



**Chesapeake Bay Program's (CBP)
Scientific and Technical Advisory Committee (STAC)
September 11-12, 2018 Quarterly Meeting Minutes
DoubleTree by Hilton Hotel – Annapolis, MD**

Tuesday, September 11 Minutes

Attendance (W: Webinar)

Members: Brian Benham, Donna Bilkovic (W), John Karl (JK) Bohlke, Kathy Boomer, Chris Brosch, Amy Collick, Alix Dowling Fink, Alix Dowling Fink, Zachary Easton, Lara Fowler (W), Kirk Havens (W), Carl Hershner (W), Thomas Ihde, Thomas Johnson, Hamid Karimi, Peter Kleinman (W), Martin Lowenfish, Mark Monaco, Marc Ribaud, Adel Shirmohammadi, Kurt Stephenson, Tess Thompson (W), Denice Wardrop, Gene Yagow, Weixing Zhu

Guests: Laurel Abowd, Doug Austin (W), Greg Barranco, Dinorah Dalmasy, Suzanne Dorsey, Mary Gattis (W), Jennifer Greiner, Jeremy Hanson, Rachel Felver, Carl Friedrichs (W), Lucinda Power (W), Kristin Saunders, Gary Shenk, Joan Smedinghoff, Peter Tango, Emily Trentacoste (W), Michelle Williams

Administration: Bill Ball, Rachel Dixon, Melissa Fagan, Annabelle Harvey

Call to Order – *Brian Benham (STAC Chair – VT)*

Benham called the meeting to order at 10:00 am. With Peter Kleinman's departure from STAC, Benham announced that STAC's Executive Board (EB) nominated Kurt Stephenson (VT) to serve on the board. Stephenson's appointment was approved. Benham requested a motion to approve the August 2018 EB meeting minutes and the June 2018 Quarterly Meeting Minutes; both were approved, contingent upon the inclusion of Tom Ihde's (MSU) suggested edits.

DECISION: Benham requested a motion to approve the August 2018 EB meeting minutes and the June 2018 Quarterly Meeting Minutes. Result: Motion carried.

DECISION: Kurt Stephenson (VT) was appointed to the STAC Executive Board.

STAC Staff Annabelle Harvey informed the membership of the proposed 2019 quarterly meeting dates; March 26-27, June 11-12, September 10-11 and December 10-11. STAC Coordinator Rachel Dixon gave an update on workshop planning and progress, and next anticipated report release. The 'Climate Change Modeling 2.0' workshop will convene at the end of September. Adel Shirmohammadi (UMD) suggested incorporating groups who have already been working on climate efforts, such as the Maryland Climate Commission. Gary Shenk (USGS) noted that the workshop is working to get answers to the Principal's Staff Committee (PSC) on model accuracy and updating these models. Bill Ball (CRC) reminded the membership that the next synthesis project is focused on climate change and that these broader discussions and the inclusion of outside groups would be useful there. Denice Wardrop (PSU) suggested a concept map of climate change in the Bay to better identify the gaps that should be addressed through synthesis.

Dixon also informed STAC that now that Midpoint Assessment is over, work on the STAC Recommendation Database with resume. STAC staff and Shenk are meeting to discuss intended uses, audience, and formats.

Recap of STAC June Quarterly Meeting – Brian Benham

Benham recapped the presentations from the June meeting webinar, including the presentation on the challenges and success of various synthesis efforts given by Jeni Keisman (USGS). Additionally, at that meeting, it was decided that three vacant at-large positions would be filled from results of a survey of nominees with needed expertise. The Executive Board voted to approve the three nominees and Benham has made initial contact and will move forward in bringing them onto STAC.

