Water Quality Goal Implementation Team (WQGIT)

Monday, February 23rd, 2026
1:00 - 4:00 PM

Visit the meeting webpage for meeting materials and additional information.

Purpose: This is the monthly meeting of the Water Quality Goal Implementation Team (WQGIT). Meeting topics included an update on CWGT Co-Chairs, an update on upcoming work for Phase 7 model development, an educational presentation on the airshed and watershed model, and a follow-up discussion on considerations for future model updates.

Actions & Decisions

Action: We are still planning to hold a hybrid WQGIT meeting soon. The exact date will be finalized and shared with the WQGIT ASAP. **Post Meeting Update**: WQGIT Leadership and the planning team decided to push the hybrid meeting to June 2026 to allow more time for CWGT leadership transitions, planning agenda items, and gaining more information about structure, governance and Management Strategies.

Action: CBPO will develop a process for coordinating how to receive, catalogue, and respond to partnership comments during the Phase 7 Model Year of Review.

Action: If you have any feedback on the timelines and other materials communicating upcoming model development work, please reach out to Bo, Auston, and WQGIT leadership.

Action: If there are any additional questions or concerns from the overview of the Watershed and Airshed model, please reach out to Lew and Joseph. WQGIT will hear an overview of the Main Bay Model and Multiple Tributary Models at the March meeting.

Action: CBPO will refine the schedule graphic based on feedback received during the meeting. Please reach out to WQGIT leadership with any additional comments or questions on future model update considerations and the presentation.

Minutes

I. Welcome and Announcements
Lead: Suzanne Trevena, WQGIT Chair

II. Business, Workgroup & Phase 7 Decision Updates

Lead: Jeremy Hanson, WQGIT Coordinator

Jeremy gave an overview of announcements and updates including upcoming NFWF proposal deadlines, a STAC at-large member call for nominations, a recording of the METRIC webinar from February, and upcoming CSN Webinars, which are highlighted on the posted slides. Jeremy highlighted all the new Goal Team chairs, which were confirmed at the Feb 12th Management Board meeting. For the Clean Water Goal Team, chairs will be Lee McDonnell and Greg Sandi. Thank you to Suzanne Trevena for the amazing work she has done as WQGIT Chair! Jeremy also highlighted remaining Phase 7 Decisions, mostly at AMT and WTWG, which are outlined in the latest Decision Tracker and workgroup updates, outlined on the posted slides.

Materials: Presentation, Oct 2025 – Feb 2026 Phase 7 Decision Planner (version date 2.19.26)

III. Clean Water Goal Team Co-Chairs and Planning Horizon

Lead: Jeremy Hanson, WQGIT Coordinator

Jeremy gave an overview of the CWGT's focus and work through 2030. He highlighted near-term priorities for the RENPS Outcome, which include continuing to finalize inputs and methods going into calibration for the Phase 7 model and building foundations and shared understanding in relation to nutrients and sediment work. Beyond this, we will also incorporate work on the WQSAM and Toxics Outcomes. Jeremy also shared updates from the January and February Management Board meetings on structure and governance changes as well as planning for Management Strategies. Jeremy provided a timeline to show how the WQGIT meetings schedule coincides with these wider discussions and developments. It was clarified that the WQGIT will likely transition into the CWGT, with new Chairs, at the next meeting.

Materials: Presentation

Actions:

1. We are still planning to hold a hybrid WQGIT meeting soon. The exact date will be finalized and shared with the WQGIT ASAP. **Post Meeting Update:** WQGIT Leadership and the planning team decided to push the hybrid meeting to June 2026 to allow more time for CWGT leadership transitions, planning agenda items, and gaining more information about structure, governance and Management Strategies.

Discussion:

- Marel King, CBC asked (in chat): When does "WQGIT" officially become "CWGT"? Will that be the next meeting when new co-chairs start?
    - Greg Sandi, WQGIT Vice-Chair (in chat): Yes, mostly likely we'll be transitioning after this call.
    - Jeremy responded that Greg and Lee will be running our March meeting, but we do not have specific guidance about official name changes between now and July. Once the governance framework is approved by the PSC, presumably that's when all the new names are officially in effect.

IV. Phase 7 Update and Planning

Lead: Bo Williams, EPA CBPO

Bo revisited the Phase 7 development and review schedule through December 2027, diving into some updated timelines. April 1st is the deadline for submitting Phase 6 and Phase 7 BMP information, and final partnership decisions on data inputs will be finalized by the first week of March. April 2026 - February 2027 will be considered a "protected period" where no changes from comments will occur as model construction is ongoing. During this time, input data can be reviewed, followed by CAST output reviews in October 2026. An initial beta model will be finalized by Dec 31, 2026 ahead of the Jan 2027 Modeling Workgroup meeting.

