Chesapeake Bay Program

Watershed Technical Workgroup (WTWG)

Meeting Minutes

Thursday, February 2, 2023

10:00 AM to 12:00 PM

Meeting Materials

Summary of Actions and Decisions

Decision: The WTWG approved the December Meeting Minutes and January Meeting Minutes.

Action: VOTING MEMBERS (signatory + at large): Please complete the following straw poll to indicate where you stand on the Car Manufacturer Settlement BMP proposals **by Thursday, February 9th:** https://forms.gle/whrNUMKU1s6yYqiD6. This decision item will be brought back to the group for a final vote at a future meeting.

Action: Please provide any additional feedback on the Management Board (MB) Decision 3 Charge timeline and proposed path forward to WTWG leadership (rcassilly@chesapeakebay.net; cassandra.davis@dec.ny.gov; pickford.jacqueline@epa.gov) **by Thursday, February 16th.**

- ***Additional note:*** As per the charge from the MB, the WTWG will **not** be focusing on changing or reevaluating data sources or inputs to the model for this task, but rather, focusing on the QA/QC processes and protocols in place after we acquire such data. Please provide feedback accordingly.

Action: The WTWG leadership will work with the WQGIT leadership to determine if the Dissolved Oxygen (DO) Equivalent Factor can be a topic of discussion at a future WQGIT meeting.

Meeting Minutes

10:00 AM – **Introductions and Announcements** – Cassandra Davis, NYSDEC/Chair (15 min).

- *Please put your name and affiliation in the chat box for attendance purposes. Thank you!*
- **Decision:** The WTWG approved the December Meeting Minutes and January Meeting Minutes.
- Update on WQGIT approval of updated WTWG scope and purpose – Cassandra Davis, NYSDEC
  - WQGIT approved the scope and purpose.
  - ***Post meeting note:*** The WTWG website "scope and purpose" section has been updated to reflect the agreed upon changes.
- Upcoming CAST Webinar – Helen Golimowski, Devereux Consulting
- Progress Update/Announcements - Olivia Devereux, Devereux Consulting

10:15 AM – **Dissolved Oxygen (DO) Equivalent Factor: Part 2** – Bill Keeling, VA DEQ, and Gary Shenk, USGS-CBPO (30 min).

Last month, Gary presented on how and why the DO equivalent factor was derived and a general understanding of what those values indicate or mean (the PSC's effort to create an

equitable way of allocating target loads for the TMDL effort). At this meeting, Bill presented on how DO values can be used for watershed planning efforts, with example calculations included, followed by discussion/questions from the group.

Discussion

Dave Montali: Slide 13 - is that the exchange rate or is that the loading coming from those areas?

Bill Keeling: It is the DO equivalent number.

Dave Montali: What is this saying?

Bill Keeling: It is saying the Shenandoah valley is a source of nutrients, as well as the eastern shore and Northern Tier the state a little, as well. eliminates large parts of the James but indicates the lower James has some issues possibly worth targeting. Just think this is another tool to use when evaluating scenarios.

Dave Montali: For WVA when we do WIPs we don't have much management in the small portion of the James, so we overshot our Potomac basin targets to accommodate not doing all that may be prescribed for our James component. But your point is we need to use DO units broader than that?

Bill Keeling: The reality is that these are plans. Real implementation will not mirror our plans, they will be different. Important thing is DO impact and whether or not we're making progress towards that. The difference between loads of CAST 19 and 21 is not statistically significant. To me, this can help justify funding or focus on different areas. The idea with this is to have a tool that says overall this area is hitting the target or coming up short.

Dave Montali: I think we've had that flexibility in the past with planning efforts.

Olivia Devereux (in chat): We are planning to build in a calculator for the basin to basin and TN to TP exchanges in CAST. We can certainly add in this information as part of that enhancement.

Jeff Sweeney: I like this idea. Exchanges between N and P for a WIP - in a typical scenario, P reductions go beyond what is needed and N tends to fall short, so that's why we do exchanges in order to lighten the level of effort for N. But aren't those exchange ratios for each of the major tributaries rooted in this DO equivalent?