Updates from the CBP Executive Council (EC) – Brian Benham

Benham highlighted the purpose of the letter sent annually to the EC on behalf of STAC; this year's letter addressed the importance of partnership, synthesis efforts and the monetary value of member participation. It also emphasized the importance of climate change as a pressing issue for the partnership to continue to address. Rich Batiuk's (EPA-CBP, retired) contribution to the partnership and to STAC in particular were highlighted, along with the high value STAC places on Batiuk's former position as Associate Director for Science, Analysis and Implementation at the Program. In regard to the EC meeting on August 7, Lee Currey (MDE) noted that the members of EC were cordial and showed their commitment to the partnership. An Agricultural Directive was signed by all EC Members, which highlighted riparian buffers. A Stormwater Directive was discussed but, it was not signed at this time. Several speakers highlighted the importance of environmental education and different perspectives on environmental initiatives through the Bay partnership.

Updates from the Principal's Staff Committee (PSC) – Lee Currey (MDE)

Currey updated the membership of the actions of the PSC in the past months. In July, the Phase 6 suite of models were approved. As a part of the EPA Expectations Document and Bay Agreement goal, the Partnership reaffirmed having practices and controls on the ground by 2025. Due to changing conditions as a result of climate change, the EPA expectations include identifying gaps in climate change science and ensuring resiliency of best management practices (BMPs) to changing climate conditions. Jurisdictions are also expected to account for new growth and consider co-benefits.

Load allocations resulting from Conowingo Dam will be addressed with a separate watershed implementation plan (WIP) from those of the jurisdictions that will be managed by a third party contractor using pooled resources. The details of these pooled resources have not yet been decided on. A "Stopping Rule" was set for the model to maintain targets until 2025 to keep a level of certainty for the Phase 6 Model. The PSC holds the right to make changes if necessary, but no changes will be made until 2019. Hamid Karimi (DC) noted that DC will meet requirements for additional loads due to climate in the Phase III WIPs, emphasizing the importance that there is an understanding of BMP functionality in climate change conditions. This is on STAC's radar, but waiting for science to catch up.

Chesapeake Monitoring Cooperative MOU – Peter Tango (USGS)

Tango gave an update on the development of the Citizen Science and Nontraditional Partner Monitoring Memorandum of Understanding (MOU). The Chesapeake Monitoring Cooperative (CMC) is a partnership that aims to provide technical, logistical, and outreach support for the integration of volunteer-based and nontraditional water quality and benthic macroinvertebrate monitoring data into the Chesapeake Bay Program partnership. This proposed MOU for the partnership would aim to fill gaps in monitoring capacity through the use of citizen-based and nontraditional partner data, updated assessment

protocols and promote adapting existing monitoring resources. The CMC have requested a letter of support from each of the advisory committees for the MOU, which has already been approved by the Management Board.

Tango presented the list of efforts for which they are seeking support from the Management Board and highlighted that STAC could potentially play a role in developing a prioritized list of specific data needs for use by citizen science programs. The MOU plans to put data of known quality to use with the development of the Chesapeake Data Explorer. This is an opportunity to fill in gaps in space and time of monitoring data using nontraditional partners and monitoring. The data operates on a tiered framework, with 3 tiers of data quality and resolution. Tango illustrated the breadth of the monitoring cooperative by giving examples of organizations using nontraditional monitoring to increase the resolution of their data collection, including the South River Federation and Nanticoke Creekwatchers Program. Dixon will distribute a link to the Chesapeake Data Explorer, in its current form in testing. The MOU commits to create a cooperative partnership between the CMC and Chesapeake Bay Program to sustain a network of citizen science partners and support the quality-data collected.

Tango is looking for letters of support to include at the presentation of the MOU at the October 18, 2018 PSC meeting for approval. Comments on the MOU previously provided by STAC members were included and STAC agreed to provide a letter of support for the PSC meeting.

ACTION: STAC Executive Board will draft a letter of support on behalf of STAC for the Chesapeake Monitoring Cooperative Memorandum of Understanding (MOU) in advance of the Principal's Staff Committee meeting scheduled for October 2018.

