Scientific and Technical Advisory Committee (STAC)
March 14, 2017 Quarterly Meeting Minutes
(Held via webinar/teleconference due to winter storm)

Tuesday, March 14 Minutes

All Attendance via Webinar

Members: Joshua Behr, Brian Benham, Craig Beyrouty, Donna Bilkovic, John Karl (JK) Bohlke, Kathleen Boomer, Christopher Brosch, Amy Collick, Bill Dennison, Alix Dowling Fink, Lara Fowler, Carl Friedrichs, Marjy Friedrichs, Kirk Havens, Maria Herrmann, Carl Hershner, Thomas Ihde, Susan Julius, Hamid Karimi, Peter Kleinman, Martin Lowenfish, Mark Luckenbach, Chanceé Lundy, Andrew Miller, Mark Monaco, Steve Newbold, David Newburn, Marc Ribaudo, David Sample, Kurt Stephenson, Lisa Wainger, Denice Wardrop, Gene Yagow, Weixing Zhu

Guests: Marcus Aguilar, Greg Barranco, Rich Batiuk, Jessica Blackburn, Karl Blankenship, Lee Currey, Dinorah Dalmasy, John Davy, Nicholas DiPasquale, Randy Dymond, Ginger Ellis, Jeff Halka, Kyle Hinson, Ruth Izraeli, Zoe Johnson, Veronica Kasi, Lew Linker, Tom Richard, Gary Shenk, Stephanie Smith, Ken Staver, Bruce Vogt, Ping Wang, Howard Weinberg, Jeff White, Qian Zhang

Administration: Rachel Dixon, Elaine Hinrichs, Renée Kelly

Call to Order – *Lisa Wainger (STAC Chair – UMCES)*

Wainger called the meeting to order shortly after 10:20 am. STAC Staff, Elaine Hinrichs (CRC) took attendance, and the new Maryland Gubernatorial Appointee, Craig Beyrouty (UMD) introduced himself. Wainger requested a motion to approve the December 2016 quarterly meeting minutes and January 2017 Executive Board (EB) meeting minutes. STAC members approved both documents. STAC Vice-Chair, Brian Benham (VT) deferred on an update from the December 2016 quarterly meeting due to time constraints and technical difficulties. Wainger provided an overview of the theme for the March meeting (uncertainty and adaptive management) and the revised webinar agenda.

DECISION: **Wainger** requested a motion to approve the December 2016 quarterly meeting minutes and January 2017 EB meeting minutes. Result: Motion carried.

Briefing on the Chesapeake Bay Program's (CBP) Approach to the Conowingo Infill Issue – *Lee Currey (MDE)*

Currey updated STAC on the status of the Conowingo Reservoir infill and the CBP decision-making approach for addressing the necessary additional nutrient and sediment load reductions. The Conowingo Reservoir is the last of three reservoirs along the lower Susquehanna River, which contributes almost half of the nitrogen (N), a quarter of the

phosphorus (P), and a quarter of the sediment loads to the Bay. Currey explained that the 2010 Chesapeake Bay Total Maximum Daily Load (TMDL) assumed that the Conowingo Reservoir's 2010 trapping capacity would continue through 2025, and that the reservoir would reach steady state in 15-30 years. However, significant monitoring and research since 2011 indicate that Conowingo Reservoir has filled to steady state. Over the long term, the input of material to the reservoir will now be equal to the output, but flow events will scour more material from the reservoir out into the Bay. Currey detailed how monitoring trends from the 1990s to the 2010s for sediment, P, and N loads into, trapped within, and exiting the Conowingo Reservoir reveal the switch from trapping to no net trapping. Since the Conowingo Reservoir is trapping less and releasing more particulate nutrient and sediments loads, loads from the Susquehanna River watershed are expected to have a higher relative influence on Chesapeake Bay water quality. Studies indicate that additional reductions in nutrients and sediments are needed to meet Bay water quality goals. The CBP Modeling Workgroup is working to characterize the current state of Conowingo Reservoir, determine the change in scour and deposition over time, estimate the reservoir response to nutrient reductions, and include the bioavailability of scoured organic material in CBP modeling tools. Currey concluded by detailing the progress and 2017 Midpoint Assessment (MPA) timeline by which the CBP Principal's Staff Committee (PSC) will decide who is responsible for additional load reductions, how the responsibility will be assigned, and when the additional reductions will be required to be met. Following the presentation, STAC members participated in a brief question and answer (Q&A) session with Currey.