Starting February 2027, the partnership and STAC reviews will occur. Modeling Workgroup meetings during this time will be used as check-ins and the WQGIT will be involved in the partnership review throughout. Bo highlighted the "domino effect" of making revisions to one part of the model. The type, complexity and location (i.e., number of dependencies) of a revision affects the level of effort needed to implement adjustments, so it is uncertain how many betas will fall into this time for now.

Discussion included emphasis on the importance of having multiple opportunities for review and re-calibration (if needed) of the model, clarification on the role and impact of the Multiple Tributary Models, a question on how the STAC review would occur and how their review questions would be developed, and a question on what key Scenarios will be available for the various stages of model review.

Materials: Presentation

Actions:

1. CBPO will develop a process for coordinating how to receive, catalogue, and respond to partnership comments during the Phase 7 Model Year of Review.
2. If you have any feedback on the timelines and other materials communicating upcoming model development work, please reach out to Bo, Auston, and WQGIT leadership.

Discussion:

- James Martin, VA DCR noted (in chat): The CBP Model Suite slide should be updated to include the multiple estuarine models.
    - Kaylyn Gootman, EPA CBPO responded (in chat): Thanks, James. Noted and we will work to reflect this in the conceptual model and figures.
- Norm Goulet, NVRC asked if there are plans for more than one calibration of this model, given the timeline appears to only have one point to review the outputs.
    - Bo responded yes, model output review is set in the Oct/Nov 2026 timeframe, but that's just the beginning. The partnership review bar on the timeline from Feb to Sept 2027 is an opportunity for more holistic review, including outputs, and could include multiple betas. The nature of a comment will have a different impact on how much needs to change as a result.
- There were multiple questions about the Multiple Tributary Models and their integration vs. separation from the rest of the Phase 7 suite of models and associated timeline.
    - James Martin asked how the MBM can come before the MTMs, because the MTMs need inputs from both the DWSM and MBM. Would have thought those would have been on essentially the same timeline.
        - Bo answered the representation on the graphic is for simplified timeline purposes. There are indeed many loops. This is to demonstrate the overall sequential nature and highlighting that some things can be started at different points.

        - Lew Linker, EPA CBPO elaborated that there are many dependencies but the sequential process on the timeline is accurate.
        - James clarified whether the MBM needs any boundary conditions from the MTMs. If it does not, then how do MTMs like the Potomac Tributary model feed into the MBM?
            - Lew confirmed the MBM does not pull anything from the MTMs. The MBM is what all the decisions we'll be making for our upcoming targets will be based on. The MTMs will provide added emphasis locally for those areas that have them, but they are run independently at a finer scale.
            - Lew added that there is no longer a Potomac MTM – there are only MTMs for the Rappahannock, Choptank and Patapsco/Back.
    - Kristin Saunders, MDNR asked (in chat): Are the "multiple tributary models" and 'habitat suitability model" on a parallel but similar time frame and will they also require review along with Phase 7?
        - Lee McDonnell, EPA CBPO responded (in chat): The MTMs will be reviewed as part of the review seen on the screen. The Habitat suitability (work being done for the possible Tiered Implementation targets) is running on its own track. The results would be needed for development of planning targets in 2028.
    - KC Filippino, HRPDC asked (in chat): There aren't MTMs for every trib either, so I'm curious why the MTMs are still part of this timeline?
        - Lew responded that as more are developed, we think it would be useful to have everything together. We have a new ACOE Conowingo model, too. Having them all reviewed together as one bunch would be of greatest utility.
    - Dave Montali, WVDEP asked whether the WQGIT is receiving a primer on the MBM and MTMs at the March meeting. Lew and Bo confirmed yes.
- Bill Keeling, VADEQ shared (in chat): What EPA and any given partner jurisdiction sees as fatal can be two very different things.
- James Martin asked (in chat): STAC Review - Who will be developing/approving the STAC "review question(s)"? Will the STAC review include the full suite of models?
    - Bo responded that the Modeling Workgroup will work up questions of where they want STAC to focus their review, particularly on differences between Phase 6 and Phase 7.
    - Lew elaborated that the philosophy in the past was based on the EPA Science Advisory Board guidelines and emphasizes a review that looks at new elements (e.g. new generalized stream network and new calibration method in coastal plain). Modeling WG puts together questions to orient their review, but STAC can take it anywhere if they have additional things to highlight.
- James Martin asked (in chat): Which Key Scenarios will be available for the various stages of model review? New Land Use(s), New BMP Data, new nutrient inputs all new to the HSPF.
    - Bo responded Auston has been work on this. E3 is the focus right now, which is set to be completed in Oct/Nov 2026. Lew confirmed that is the timeline the modeling team is working with.
    - Auston Smith: James, apologies I could not come off mute and thanks to Lew for his reply. Are there other particular scenarios in addition to the ones Bo mentioned that may be beneficial to review? Happy to email on this as well!