Chesapeake Research Consortium (CRC) Staffer Presentations

– Michelle Williams (CRC) – Water Quality Goal Implementation Team Staffer (WQGIT)

– Laurel Abowd (CRC) – Management Board, Principal's Staff Committee & Executive Council Staffer

The CRC's Environmental Management Career Development Program provides early career professionals with a stepping stone to a future career in the fields of environmental science, policy and management, outreach, and education. Staffers provide technical and administrative support to the various CBP partnership committees, Goal Implementation Teams (GITs) and workgroups and not only gain a professional foundation for their careers, but individualized career development opportunities. Williams and Abowd provided updates and progress of the WQGIT and Management Board, PSC and EC as well as their own professional development and future plans.

Engaging Local Stakeholders in TDML and BMP Implementation – Suzanne Dorsey (UMD)

Dorsey is currently working at the Hughes Center at the University of Maryland in an effort to engage farmers and foresters in decision making. Dorsey emphasized the important perspective these local stakeholders bring and that in order to have a large impact on the environment, managers and policy makers must address agriculture and connect with communities. She highlights the often incorrect assumptions surrounding the agricultural community. They can be smart, highly-successful and have an in-depth understanding of their land. Farmers can understand the data that dictates best farming practices, but often don't have access to this data. Farmers have a detailed knowledge of their lands' drainage, specific needs and challenges, so the broadness of current BMP requirements are not always an attractive option. Dorsey explains some of the challenges farmers are facing with implementing BMPs, including the difficult reporting process and frequent changes in the system, on top of the challenges of the farming business, such as limited staff, resources and consistency. They are looking for a more efficient and simple system that would allow them to contribute to the solution. Farmers are often made out to be the problem in

environmental management, but Dorsey emphasized that the challenges they face prevent them from breaking that assumption, which creates a lack of motivation to implement BMPs. Farmers use different sources of information based on who they trust, whether the Farm Bureau or Soil Conservation District. With a variety of sources, farmers are receiving a variety of information. There is a need for education and accessibility of data that would encourage good farming practices. Dorsey opened a conversation to discuss how we can create a better relationship with the agricultural community that would be mutually beneficial.

Weixing Zhu (Binghamton) noted that Dorsey had mentioned that most the farmers she works with are those who are performing well and he questioned how this related back to the actual level of local engagement. Dorsey agreed that farmers who are making money are incentivized to do more and be involved, while those not performing as well fear reporting their numbers may lead to further costly regulations. STAC members discussed how to meet farmers in the middle to reach BMP goals while addressing farmer concerns. Kathy Boomer (The Nature Conservancy) agreed that farmers are very smart and that a two-way dialogue would be a first step in finding agricultural practices that meet water quality goals.

Update on Phase III WIP Planning—Dinorah Dalmasy (MDE)

Dalmasy, co-chair of the Water Quality GIT (WQGIT), interviewed GIT representatives from each jurisdiction to determine progress in Phase III WIP Planning. Dalmasy noted the need for more work in the agriculture and urban sectors, across all jurisdictions. DC and West Virginia have met their 2025 goals, while the rest of the jurisdictions have yet to meet their Phase III WIP planning targets. The EPA Expectations Document has been released for all jurisdictions and both builds upon the existing WIP strategies and provides new ones. . Jurisdictions will not be held responsible if federal agencies within their jurisdiction do not meet their reductions. Dalmasy then reviewed the progress of each jurisdiction, providing detailed updates state-by-state. Overall, all jurisdictions are concerned with climate change, flooding and achieving other Partnership goals, emphasizing co-benefits. They face challenges in the gap in climate science and BMP modifications for climate change.

- West Virginia’s Phase III WIPs are projected to achieve reductions beyond the 2025 target.
- Pennsylvania has split their counties into 4 tiers, based on load and percent reduction required to meet state targets. For their WIP due in August of 2019, Pennsylvania will include 4 action plans for the top 4 load-contributing counties and a timeline for the other counties’ plans.
- New York has split counties based on waste water and nonpoint sources. They emphasize climate change and flooding as a major issue for the state.
- Maryland faces a challenge as the Phase III WIP target will be more difficult to achieve compared to the Phase II. They are focusing on waste water infrastructure in their plan.
- Virginia is focusing on the Local Area Planning Goals (LAPGs) using contracts with local planning districts for local engagement.
- DC is meeting targets in their 2017 progress but face a challenge with growing population and development and 30% of DC area being federal. While jurisdictions are not responsible for federal targets, it creates an implementation challenge in DC. DC plans to address climate change by 2025, leveraging efforts such as “Climate Ready DC”.
- Delaware, similarly to Maryland, will face more work in Phase III than they did in Phase II.