ACTION: Bill Dennison (UMCES) and Currey will follow up to compare Conowingo modeling results to integrated indices of Chesapeake Bay health, perhaps at a future CBP Scientific, Technical Assessment and Reporting Team (STAR) meeting, in order to quantify impacts of the Conowingo reservoir reaching dynamic equilibrium.

ACTION: STAC members should email any remaining questions regarding Currey's presentation on the CBP's approach to the Conowingo infill issue to lee.currey@maryland.gov.

CBP Update and 2017 Midpoint Assessment – *Nicholas DiPasquale (Director of the CBPO – EPA)*

DiPasquale shared updates on the 2017 MPA, the Strategy Review System (SRS), and the current outlook for the federal budget situation. DiPasquale began by explaining where the MPA fits into the Chesapeake Bay TMDL, and how STAC's independent scientific peer reviews, workshops, and volunteer hours have contributed to the MPA and progress made thus far on the TMDL. Indicators for water quality, blue crabs, and submerged aquatic vegetation (SAV) in the Chesapeake Bay are improving. The CBP is in the final stretch of the MPA and the PSC will be making policy decisions to account for growth and address climate change and the Conowingo infill issue in order to reach the TMDL's 2025 goals. Pending final CBP approval of the models, the CBP Watershed Technical Workgroup will run model scenarios this summer. Teams of United States Geological Survey (USGS) and academic scientists will be working with

the jurisdictions for the Phase III Watershed Implementation Plans (WIPs). The CBP plans to have information available to support decisions on the Phase III WIP planning targets by fall of 2017. DiPasquale also discussed the newly implemented Biennial SRS. STAC members have been advising this adaptive management framework. Through the SRS, the CBP Management Board (MB) will re-evaluate and update management strategies by identifying management approaches and actions that are or are not working and considering changes in science, finances, and policy. A kickoff meeting for the CBP SRS was held February 8-9, 2017, and future MB SRS meetings will be held in themed cohorts on a quarterly schedule for a two-year cycle. DiPaquale explained that the SRS is the final step outlined in the 2014 Chesapeake Bay Watershed Agreement, following the development of the management strategies and biennial workplans. A template has been created to guide the CBP Goal Implementation Teams (GITs) through their SRS meetings, and the details of the SRS process will continue to be refined. DiPasquale requested that the next STAC quarterly meeting have time for a more full presentation on the SRS, perhaps by Dave Goshorn (MD DNR), if the schedule allows. DiPasquale concluded by updating STAC on the current CBP budget situation and timeline. DiPasquale shared numbers on the breakdown of CBP funds to jurisdictions in the form of grants, outside contractors, GIT funding, and core EPA operations, and reminded STAC of the many steps in the federal budget process. DiPasquale requested that STAC members make note of the CBP Executive Council (EC) meeting scheduled for June 8, 2017, and encouraged STAC members to continue to be part of an active dialogue with the CBP. STAC members were provided time for Q&A with DiPasquale.

ACTION: **STAC Staff and Wainger** will schedule time on the June STAC quarterly meeting agenda for a fuller presentation on the CBP's biennial SRS, as requested by DiPasquale.

