



Update on STAC Reviews for the Midpoint Assessment

Rachel Dixon and Bill Ball (CRC)
STAC Quarterly Meeting – June 14, 2017

Outline

- Highlights of the reviews currently underway –
 - Status
 - Overview
 - Findings
- Challenges
- Needs
- Opportunities

At a Glance

- We've initiated...

FY15

- 7 workshops
- 2 reviews

FY16

- 4 workshops
- 6 reviews

FY17

- 6 workshops
- 1 review (so far)

- 4 reviews currently in progress
- 1 new (and final!) MPA review request received
- 2 non-MPA reviews/reports:

Review Title/Topic	Status	Sponsor
Technical Review of Microbeads/Microplastics in the Chesapeake Bay	Complete	CBC
Evaluating boat wake wave impacts on shoreline erosion and potential policy solutions	Complete	CBC

Review Title/Topic	Status	Sponsor
Chesapeake Bay Scenario Builder/Nutrient Input Approach	Complete	WQGIT Watershed Technical Workgroup
General Additive Models (GAMs) to estuarine WQ trend analysis and explanations	Complete	STAR Integrated Trends Analysis
2015 Chesapeake Bay Criteria Addendum	Finalizing	STAR Criteria Assessment Protocol Workgroup
Proposed revised James River chlorophyll <i>a</i> water quality criteria (Part I) (Part II)	Complete	STAR Criteria Assessment Protocol Workgroup
	Finalizing	
Phase 6 Chesapeake Bay Watershed Model (Conowingo and climate change aspects now ready)	Finalizing Starting review	STAR Modeling Workgroup
Chesapeake Bay Water Quality/Sediment Transport Model (WQSTM)	In progress (awaiting CBP sensitivity testing & calibration)	STAR Modeling Workgroup
Application of WRTDS to watershed WQ trend analysis and explanations	FY17 Workshop Proposal	STAR Integrated Trends Analysis
Approach being taken to factor climate change considerations into the 2017 Chesapeake Bay TMDL Midpoint Assessment	Request received	STAR Climate Resiliency Workgroup
Phase 6 Land Use Hind Cast Methodology	Request withdrawn	WQGIT Land Use Workgroup

CBP/Management Board (MB) Responses have been received for 2 of the 3 completed reviews



2015 Chesapeake Bay Criteria Addendum

- **Review Charge:** The U.S. EPA, in cooperation with its six watershed State partners and the District of Columbia, has developed a series of eleven water quality criteria guidance documents in accordance with the Clean Water Act. Using these documents, Chesapeake Bay regional water quality criteria were developed and adopted into state water quality standards regulations protective of living resources and their habitats.
- The review panel suggested a clarifying re-write of the addendum and then requested additional revisions to the updated document. The CBP provided a new and improved document in January.
- Review of the revised documentation complete
- **Next Step – STAC review of final report**

Reviewer	Affiliation
Marjy Friedrichs	VIMS, STAC
Malcolm Scully	Woods Hole
Mary Christman	U of F
Kenneth Moore	VIMS
Jian Shen	VIMS
Steve Weisberg	SCCWRP

Proposed Revised James River Chlorophyll *a* Water Quality Criteria



- **Review Charge:** The VA DEQ initiated a review of the numeric chlorophyll *a* criteria and criteria attainment assessment procedures for the James River. VA DEQ established the James River Chlorophyll *a* Criteria Re-evaluation Science Advisory Panel to analyze the best scientific information currently available and provide recommendations as to whether the chlorophyll *a* criteria were protective of the aquatic life designated use and scientifically defensible.
- **Part I (Complete):** The STAC panel reviewed the proposed criteria and the reports from the VA DEQ and its Advisory Panel. The panel recommended some revisions to the approach and revision to criteria.
- **Report was reviewed by STAC, completed and released 11/7/16 (available online).**
- **Still awaiting CBP MB response which will come with Part II (next slide).**

Reviewer	Affiliation
Lora Harris	UMCES-CBL
Jim Hagy	EPA
Martha Sutula	SCCWRP
Tom Fisher	UMCES-HPL
Dong Liang	UMCES-CBL

Proposed Revised James River Chlorophyll *a* Water Quality Criteria



- **Part II (In Progress):** The STAC review panel re-convened in February to determine if the revised proposed criteria from VA DEQ were responsive to the concerns and recommendations put forth in the Panel's original report.
 - Provided preliminary “fatal flaw” findings to VA DEQ on April 25.
 - Panel was provided with a revised set of 3 peer review questions which more appropriately reflected the new documentation for the second, separate peer review.
 - Deadline for “Part II” report is now **June 30**.
Anticipate a much shorter (“bare bones”) 2nd report.
 - The CBP/MB will provide written responses to both parts of the review effort following completion.



