



Chesapeake Bay Program
SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE
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February 21, 2018

RE: STAC BMP Performance Uncertainty Workshop Report

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; Water Quality Goal Implementation Team

Dear Acting Director Edward,

Please see the attached STAC report entitled, “*Consideration of BMP Performance Uncertainty in Chesapeake Bay Program Implementation*”. This report contains specific recommendations identified by participants at STAC’s November 14-15, 2017 workshop with a summary of workshop proceedings.

The main goals of this workshop were to make recommendations for improving the Chesapeake Bay Program (CBP) Partnership’s documentation and characterization of uncertainties in best management practice (BMP) pollutant removal performance and to suggest how more detailed information on BMP uncertainty could be used to inform management decisions. The workshop also endeavored to create a shared understanding among workshop participants about the current CBP expert panel process for estimating the nitrogen, phosphorus, and sediment reduction performance of nonpoint source BMPs. Prior to the workshop, the steering committee prepared and presented a review of 22 expert panel reports produced between 2012 and 2016. This review indicated that the current expert panel process does not produce a consistent assessment of BMP performance uncertainty. Workshop participants identified four uses for more detailed information about BMP performance uncertainty:

1. More effective communication to policy makers and managers about the relative certainty in and confidence of BMP pollutant removal estimates;
2. Modeling the range of possible aggregate pollutant load and water quality outcomes considering BMP performance variability;
3. Enabling risk management approaches to BMP selection for Watershed Implementation Plans (WIPs); and
4. Targeted research to reduce performance uncertainty of key BMPs (adaptive management).

Through this report, the workshop participants recommend that the CBP Partnership pursue efforts to explicitly address uncertainty in modeling and management decisions. As a starting point, workshop participants suggest that BMP expert panels should be asked to provide additional information about BMP performance uncertainty and be given additional guidance on how to document, characterize, and report uncertainty. Workshop participants specifically recommend that the CBP Partnership take measures to:

1. Systematically document and represent uncertainties throughout the BMP treatment process;
2. Produce information about the distribution of removal effectiveness of each BMP;
3. Develop a method for simply and effectively communicating the degree and type of uncertainty across all approved BMPs; and
4. Provide additional guidance for how to most effectively solicit “best professional judgment” as part of the expert panel process, including best practices for structured literature syntheses, for identifying and avoiding potentially inappropriate heuristics (shortcuts) and biases when obtaining expert opinion, and for expert elicitation.

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 May 21, 2018.

Please direct any questions you may have about this report and its recommendations to Elaine Hinrichs, Staff of the CBP’s Scientific and Technical Advisory Committee, or Kurt Stephenson (Virginia Tech), workshop chair.

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 line extending to the right.

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