To inform this process, the CBP Climate Resiliency Workgroup (CRWG) was tasked with informing the climate change projections and scenarios for input into the watershed and estuarine modeling tools, exploring policy options for addressing climate in the Phase III WIPs, and developing policy implementation guidance. In order to support the Partnership’s evaluation of these proposed policy provisions, this workshop was convened with the goals of 1) assessing the state of the knowledge on the effect of anticipated changes in weather patterns and extreme events on best management practices (BMPs); 2) compiling siting and design guidelines, tools and resources to increase BMP resilience; and, 3) identifying gaps and priority needs to better inform and improve BMP development and implementation.

Workshop participants concluded that there is a limited understanding of the possible impacts of changes in precipitation, temperature, runoff, sea level rise (SLR), and other extreme weather events on BMP nutrient and sediment removal effectiveness, and that further work is needed to advance the state of knowledge in this area. Furthermore, due to uncertainty in future environmental conditions, the primary goal of siting and designing BMPs for the future is

resilience. In this report, workshop participants identified several key characteristics of resilient BMPs to consider.

Finally, participants also recommend that the CBP Partnership consider the following seven areas for future focus in order to successfully adapt programs, projects, and practices to achieve restoration goals in response to changing climatic trends:

1. Develop design guidance to increase BMP resilience;
2. Improve simulation modeling capabilities, with the goal of addressing a wide range of uncertainty related to climate, extreme weather patterns, or other future changes (e.g., population, land use);
3. Conduct targeted research to enable quantification of impacts on structural integrity as well as nutrient and sediment removal effectiveness;
4. Develop monitoring protocols and parameters to better assess the impact of extreme events on structural integrity and effectiveness of BMPs;
5. Advance programmatic practices, legal, and regulatory tools (i.e., a roadmap for moving from science to policy to regulation, especially looking beyond Phase III WIPs);
6. Improve communication and outreach to end-users; and
7. Identify, prioritize, and fill data, research, and information needs.

We trust that the Management Board, Goal Implementation Teams, and various workgroups will find these recommendations useful, and we look forward to your feedback. STAC respectfully requests a written response to the workshop findings and recommendations from the CBP Management Board Chair by June 9, 2018.

Please direct any questions you may have about this report and its recommendations to Rachel Dixon, Coordinator of the CBP's Scientific and Technical Advisory Committee.

On behalf of the entire STAC, thank you again for considering these recommended next steps, and we look forward to working with you closely on this in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Benham", with a long horizontal flourish extending to the right.

Brian Benham  
Chair, Chesapeake Bay Program's Scientific and Technical Advisory Committee