Gary Shenk: Yes, exchange ratios and planning target calculations are based on this same thing. The currency of TMDL is not N and P - it's truly oxygen.

Jeff Sweeney: At one point, chlorophyll A standard was the focus in the James rather than DO, not sure if that's still the case. Standard to meet chlorophyll A is more rigorous than DO in the main stem, would the James need to be separated from this process?

Bill Keeling: Planning and reductions for James in the WIP are for chlorophyll A. We went way beyond what we needed for DO in the James because of those chlorophyll A reductions. Because we had to do so much for the James, it did provide more of an effect/relief in other basins. We don't have to do as much in other basins because we overachieved in the James.

James Martin: My takeaway is that the way the partnership communicates progress may not be adequate. Pollution reduction indicator only has N and P total loads and a goal we're shooting for. Lots of room between basins where you could produce the same bottom line N number and very different effects on DO. Maybe we need to be looking harder at that indicator. Lbs of N total across the Bay doesn't tell the whole story.

Gary Shenk: This has been built into part of the optimization system and, as Olivia mentioned, will be built into CAST.

Bill Keeling: So we are dividing the quartile values to the get ratio. Don't use the ratio value, use the quartile values. Correct?

Gary Shenk: Yes. We're figuring out how much N you can exchange for P in another basin, you

can divide the two quartile values (or oxygen effect values).
Cassie Davis: Where do we find that info on N/P exchange?
Olivia Devereux (in chat): See the planning targets here. The file that downloads when you click on "planning targets" has the exchanges.
https://cast.chesapeakebay.net/Documentation/PlanningGoals
James Martin: Gary, as we get closer to 2025, should we be looking at these values at the CBW seg scale?
Gary Shenk: Interesting point. We could, but I don't think the partnership wants to develop targets at that scale, but if one jurisdiction has an oxygen number, then we're really not developing targets at that scale.
Samuel Canfield (in chat): Has a GIS tool been produced that could be included in the Chesapeake Bay net. "Targeting Portal"
Olivia Devereux (in chat): @Sam, we are working on a mapping interface for CAST, but are in the early stages. Targeting will be much easier once we have the mapping capacity in CAST. Give us about a year.
Bill Keeling: Initial request was to add this to CAST. Olivia has mentioned that is going to happen.
Olivia Devereux (in chat): See Targeting Reduction under Develop a Plan for approaches available now. https://cast.chesapeakebay.net/Learning/FreeTrainingVideos
Dave Montali: At last WQGIT meeting, talking about more effective meetings for 2023 and having targeted meetings for different topics. Phase 7 consideration of this is good, but when they are doing that effort for 2024 the discussion about all things planning targets needs to start happening. Could it be discussed at the GIT level this year or should we wait?
Gary Shenk: Don't think there's anything wrong with discussing this year.

Action: The WTWG leadership will work with the WQGIT leadership to determine if the Dissolved Oxygen (DO) Equivalent Factor can be a topic of discussion at a future WQGIT meeting.

10:45 AM – **Discussion on Quantifying the Effects of Car Manufacturer (e.g., Volkswagen) Settlement Actions as a BMP** – Jeff Sweeney, EPA, All (30 min).

At the December and January meetings, Jeff Sweeney presented on a proposed BMP associated with atmospheric emission and deposition reductions from Volkswagen settlement funding – and direction from the Modeling Workgroup about how to quantify load reductions to the Chesapeake Bay from estimates of atmospheric emission controls of nitrogen. At this meeting, a decision was requested from the WTWG on the proposal.

Discussion
Sarah Lane: Can we tweak the name? Concerned about confusion in the future when we want to implement climate solution regulatory requirements. Also, there has been discussion in the past about doing an expert panel for all air emissions. Is that still being considered?
James Martin (in chat): Recommend we remove "transportation" as well as "funded through settlement actions with car manufacturers".
Alicia Ritzenthaler (in chat): Perhaps it's called "Transportation Settlement Emission Reductions" then.
Jeff Sweeney: I don't think so. For P7 we'll work with research triangle park and our air modeling folks to see what the next projection is beyond 2035. I'd expect this effort related to what's being spent through these funds would become part of that. It's really related to the

