Chesapeake Bay Program
*Science. Restoration. Partnership.*

August 3, 2015

Dr. Kirk Havens, Chair
Scientific and Technical Advisory Committee
Chesapeake Bay Program
645 Contees Warf Road
P.O. Box 28
Edgewater, Maryland 21037

Dear Dr. Havens:

Thank you for the opportunity to respond to the Scientific and Technical Advisory Committee's (STAC) report entitled "Designing Sustainable Stream Restoration Projects within the Chesapeake Bay Watershed." Restoring health to local rivers and streams not only benefits the fish, wildlife and people using them, but also is a necessary step toward meeting water quality standards in the Chesapeake Bay. Many of the streams in the watershed are impaired, and sustainable actions are needed to improve the physical, chemical and biological functions of such streams while the health of intact streams is maintained. The stream health outcome (*"Continually improve stream health and function throughout the watershed. Improve health and function of ten percent of stream miles above the 2008 baseline for the watershed"*) was included in the 2014 Watershed Agreement. Effective and sustainable restoration projects will be important in achieving the outcome. We are addressing the specific recommendations as follows.

Participants stressed the need for stream restoration projects to be part of an overall watershed strategy for the Chesapeake Bay. Stream health is affected by numerous factors and is inherently connected to other management actions to address wetlands, forest buffers, brook trout, health watersheds, toxic contaminants and implementation of water quality best management practices. Healthy streams and sustainable restoration projects are vital to the overall goal to create a broad network of land and water habitats that support life and are resilient to the impacts of development and climate change.

The following three recommendations are very similar in that they all recommend the development of a unified, science and function-based stream restoration methodology process that guides the assessment, design, implementation, and monitoring of stream restoration projects.

- ***A group, such as the CBP"s Stream Health Workgroup, should adopt the proposed Function-based Stream Restoration Project Process outlined in this report as a starting point to develop a unified process and work with the Partnership to facilitate development of the proposed guidance.***

- ***Participants agreed that a science-based, methodological process is needed to clearly define project goals and objectives that lead to the identification of measurement parameters to evaluate the restoration of stream functions.***

- ***Participants identified areas for which monitoring efforts may enhance stream restoration science and implementation. For example, there is a need to develop a baseline list of critical stream functions and assessment parameters to monitor the effectiveness of stream restoration to support the programmatic goal of the Chesapeake Bay TMDL, which is the driver for many stream restoration projects in the watershed.***

The Chesapeake Bay Program agrees that a unified stream restoration process could enhance communication between stakeholders, increase benefits from stream restoration projects, and improve efficiencies in the permitting process. Currently, there is at least one ongoing effort that is developing a function-based stream restoration project process. This effort is a collaboration between the Maryland Department of the Environment (MDE) and U.S. Fish and Wildlife Service (USFWS). The effort will result in six products: (1) Analytical Design Review Checklist, (2) Natural Channel Design Review Checklist, (3) Valley Restoration Design Review Checklist, (4) Regenerative Storm Conveyance Design Review Checklist, (5) Function-based Rapid Stream Assessment Methodology, and (6) Function-based Stream Restoration Project Process Guidelines.

The first five of these products are complete and can be found at: http://www.fws.gov/chesapeakebay/stream/protocols.html. The final product is under development, and should be completed by late summer/early fall 2015. All of these documents are being released as ***Final Draft*** documents and will be revised in one year, if not sooner, based on relevant comments received from users. These documents can be a starting point for developing a unified stream restoration methodology for the Bay states. The Chesapeake Bay Program recommends that a group, potentially the Stream Health Work Group, review these documents and any comments provided to the USFWS over the course of one year and consider how they can be adapted or used to develop a unified stream restoration project process for the Bay states. The Chesapeake Bay Program recognizes that individual states will follow the procedures and guidelines as necessary to meet their unique requirements and uniformity may only be achieved at a basic level.

- ***Participants recommended developing a monitoring consortium or framework that would pool monitoring resources and address key research issues such as critical stream functions, intermediate functional standards, continuum of risk, and at-risk or non-functioning performance standards, among others.***

- ***Monitoring data generated from stream restoration projects should provide the potential to demonstrate restored steam functions. Participants agreed that the existing monitoring needs required by permits were not necessarily sufficiently robust to assess the full breadth of stream***

***functions. It was also acknowledged that permit monitoring requirements are prescribed based on the presence/absence of aquatic resource tradeoffs and may not require monitoring data beyond stream stability. Pooled monitoring to address specific research questions should be pursued.***

The Chesapeake Bay Program agrees that to address many of the questions that challenge both the restoration and regulatory communities, individual project by project monitoring is not powerful enough. It falls short for two main reasons: Stream restoration sites exhibit wide variability in their characteristics in both space and time, and sampling methodologies can vary. As a result, to truly address a significant question – to test a hypothesis -- and ensure a large enough sample size to capture the variability plus use adequate control site to capture temporal variability, we must move away from project by project monitoring and instead pool resources to allow the design methodology that examines a greater number of projects. The Chesapeake Bay Program is committed to this approach, and has in fact already invested resources this past year in the collaborative Restoration Research Program in Maryland with the Maryland Department of Natural Resources and the Chesapeake Bay Trust. We aim to continue to work with partners to identify how monitoring resources can best be deployed region-wide to maximize the power of the ability of the data to answer key questions. Monitoring can be very expensive, and our goals mirror yours: to make sure those data are as useful and hypothesis-driven as possible.

- ***It is recommended that the Urban Stormwater Workgroup and Stream Health Workgroup coordinate efforts to develop guidance (e.g., via an expert panel) to align how the restoration/enhancement of stream functions translates to nitrogen, phosphorus, and sediment 'credit'.***

The Stream Health Management Strategy has identified the following Strategy and action items which will be translated over the next several months into specific tasks in the biennial workplan:

"*Identify an appropriate suite of metrics to measure the multiple facets of stream health to complement the Baywide Chessie BIBI.*"

a. Develop a definition of stream health, measured as the length (miles) of streams improved that shows the linkage between upland drainages and local stream health, and between local stream health and the health of downstream receiving waters. This effort would work to associate metrics developed for the Chessie BIBI with individual State metrics used to track and report the Healthy Watersheds Outcome that states, "100 percent of state-identified currently healthy waters and watersheds remain healthy".
b. Develop metrics/composite indices from routinely collected, non-biological data to measure changes in stream function to assess regional improvement.
c. Include common indicators of stream functions to include for example, lateral stability, bedform diversity, habitat diversity, riparian corridor, nutrient and organic matter processing, as part of monitoring guidance for stream restoration projects to demonstrate functional lift.
d. Align metrics of functional lift with stream restoration protocols crediting projects for the Chesapeake Bay TMDL for nutrient and sediment reduction.
e. Collaborate with the Healthy Watersheds GIT to identify marginal streams where restoration activity in-stream or in the watershed may improve stream functions and health. Once identified, work with the Partnership and funders to develop incentives to build on existing efforts to target beneficial restoration activity along with guidance for permits to implement the proposed activity.

The biennial workplan will guide the work of the Stream Health Workgroup, which will work with the USFWS and all member partners to implement identified tasks in the 2015-2016 timeframe.

On behalf of the Management Board, I want to thank you for your timely recommendations. Please extend our gratitude to STAC and the workshop steering committee and participants for the time and effort involved in the production of this report. We greatly appreciate the ongoing role of STAC in serving as an independent review body working directly towards continually improving our overall management of the Chesapeake Bay and watershed restoration efforts.

Most sincerely,

Nicholas A. DiPasquale, Chair
Management Board