- James Martin: No Action (1985, 2010, 2025 and 2040 Base), 1985, 2009, 2017, 2025, E3 (2010, 2025 and 2040 Base) , All Forest
- Auston Smith: I will double check but I would expect those listed years for the no-action, base year, and E3 scenarios would all be available in early 2027 for the partnership to see the annual progress in a similar format to how it is accomplished now, and produce the planning targets. The All Forest scenario timeline I can check on but would expect the same if not earlier-I know it required less sector workgroup insight so it was not on our immediate list for early review in 2026. Thank you for the question!

V. Airshed and Watershed Model Primer

Lead: Lew Linker, EPA CBPO and Joseph Delesantro EPA/ORISE

Lew provided a robust presentation on the major refinements to the Watershed Model (including CalCAST) and Airshed Model for Phase 7. Lew provided background on the purpose and function of CBP's modeling, which makes the tools to make the plans to improve the water quality and living resources in the Chesapeake Bay ecosystem. Then, Lew and Joseph went through improvements in Phase 7, summarized below. Questions included how the no action scenarios are defined, clarification on what the new Conowingo model includes, what constraints are placed on CalCAST to prevent large variations between input levels in a close geography, and what improvements to sediment modeling have occurred. There was a request to look back at previous STAC Model Reviews and provide reflection on how the Phase 7 model meets those STAC recommendations.

Major refinements to the Watershed Model include:

- Better hydrology simulation through use of daily precipitation from PRISM and NLDAS hourly adjustments
- Improved calibration due to longer (40-year) period of simulation, Generalized Steam Network (GSN) simulation, and use of nearshore tidal stations
- Improved assessment of loads and nutrient processes through CalCAST
- Finer segmentation of broad land use categories at an NHD+ level
- Improved simulation of Conowingo infill through the Conowingo Model
- Updated representation of future environmental conditions of increased temperature and rainfall volumes and intensities through the application of CMIP6
- And more outlined on the posted slides.

Major refinements to the Airshed Model include:

- Improved atmospheric deposition load estimates from 40-years of data
- Refined simulation of deposition to the watershed, tidal Bay, and for the first time, to coastal shelf waters
- Improved ammonia simulation and dry deposition
- Better source deposition tracking of NOx and ammonia (ISAM)
- New 2015 Base Reference scenario, State Targets scenario, and a 2050 Zet Zero emission of GHG scenario

Materials: Presentation

Actions:

1. If there are any additional questions or concerns from the overview of the Watershed and Airshed model, please reach out to Lew and Joseph. WQGIT will hear an overview of the Main Bay Model and Multiple Tributary Models at the March meeting.

Discussion:

- Norm Goulet, NVRC asked (in chat): Should we redefine the No Action Scenario as no action from this point forward and include the actions done to date? Why go back to 2010?
    - Lew clarified that he is only referencing the 2010 TMDL here, but the WQGIT can determine a different base year for the no action scenario.
- KC Filippino, HRPDC asked (in chat): Will there be a presentation at Modeling WG about the new Coastal Plain monitoring data and how it's being incorporated? Or has there been any already?
    - Lew responded: Yes, we'll bring this back in April to Modeling WG.
- James Martin, VA DCR asked (in chat): Does the new ACOE Conowingo model include discharges and concentrations under the various scenarios?
    - Lew responded that model has a complete treatment of nutrients through diagenesis experiments. It is a full, detailed nutrient calibration that would accompany the sediment transport model to show the best they can the store, spill and withdrawal of water from the reservoir.
    - James asked if that also includes discharge through the power generation dam. Lew confirmed yes.
- James Martin asked when going through CalCAST and evaluating input values, are there constraints applied to prevent huge variations between input levels in a close geography?
    - Joseph responded that there are constraints places on model values, but in terms of variance between one model unit to the next that is mostly handled on the input side. If we ensure we get inputs consistent in time and space, then we should see similar results in the output. Variation could also be due to land-to-water or stream delivery factors which vary from model unit to model unit. When we are running through versions of CalCAST generating potential parameters, we have many validation checks to flag the issues you're referring to.
- Tony Timpano, VADEQ asked (in chat): Could you better account for such spatiotemporal autocorrelation among parameters by making n-dimensional random samples of parameters concurrently? (as opposed to what is implied by the graph of parameter distribution is 1-dimentional.
    - Joseph responded (in chat): Yes, CalCAST is Bayesian and n-dimensional.
- James Martin asked what updates have occurred for the modeling of sediment in Phase 7?
    - Lew responded that updates include the improved Conowingo Model, improved attenuation through coastal reservoirs and impoundments in the coastal plain, improved assessment of sediment accumulation loss, and improved approach to shoreline erosion. But the general methodology and defaults haven't changed much from Phase 6.
    - James pointed out that current achievement of sediment targets is due to the fact we've defined them that way. We need to consider whether it will really help us meet the water quality standards.
    - Kevin DuBois noted (in chat): I thought I read that some ODU researchers measured that one major storm can deliver a whole year's estimated sediment volume in a single event. So perhaps we're underestimating sediment contributions to the Bay.
        - Lew responded that extreme events happen and we take them as a matter of record. We avoid them in our assessment of a hydrologic period, because we can't manage for those extreme events.
        - Norm noted (in chat): could have a big melt this year