Evaluation of Stormwater Control Measure Performance Uncertainty – *Marcus Aguilar (VT) and Randy Dymond (VT)*

Aguilar and Dymond discussed their research on the performance uncertainty of stormwater control measures (SCMs), also known as stormwater best management practices (BMPs). Their research was motivated by the high number and cost of urban SCMs, and the lack of knowledge about the cost-effectiveness of SCMs regarding the removal of pollutants. Aguilar and Dymond conducted a literature meta-analysis to evaluate percent pollutant removal uncertainty. This uncertainty comes from two sources: 1) environmental uncertainty (from environmental variability) and 2) observation uncertainty (from measurement error). Unexpectedly, Aguilar and Dymond found that more studies did not lead to less performance uncertainty. The top three SCM performers (infiltration, dry swale, and rainwater harvesting) had insufficient data, but permeable pavement and bioretention had positive removal of total P, total N, and total suspended solids (TSS), while filtering practices, vegetated filter strips, and constructed wetlands had positive removal of TSS. The primary outcomes of Aguilar and Dymond's study were: 1) evaluating SCM performance uncertainty using percent removal confounds effective management decisions; 2) the metric is insufficient; and 3) the SCM category paradigm is insufficient. Aguilar and Dymond concluded with an overview of their next steps. They plan to build a framework for environmental uncertainty and observation uncertainty separately in a

two-part paper, and combine these two components into a third paper that evaluates the effects of uncertainty on TMDL progress, and SCM selection, cost, and cost-effectiveness. Following the presentation, STAC members participated in a Q&A session with Aguilar and Dymond.

Fiscal Year 2017 (FY17) Request for Workshop Proposals (RFP) Results and Discussion

STAC Staff, Renee Kelly (CRC) presented results of the initial RFP scoring to STAC. Kelly provided an overview of the topic, proposed timeframe, and requested funds for each of the five new workshop proposals received during this RFP cycle. The requested funds for the five FY17 proposals totals $1,500 over STAC's workshop budget for this year. However, one proposal entitled "Integrating Recent Findings to Explain Water Quality Change: Support for the Mid-Point Assessment and Beyond" was submitted in place of a previously scheduled peer review for the MPA, and Kelly explained that STAC Staff was pursuing the option of transferring the funds allocated for this review to the workshop. If the funds can be transferred, all five FY17 proposals could be supported at the total amount requested. A closer examination of the scoring results of the five proposals indicated that STAC found all of the proposals to meet the designated criteria, and several positive comments were received for each workshop. Kelly reviewed how STAC member's scores were analyzed for each workshop proposal. Wainger noted that the scoring criteria are relatively new, and requested that STAC members consider whether they are capturing the important information to use in reviewing workshop proposals. STAC Staff reviewed the comments on each proposal, and STAC members identified in the proposal were called upon for clarification and/or explanation.

Benham explained the distinction between two proposals with similar focus areas – one on BMP uncertainty and another on BMP siting and design – and why the topics could not be combined or linked into a single two-day workshop. Kurt Stephenson (VT) added that the former addresses uncertainty in the performance of the practice itself, and the latter would deal with uncertainty in regard to climate. STAC members on each steering committee committed to working in coordination to address any overlaps in topic.

STAC members discussed the implications behind the scoring criteria of "Effectiveness as a Workshop" for proposals, and offered that there should be an option to suggest an alternative format (e.g., literature synthesis, review panel, white paper) during evaluation. Furthermore, an alternative format may also be more cost-effective. Several STAC members commented that the best format depends on the scope of the topic, the objectives, and the desired outcomes: a workshop is seen by some as an opportunity to identify future products or efforts. In regard to one proposal ("Integrating Recent Findings to Explain Water Quality Change"), Rich Batiuk (EPA) added that a workshop would be a venue to tie ongoing efforts together, and having STAC sponsorship of the effort is key for coordination and creating expectations of being responsive back to the MB and STAC. Additionally, Wainger emphasized that it's important for workshops to create the products that are going to be the most effective for the requesting group, and that format should consider the audience receiving the information. Batiuk committed to expanding the scope of this workshop proposal to incorporate consideration of and appropriate

expertise on higher trophic level and economic effects into the workshop. For all FY17 proposals, STAC members concluded that steering committees should strongly consider pre-workshop preparations within the scope of their planning to make the activity as effective as possible, and that the next RFP should capture the possibility of alternative forms of meetings to create the best products.