Dalmasy asked STAC to synthesize previous workshop information and recommendations to help fill science gaps. Shenk emphasized that STAC is working to build off the existing modeling structure to address co-benefits and climate change. Bill Ball (CRC) added that STAC staff, with help from CRC and

CBP, are working to build a STAC Recommendations Database that would make STAC recommendations and reports easier to access and search. To address additional requests from the WQGIT, it was decided that a follow-up conversation is necessary between the WQGIT and STAC.

ACTION: STAC Staff and Executive Board will follow-up with co-chairs Dinorah Dalmasy (MDE) and James Davis-Martin (VADEQ) to collect requests from the Water Quality Goal Implementation Team.

Discuss Upcoming Membership Vacancies—Full Membership

At the end of June, STAC decided on three expertise categories to fill three vacancies. The EB then prioritized nominees that were suggested via an email survey for these spots and Benham has made initial contacts to begin to secure those nominees. Kenny Rose (UMCES) was asked to fill under Living Resources, Larry Sanford (UMCES) for Physical/Biogeochemical and Lee Blaney (UMBC) for Toxics. Assuming these nominees fill those vacancies, there are still three federal and two at-large vacancies remaining.

The results of the survey sent to STAC members in July were displayed and the highest expertise categories, along with nominees for those categories, were presented to STAC. Priority areas include Environmental Data analytics/statistics, Decision Science, Social/Behavioral, Estuarine Living Resources and Estuarine Physical/Biogeochemical. Benham provided definitions to help clarify the expertise categories and a list of nominees with a quick summary of their research interests and expertise. Members expressed support for multiple nominees and those nominees were bolded to be prioritized and voted on by the Executive Board, as stated in the Bylaws. Benham was asked to add descriptions for individual nominees, as not all had a summary with their name, and the vacancy discussion would be continued on the next day.

Wednesday, September 12 Minutes

Attendance: (W: Webinar)

Members: Brian Benham, Donna Bilkovic (W), John Karl (JK) Bohlke, Kathy Boomer, Chris Brosch (W), Amy Collick, Alix Dowling Fink, Zachary Easton, Lara Fowler (W), Kirk Havens (W), Carl Hershner (W), Thomas Ihde, Thomas Johnson (W), Hamid Karimi, Peter Kleinman (W), Martin Lowenfish, Andy Miller, Mark Monaco, Marc Ribaud, Adel Shirmohammadi, Kurt Stephenson, Tess Thompson (W), Denice Wardrop, Gene Yagow, Weixing Zhu

Guests: Mark Bennett, Daniel Kaufman, Kristin Saunders, Gary Shenk, Joan Smedinghoff, Scott Phillips, Doug Austin (W), Emily Trentacoste (W), Michelle Williams (W)

Administration: Bill Ball, Rachel Dixon, Melissa Fagan, Annabelle Harvey

Chesapeake Bay Program Biennial Strategy Review System (SRS) Check-in– *Kristin Saunders (UMCES), Mark Bennett (USGS)*

Kristin Saunders (UMCES) provided a review of the SRS process. The Strategy Review System implements adaptive management into the Chesapeake Bay Program through a decision framework developed by GIT 6. There are instructions, templates, and tools that each GIT uses to review their progress on outcomes. SRS also created collaborative cohorts, aimed at connecting themes among outcomes with common factors or indicators. The Biennial review is underway right now and will wrap up in March 2019, when it will begin again. March 2019 is the Biennial Meeting where progress over the past two years of review will be wrapped up and any adjustments to the process will be discussed and implemented for the next round of reviews. Saunders wanted to discuss ways that STAC could be more connected to this process and GIT outcomes in general. She suggested that STAC members plug into the SRS process and connect to outcomes relevant to them. STAC members could attend or call-into Management Board meetings for relevant outcome reviews. They could also attend GIT meetings and provide contributions where needed. There have been some challenges in implementing the SRS strategy. Not all outcomes are in the same place, whether due to funding, available science or other constraints. A big point of discussion is being articulate about uncertainty, which is something STAC could potentially become involved in. There will be discussions on this at the March 2019 Biennial meeting and STAC could weigh-in. STAC could also work with STAR to create a prioritized list of science needs for the GITs moving forward and connect with GITs to inform on past workshops and report recommendations.