- James Martin asked (in chat): Since the new STAC Review will focus research questions on what is new in the P7 Modeling system, I think it would be useful to look back at previous STAC Model Reviews, and provide some reflection on how the P7 Model system meets those STAC recommendations.
    - Lew responded that seemed fair. Maybe we don't have to walk too far back in time, but we can certainly look at the Phase 6 review.
- Dave Montali asked (in chat): Am I correct that all of our CalCAST work is in response to a P6 STAC rec.?
    - Lew responded (in chat): I don't know. I'd have to look back at the P6 STAC review.

VI. Break

VII. Future Model Updates

Lead: Lee McDonnell, EPA CBPO

Lee McDonnell, EPA CBPO provided a further presentation on considerations for future model phase and version updates to build off the initial conversation from the January 2026 WQGIT meeting. Lee shared a long-term timeline of model-related items alongside the 2040 *Watershed Agreement* time horizon. He outlined the transition into the actual use of Phase 7 after 2030, continuation of 2-year milestones, timing of critical datasets like the High-Resolution Land Use and Ag Census data, and an estimate of the necessary glidepath leading up to the next phase change. A major question to still be explored and resolved is determining how often BMPs can be added to the model within the same phase, and if that can be separated from a model update. Discussion included emphasis on the need for more frequent opportunities to add new BMPs to the model, recognition the previous 2-year version update pace was challenging, the potential for new BMP additions to be easier if the historical record is not modified, clarification on the timing of the Ag Census data, and a suggestion that the schedule could be developed with adaptive management in mind.

Materials: Presentation

Actions:

1. CBPO will refine the schedule graphic based on feedback received during the meeting. Please reach out to WQGIT leadership with any additional comments or questions on future model update considerations and the presentation.

Discussion:

- Alisha Mulkey, MDA noted (in chat): Next Ag Census will occur in 2027, but data availability is generally 18-24 months. Alisha elaborated that USDA conducts surveys at the end of calendar year so data availability would not be until much later.
    - Lee responded that 2-year lag could mean it actually lines up well with Land Use data then.
- James Martin, VA DCR asked if there is a sense for the timeline for a version update. One year? Two years? It would be helpful to know that as we consider this longer timeline.
    - Lee responded that we were on a path previously updating every 2 years. That proved to be difficult at best. Would suggest looking at a longer time-horizon than that, and timing it well with the release of these key datasets.
    - James responded: I like that thought. If it looks like ag census coming in 2027 and land use in 2029 then planning for a version in 2030 could be a good

thought, with including new BMPs at that time. Then, potentially 2035 for the next version afterwards.
    - Lee noted that 2030 will be the first year of actually deploying the Phase 7 model, so we should consider whether we want to make a version update that same year.
- Dave Montali, WVDEP suggested we may not need a new model when a BMP is added. Don't understand why we need a model update to do it if we can just add it onto what's available for now going forward. The problem is for the history.
    - Dave agreed that 2 years was extremely problematic and we didn't get anything out of it. We could probably move to 4-5 years of using the same version.
    - Lee responded they will look into how this could work for separating the history from new submissions.
- Norm Goulet, NVRC (in chat): No new BMPs between 2026 and 2040 is problematic.
    - Sarah Lane, MD DNR (in chat): Was about to type the same thing.
    - Lee responded that the question marks on the timeline were supposed to indicate new BMPs could occur in any of the years between 2026 and 2040. That is up for discussion. We just need to determine when that occurs.
    - Norm elaborated that while he is in favor of fewer Expert Panels, we need some greater frequency of addition of new BMPs to the model. If we could come up with a process where we're moving forward and we're not violating the calibration, let's do it. We've got people putting stuff in the ground and they want to get credit for it. If they're not getting credit for it, they're violating permits, and there's a host of things that go with it.
    - Lee responded that it sounds like maybe there's a path forward for if we're truly looking forward only and not trying to create a historic record. We need to be able to recognize new innovative practices and work occuring.
    - James Martin suggested whether the same approach [to considering only changing the future and not a historical record] could be utilized for incorporating Land Use and Ag Census data to the model.
- KC Filippino shared (in chat): Reflecting on STAC's meeting on adaptive management on Friday, this schedule seems like it could be developed with adaptive management in mind. Which means to me we shouldn't be making such structured decisions until we've identified how our adaptive management feedback loops will operate. Just food for thought, I'm not an adaptive management expert. But having model developments drive all of our timelines seems backwards.
- James Martin shared (in chat): We might be best served thinking about this timeline in terms of Progress years rather than calendar years.

