Chesapeake Bay Program
SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE
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May 25, 2017

Hon. Terry McAuliffe, Chair
Chesapeake Bay Program Executive Council
Commonwealth of Virginia
Office of the Governor
1111 East Broad Street
Richmond, VA 23219

Dear Governor McAuliffe and Distinguished Members of the Executive Council,

Your Scientific and Technical Advisory Committee (STAC) welcomes the opportunity to serve the Chesapeake Bay Program partnership, by advising on critical aspects of Bay conservation and restoration. STAC is a network of experts – volunteer scientists from academic institutions and public agencies, representing all major jurisdictions in the Chesapeake Bay watershed. By bridging political boundaries and engaging colleagues throughout the region, we help bring the best available science to the partnership.

STAC is a vital element of the partnership's commitment to evidence-based policy and effective management through state-of-the-art tools and understanding. Through the partnership, scientists have opportunities to develop relationships with policy makers that enable them to become problem-solvers. Further, the geographic reach of the partnership allows researchers to collaborate across state lines to innovatively address regional challenges. The advantages of this partnership have been nationally and internationally recognized, making this program a model for large aquatic ecosystem restoration and management around the globe.

In the past year, STAC has furthered its mission in numerous ways, including responding directly to legislators' need to understand emerging risks and conducting reviews and analyses to address questions from state and federal partners. You have a list of the past year's specific activities and products as an attachment to this letter. As it can take time for scientific findings to impact management change, I would like to turn to an earlier example to reveal how STAC's scientific activities support the partnership's search for cost-effective solutions.

In 2014, STAC scientists raised the issue that altered management of commonplace roadside ditches had the potential to be a cost-effective method of reducing water pollution. Roadside ditches are widespread in the watershed and can concentrate and transport excess nutrients, coliform bacteria, heavy metals, and other pollutants to streams and rivers. STAC convened a workshop that brought together scientists with managers and other stakeholders to identify effective management strategies for these ditches. Using the workshop outputs, the partnership

developed programs to support local governments in leveraging these existing water control structures to reduce pollution, in lieu of other more expensive approaches.

This roadside ditch effort is just one example of how scientific investments can save agencies money as they seek to protect human health and well-being throughout Bay restoration efforts. STAC also works with the partnership to turn monitoring data and model outputs into knowledge that can be applied to adapt management to maximize cost-effectiveness. Although we have a solid foundation of knowledge to guide Chesapeake Bay restoration, we continue to collect data and learn more about which practices are most effective for each situation, and which innovations can reduce costs. Importantly, STAC is an interdisciplinary body that embraces the integration of social and natural sciences to find management solutions that are not only environmentally effective, but also sustain businesses, institutions, and individuals.

The expert support provided by STAC is a good value for the partnership. Although STAC requires resources to conduct its investigations, it provides about 4000 hours a year in volunteer labor (valued at roughly $300,000) and engages other scientists who volunteer countless additional hours. Without the formal structure of STAC to engage scientists and offer recognition for their contributions, they would be less available to address the partnership's needs.

The Chesapeake Bay restoration is bearing fruit in terms of improved aquatic habitat and water clarity throughout the watershed (including lakes, streams and estuaries), increased fish and crab abundance, and increased prevalence of seagrasses. All of these gains not only have immediate benefits but also increase resilience toward withstanding future stress. STAC will only be able to continue its role in promoting successful and efficient restoration if governments continue to support the monitoring and other "intelligence gathering" needed for a cost effective restoration. Moreover, because no single entity can effectively synthesize the data or address all of the remaining questions, the current federal leadership in the partnership is essential to success. In short, this partnership has a proven ability to provide the cross-jurisdictional coordination and resources needed to develop good scientific understanding and act cooperatively to achieve goals.

We thank the partners for their ongoing commitment to using scientific evidence to design and implement effective management of this valuable ecosystem and its watershed. We look forward to meeting with each of you in the near future to discuss how STAC can assist in any specific issues you may have and will follow up with your staff to arrange a convenient time.

Sincerely yours,

Lisa Wainger
Chair, Chesapeake Bay Program's Scientific and Technical Advisory Committee

Summary of this year's STAC activities and anticipated next year efforts

Reviews (5)

- Chesapeake Bay Scenario Builder/Nutrient Input Approach
- Proposed revised James River Chlorophyll *a* Water Quality Criteria
- General Additive Models (GAMs) to estuarine WQ trend analysis and explanations
- Evaluating Boat Wake Wave Impacts on Shoreline Erosion and Potential Policy Solutions for the Chesapeake Bay
- 2015 Chesapeake Bay Criteria Addendum

Workshops (4)

- An Analytical Framework for Aligning Chesapeake Bay Program Monitoring Efforts to Support Climate Change
- Legacy Sediment, Riparian Corridors, and Total Maximum Daily Loads
- Quantifying Ecosystem Services and Co-Benefits of Nutrient and Sediment Reducing Best Management Practices (BMPs)
- Understanding and Explaining 30+ Years of Water Clarity Trends in the Bay's Tidal Waters

Ongoing and Future Activities

Reviews (3)

- Phase 6 Chesapeake Bay Watershed Model
- Chesapeake Bay Water Quality/Sediment Transport Model (WQSTM)
- Approach being taken to factor climate change considerations into the 2017 Chesapeake Bay TMDL Midpoint Assessment

Workshops (6)

- Chesapeake Bay Program Modeling Beyond 2018: A Proactive Visioning Workshop
- Consideration of BMP Performance Uncertainty in Chesapeake Bay Program Implementation
- Integrating Recent Findings to Explain Water Quality Change: Support for the Mid-Point Assessment and Beyond
- Reassessing Habitat Conditions in Sub-estuaries of the Chesapeake Bay and Responses to Resource Management
- Monitoring and Assessing Impacts of Changes in Weather Patterns and Extreme Events on BMP Siting and Design
- Factors Influencing the Mainstem, Tidal, and Non-Tidal Fish Habitat Function in the Chesapeake Bay Watershed: Application to Restoration and Management Decisions

STAC Reports Published in FY 2016 (7)

- Evaluating Proprietary BMPs: Is it Time for a State, Regional, or National Program?
- Conowingo Reservoir Infill and Its Influence on Chesapeake Bay Water Quality
- Scientific and Technical Advisory Committee Review of Nutrient Input Estimation for the Chesapeake Bay Watershed Model
- The Development of Climate Projections for Use in Chesapeake Bay Program Assessments
- Scientific and Technical Advisory Committee Peer Review for the James River Chlorophyll-a Criteria Re-evaluation
- Scientific and Technical Advisory Committee Review of the Generalized Additive Model (GAM) Approach for Water Quality Trends in Tidal Waters
- Review of boat wake wave impacts on shoreline erosion and potential solutions for the Chesapeake Bay