STAC member representatives provided clarification and an overview for the two remaining proposals for consideration, and justified why the workshop format was essential for the given topic. Members commented that several workshops in the FY17 RFP are complementary in scope, and it will be a novel challenge to encourage workshops to be independent but mutually supportive, regardless of timing. In summary, STAC members decided to move forward with approving funding for all 5 proposals (6 workshops will be held in FY17), pending review funds could be used for the review-replacement workshop. If not, a slight reduction (~3%) in funding could be applied to all proposals, given the proposal is still able to complete their objectives. STAC member Tom Ihde (Morgan State) requested that the summary of scores be provided further in advance of the March quarterly meeting, and that a further discussion is need on the phrasing of scoring criteria.

DECISION/ACTION: **STAC** decided to support all 5 workshop proposals in fiscal year 2017, pending a final funding decision. STAC Staff will confirm if review funds can be used to support the review-replacement workshop "Integrating Recent Findings to Explain Water Quality Change: Support for the Mid-Point Assessment and Beyond", so that STAC can proceed to fund all five proposals at the full amount requested. If not, the STAC EB will discuss adjusting the five approved proposal budgets so that all of the workshops can still be supported.

ACTION: **STAC Staff** will ensure the agenda for an upcoming EB call includes a discussion on suggestions for the workshop RFP process (specifically rephrasing of evaluation criterion #1, and provision of a summary of workshop proposal scores before each March quarterly meeting).

Chesapeake Biomass: Market-based Strategies for Water Quality – *Tom Richard (PSU)*

Richard presented on market-based strategies for achieving water quality goals in the Chesapeake Bay and its watershed through biomass crops. Perennials and cover crops, both of which can be biomass feedstocks, are recognized as least-cost strategies for reducing nutrient loads and improving water quality. Richard discussed several current challenges for conservation plantings: 1) farmers do not want to give up cropland; 2) planting perennials is expensive; 3) incentives and insurance are lacking for perennial crops; 4) cover crops release nitrate in the spring; and 5) P becomes more bioavailable in buffers over time. Richard then explained key questions regarding biomass production, profits, markets, and water-quality benefits that must be answered for a Chesapeake biomass initiative to succeed. Richard detailed existing markets in the Chesapeake region for biomass fiber and energy, as well as future regional market opportunities, which include aviation and military biofuels, pulp mills,

and biolubes. On the production side, conservation feedstock such as shrub willow, perennial grasses, winter rye, and biomass sorghum, can be integrated with forest buffers or with annual crops. Richard showed how increasing flood risk vulnerability affects sub-field profitability. Sub-field economic analyses suggest strategic planting of perennials in economically marginal regions of fields using precision agriculture can increase farmers' profits. Richard detailed the steps by which he and colleagues plan to scale up from current United State Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) pilots in Pennsylvania to 20,000 farmers in the Chesapeake Bay watershed. Richard concluded by explaining how managing the plantings of hundreds of thousands of acres of cover crops and perennial riparian buffers planned in the states' WIPs represents an opportunity for not just improving water quality, but also improving farm profitability, rural economic activity, and sustainable energy for the Chesapeake region. STAC members were provided time for Q&A with Richard.

Joint Advisory Committee Letter and Next Steps

The meeting concluded with a discussion of a potential joint letter with the Local Government Advisory Committee (LGAC) and the Citizens Advisory Committee (CAC) to the CBP EC. LGAC and CAC had drafted a letter requesting EC support for full funding of the EPA's CBP, and asked STAC to sign on as well. STAC members discussed how federal employees could abstain from letters regarding federal funding, and made suggestions for improving the joint letter. STAC Coordinator, Rachel Dixon (CRC) will reach out to a volunteer subcommittee composed of Dennison, Kathy Boomer (TNC), Denice Wardrop (PSU), Lara Fowler (PSU), and Wainger regarding next steps for the proposed joint advisory committee letter. Dixon will also contact STAC members with information about how to formally recuse themselves from any potential letter signed by STAC about funding.

ACTION: Dixon will reach out to a volunteer subcommittee composed of Dennison, Boomer, Wardrop, Fowler, and Wainger regarding next steps for the proposed joint advisory committee letter to the EC regarding CBP funding. **Dixon** will also contact STAC members with information about how to formally recuse themselves from any potential letter signed by STAC about funding.
Update: See Dixon's email to STAC members on 3/21/2017.