VIII. Wrap-Up
Lead: Caroline Kleis, WQGIT Co-Staffer

IX. Adjourn

Next Meeting: Monday, March 23, 2026

Attendance

Suzanne Trevena, EPA (WQGIT Chair)
Greg Sandi, MDE (WQGIT Vice-Chair)
Jeremy Hanson, CRC (WQGIT Coordinator)
Petra Baldwin, CRC (WQGIT Co-Staffer)
Caroline Kleis, CRC (WQGIT Co-Staffer)
George Onyullo, DC DOEE
Sarah Lane, MD DNR
Cassie Davis, NYS DEC
Scott Heidel, PADEP
Kevin McLean, VA DEQ
James Martin, VA DCR
Dave Montali, WV DEP
Scott Settle, WV DEP
KC Filippino, HRPDC
Kevin DuBois, DoD
Joe Wood, CBF
Marel King, CBC
Mike LaSala, LandStudies
Dylan Burgevin, MDE
Christina Lyerly, MDE
Alisha Mulkey, MDA
Elizabeth Hoffman, MDA
Kristin Saunders, MD DNR
Anne Hairston-Strang, MD DNR
Bailey Robertory, MD DNR
Tom Parham, MD DNR
Tyler Trostle, PADEP
Ashley Hullinger, PADEP
Bruce Naylor, PADEP
Natahnee Miller, PADEP
Samuel Canfield, WVDEP
Maggie Woodward, CBC
Norm Goulet, NVRC
Jamie Mitchell, HRSD
Tony Timpano, VA DEQ
Amanda Shaver, VA DEQ
Arianna Johns, VADEQ
Bill Keeling, VA DEQ
Katie Brownson, USFS
Bo Williams, EPA
Lee McDonnell, EPA
Lew Linker, EPA
Joseph Delesantro, EPA/ORISE
Auston Smith, EPA
Kaylyn Gootman, EPA
Gopal Bhatt, PSU/CBPO
Eric Hughes, EPA
Megan Thynge, EPA
Kelly Gable, EPA
Doug Bell, EPA
Lucinda Power, EPA
Jimmy Webber, USGS
Breck Sullivan, USGS
Eugenia Hart, TetraTech
Gabriel Duran, CRC
Sushanth Gupta, MCWOG
Olivia Martin, Devereux Consulting
Mark Dubin, Virginia Cooperative Extension
James Shallenberger, SRBC
Terra Famuliner, RVARC
Ellen Egen, Aqua Law
Deni Chambers, Northgate Environmental Management
(804) 350-2247

Acronyms

ACOE: Army Corps of Engineers
AMT: Agricultural Modeling Team
BMP: Best Management Practice
CAST: Chesapeake Assessment Scenario Tool
CBP: Chesapeake Bay Program
CMIP6: Coupled Model Intercomparison Project Phase 6
CSN: Chesapeake Stormwater Network
CWGT: Clean Water Goal Team
DWSM: Dynamic Watershed Model
E3: Everything, by Everyone, Everywhere
EPA: Environmental Protection Agency
GHG: Greenhouse gas
MBM: Main Bay Model
MBM: Main Bay Model
METRIC: Monitored and Expected Total Reduction Indicator for the Chesapeake
MTM: Multiple Tributary Model
NFWF: National Fish and Wildlife Foundation
NHD+: National Hydrography Dataset Plus
RENPS: Reducing Excess Nitrogen, Phosphorus and Sediment Outcome
STAC: Scientific and Technical Advisory Committee
WQGIT: Water Quality Goal Implementation Team
WQSAM: Water Quality, Standards Attainment and Monitoring
USDA: US Department of Agriculture