Phase 6 Chesapeake Bay Watershed Model

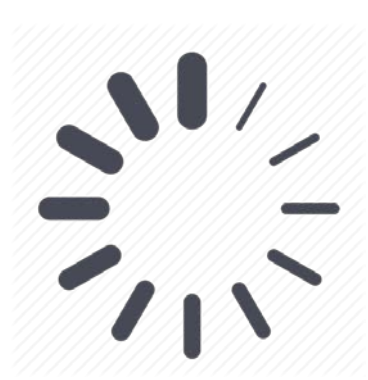
- **Review Charge:** Phase 6 is the most recent of a series of increasingly refined versions of the CBWM, and is a major departure from previous deterministic and mechanistic versions. The water quality simulation is an entirely new approach which relies on a structure based on multiple models. The panel is reviewing the Phase 6 Model with particular emphasis on the new multiple model aspects of the watershed simulation
- **Panel's report (minus Conowingo and climate change) was provided to the CBP Modeling Workgroup on 12/2/16**

Reviewer	Affiliation
Zach Easton	VT, STAC
Don Scavia	U of Michigan
Doug Smith	USDA-ARS
Andrew Miller	UMBC, STAC
Peter Kleinman	USDA-ARS
Claire Welty	UMBC
Lawrence Band	UNC
Kathy Boomer	TNC, STAC
Rich Alexander	USGS
James Pizzuto	U of Del



Phase 6 Chesapeake Bay Watershed Model

- **Status:** As of June 1 (with release of the draft Phase 6 model), received new documentation addressing simulation of Lower Susquehanna reservoirs (i.e. Conowingo) and an assessment of influence of climate change on water quality standards
 - Two new reviewers brought on for Conowingo:
James L. Martin (Mississippi State U.)
Gregory Morris (GLM Engineering COOP) [tentative]
- **Next Steps:** When the final two questions are completed, a single final document will be prepared, sent to STAC for review, and formally distributed to the Partnership.
 - Final recommendations outlined may be subject to change when the remaining questions are considered



Chesapeake Bay Water Quality/Sediment Transport Model (WQSTM)

- **Review Charge:** The 2017 version of the WQSTM is the most recent of a series of coupled hydrodynamic and water quality models. New aspects include improved 1) representation of the bioavailability of particulate organics and 2) ability to simulate Conowingo infill and climate change in tidal waters. Refinements to the shallow water simulation include 1) attenuation of nutrient/sediment loads through tidal wetlands, the 2) representation of shoreline loads, and the explicit representation of oyster aquaculture, sanctuaries, and wild populations.
- **Status:** Panel held meeting on June 5-6. Panel is working with Modeling Workgroup to gather additional sensitivity simulations and scenario runs after final calibration. Will then reconvene with webinar and conference calls.

Reviewer	Affiliation
Damian Brady	U of Maine
Joe DePinto	Limnotech (retired)
Marjy Friedrichs	VIMS, STAC
Tom Jordan	SERC
Dominic DiToro	U of Delaware
Steven Chapra	Tufts
Meng Xia	UMES
Matt Gray	UMCES Horn Point


Challenges

- Changing timeline for Mid-Point Assessment (MPA)
 - Shift in MPA schedule/Phase 6 Model Approval Process
 - Scope and timeframe of reviews evolves over time.
 - Additional honoraria required – for greater review of scope, and/or panel retention over extended timelines
 - Time constraints and “responsive” review format limits scope and limits reviewers ability to comment on big-picture issues.
 - Difficult to schedule calls/meetings with larger panels
- Managing conflicts of interest is often a challenge (no panel members with related GIT or workgroup activity)

Needs - Coming Up

- Final MPA review request received:

Chesapeake Bay Program Partnership's Climate Change Assessment Framework and Programmatic Integration and Response Efforts

- If anyone is interested in serving on the panel above, let us know ASAP
- Expect **13** activity reports (reviews and workshops) to be released summer-fall 2017. STAC input is essential!
 • 2 are coming up for STAC review this month!

Opportunities

- MPA reviews have helped STAC get more ‘plugged in’ to the decision framework ongoing at the CBP – especially at the WQGIT
- Findings could lead to additional proactive review or workshop activities
- STAC Model Visioning Workshop – January 2018

We're almost there!!



Rachel Dixon

STAC Coordinator

dixonr@chesapeake.org

Bill Ball

STAC Executive Secretary

bball@chesapeake.org

For more information regarding workshops and reviews (including reports, as available), visit the STAC webpage at:

<http://www.chesapeake.org/stac/>