transportation sector. If it's not related to transportation, then it's more related to buildings, offices, etc. and trying to reduce those industries. Not sure all that will be considered for this next projection of what would or could be done by the states.
Sarah Lane: I disagree with James's comment and I don't want to expand the scope of this BMP. I want this to be very specific to this exact settlement agreement so there is no confusion in the future if we want to come up with other BMPs in the future about transportation emission reductions.
Scott Heidel: Agree. I like Alicia's idea for the name. In PA, we were leaning towards proposal 1 so we probably can't endorse this as written. Also, clear instructions on what will be needed for both proposals might make it easier for us to get on board with whatever proposal is decided on.
Jeff Sweeney: The only difference between the proposals is how you do the math. Advantage of Proposal 1 would be it probably better captures what's really going on because these deposition reductions do affect each of the land types throughout the watershed. The WQGIT is expecting a recommendation from this group which is why we're holding this vote. The WTWG is responsible for making this decision because it's about the calculation.
Scott Heidel: Proposal 1 seems more logical.
Jenn Walls: I mirror what Scott was saying regarding needing to see the details. If it's an extensive process to collect the needed data inputs, then it may not be worth it.
Jeff Sweeney: Nope no data needs to be collected by the states. We just need the settlement plan.
Alicia Ritzenthaler: Noticed in previous slides that you included other states/jurisdictions but not DC. Is there some reason DC wouldn't be able to pursue this BMP?
Jeff Sweeney: Not sure why we don't have DC on here. We have all the numbers though.
Gary Shenk: These were based on runs from the precursor to the atmospheric model, they lumped DC in with Maryland. So DC would use the Maryland number. We're expecting new runs of this type later this year. DC does have a path to use this BMP.
James Martin: This is a planning BMP but no plan in place to translate this to an eligible BMP for progress credit?
Jeff Sweeney: We could do that but you'd have to track what the emissions reductions are from an incredible amount of actions taken.
James Martin: They are tracking the implementation in the settlement plan. The data collection is ongoing. it's already there, why wouldn't we count this meaningfully towards the work we're trying to accomplish?
Jeff Sweeney: We could do that but need to review data first. Need clear separation of what's counted for this settlement vs what we're already counting.
James Martin: Frankly the planning practices are not popular because there's no way to get credit for them other than counting on the land use to pick it up.
Cassie Davis: Would these eventually be picked up in air emissions?
Jeff Sweeney: Theoretically for Progress they would be picked up.
Gary Shenk: Will not be picked up for Phase 6.
Jeff Sweeney: To credit this for Progress, we'd need data on things like the number of zero emission vehicles that came about because of this funding, the number of vehicles repaired, replacement or repower of medium/heavy duty trucks, etc. And it would need to be specific to this funding source.
James Martin: So what the BMP proposes is reporting lbs of N after you apply that percentage for each state. Once states know all of that information you stated, they run it through their state air models to get a NOx reduction estimate, calculate the N reduction thereof, reduce it by