Mark Bennett (USGS), chair of the Climate Resiliency Workgroup, shared his recent presentation on the two climate outcomes (Monitoring and Assessment and Adaptation) to the Management Board with STAC. The outcomes are fairly qualitative and open-ended. There is a template structure for these presentations, so each outcome presentation covers the same information. A key piece is an 'ask' from the Management Board, describing the needs of the outcome in order to hit their goals. Other important components of these presentations include cross-outcome considerations, gaps in decision framework and strategies. Related directly to STAC, this climate outcome has a hand in the upcoming STAC workshop on Climate Change Modeling 2.0. Management Board is looking for a prioritized list of climate research and STAC input is wanted.

ACTION: STAC members will work with the Climate Resiliency Workgroup to generate a prioritized list of climate-related science and research needs in response to a specific request from the Management Board, as a part of the SRS Biennial Review.

ACTION: STAC members will plug-into the SRS process and get involved where relevant and possible.

Update on Optimization Project – Daniel Kaufman (CRC)

Kaufman provided an update on the Chesapeake Assessment Scenario Tool (CAST) optimization tool that will facilitate the identification of more cost-effective and otherwise optimal approaches to pollutant load reduction for CBP partners. The current system requires the user to decide on BMPs to input into scenarios and it will evaluate the nutrient loads and costs. Due to the extensive number of BMPs in CAST, this system does not provide a feasible way to test all potential strategies for reducing load in a cost-effective way. The optimization tool is intended to find the best BMP to reach the goal load at the best cost and is planned to include cobenefits, which are of increasing priority to the CBP.

Kaufman has developed a prototype, following a 2016 STAC workshop where STAC requested CBP develop this tool and is undergoing testing at this point. It is unlikely that the optimization tool will be ready for WIP development but it should be ready for milestone development soon. This project is currently funded through March 2020. The current prototype is only for a select subset of BMPs in certain geographical regions. Components of the optimization tool include total cost, load reduction and available acreage. Next steps include case studies, accounting for existing BMPs, testing on expert users and testing on the average user.

JK Bohlke (USGS) asked what spatial resolution would be used since data is being derived from various resolutions. Kaufman explained that the finest spatial scale would be at the land river segment. Shirmohammadi asked what the object of function would be. Kaufman explained that it is a function of cost for the load reduction and the variable is the amount of each BMP. Kaufman also clarified that the units for TMDL are not in nitrogen or phosphorous, but oxygen damage units and that any nitrogen or phosphorous from any part of the environment will be expressed in oxygen damage units.

Revisit STAC Vacancies – Brian Benham (STAC Chair – VT)

Benham presented an updated list that included a list of potential nominees for the federal vacancies from the previous day's discussion along with a more detailed description of their expertise in order to select 3-4 priority nominees to contact. It was agreed that bolded names, which indicated support in previous discussions, would be the prioritized list. Executive Board will consider these names and move forward in the nomination process.

ACTION: STAC Executive Board will use the updated list of nominees from this meeting to move forward with filling 3 federal vacancies and 1 at-large vacancy in the Environmental Data/Analytics category. **STAC members** should send any additional nominees for this category to STAC staff.

Wrap-up

The next quarterly meeting will be December 4-5, location to be determined. There is an on-going list of potential topics. Members expressed interest in including a 'Chesapeake Bay Program 101' to better understand the programmatic organization of the CBP and to introduce new STAC members to STAC's role in the partnership. There was also interest in an update on the November SRS meeting and for a STAR report-out.