that percentage and then report the lbs of N reduced.
Jeff Sweeney: Yes but we would need to know what inputs went into the lbs reduced. It's definitely doable but we just have to decide if it's worth the effort.
Sarah Lane: One of the reasons I want this to be very narrowly focused on the settlement agreement is because it leaves the door open for a Panel in the future to get baseline assumptions and more data - opportunity for those reductions to not be so insignificant in the future and might make it more worth the effort. James, I agree that eventually it would be great to get this counted for Progress.
Jeff Sweeney: Could you separate out what practices or actions (e.g., charging stations) were funded by the settlement agreement?
Sarah Lane: Yes. Settlement agreement is one funding source, but there are others. We could track that separately.
Gary Shenk: There are two updates to the CMAQ atmospheric model coming out for two different purposes. One will be a new base atmospheric deposition dataset (model 5.3.2). That can only go into Phase 7. CMAQ is also updating values in the table Jeff was showing earlier. We will get data that is deposition from a particular sector in a particular region going to different parts of the watershed. When we receive that data, we can recalculate the values in the table. Our initial look is showing that they are not drastically different, but will be slightly different. We can update those P6 or P7. We will have those numbers this year. Second thing - looking at Proposal 1 vs Proposal 2 - from a technical standpoint, neither is completely consistent, but Proposal 2 is more scientifically valid in my opinion. Total effect of deposition is 50% to the watershed and 50% to the bay. If you were to credit it to the bay or the watershed, either one would be equally correct. But Proposal 1 is putting it on a particular land use in a particular state, so it's actually a much smaller amount of total area that we'd be crediting to.
James Martin: If 50% goes to landscape and 50% goes the Bay - do the percentages in the table already account for that 50% direct deposition?
Gary Shenk: Yes.
Jeff Sweeney: In the baseline scenario that's being developed, do you think the modelers would be building this into that forecast?
Gary Shenk: I don't know. The base deposition dataset is only for P7. They will be using emission inventories that are available.
Lisa Beatty: Originally on slide 9, it's asking if the BMP will go before or after these calculations. How are the proposals analogous in overall planning load reduction if we're not sure how that calculation will be made for Proposal 1?
Jeff Sweeney: Both proposals will get the exact same edge-of-tide load reduction from the values in the tables.
Jess Rigelman: Technical details like that can be figured out after we decide if we want it to be applied to land use or shoreline.
Lisa Beatty, PA DEP (in chat): Thank you for the clarification of slide 9 - perhaps update the slide with the calculation that will clear up the question phrased on this slide.
Clare Gooch (in chat): Would this potential BMP be included once it's available in CAST? Or is the aim to include this in the Phase 7 model
Sarah Lane (in chat): EPA has the tidal deposition load assigned to them, correct?
Jeff Sweeney: Yes.
Olivia Devereux (in chat): It may be useful to recall that this was set in motion because PA is using this in their revised WIP to get closer to meeting their planning goal. To put it in their WIP, we need to make it available across the watershed.
Jeremy Hanson (in chat): I humbly suggest the feedback to Jeff include which option the

member is leaning toward (or if they are open to either) so that Jeff has a clear sense of that in addition to what's needed to move forward.
James Martin (in chat): FYI - Virginia's WIP III included reference to the N reductions from VW and other air emission reductions (see page 26) beyond CAA
Lisa Beatty, PA DEP (in chat): Like other EPA CBPO workgroups, I suggest putting out a poll to all voting members (including at large) to gauge voting. Also some of the clarifications mentioned during this discussion be updated in the PPT. When the PPT is a little unclear of the intention it is more difficult to convey to our internal senior staff for decisions.

Action: VOTING MEMBERS (signatory + at large): Please complete the following straw poll to indicate where you stand on the Car Manufacturer Settlement BMP proposals **by Thursday, February 9th:** https://forms.gle/whrNUMKU1s6yYqiD6. This decision item will be brought back to the group for a final vote at a future meeting.

Decision requested at March meeting: Approve "Proposal 2" as a planning BMP called "Transportation Emission Reductions" for crediting nitrogen load reductions from atmospheric emission controls funded through settlement actions with car manufacturers. Emission reductions go beyond what is already accounted for in CAST for planning purposes in jurisdictions' WIPs from forecasted effects of the Clean Air Act. Estimated load reductions associated with the BMP are rooted in direction from the CBP's Modeling Workgroup and are applied to the CAST source category "shoreline" for each jurisdiction that provides needed details for the relevant planned management actions.

11:15 AM – **Charge from the Water Quality GIT/Management Board on Phase 6 Data Processing Protocols** – Ruth Cassilly, UMD/Coordinator (40 min).

In December 2022, the Management Board charged the Water Quality GIT with the following task: "*Work with the **Watershed Technical Workgroup** and others as appropriate in the development of a policy for the partnership regarding safeguards, triggers, and protocols to prevent future data analysis variations and how they are applied (Addresses PSC 8/29/22 Decision #3).*" Ruth gave a high-level overview of the current Chesapeake Bay Program Office QA/QC protocols for data inputs for Phase 6 of the model and asked the group for feedback on the proposed steps forward (identified in partnership with the WQGIT leadership).

Discussion
Dave Montali: Within track 2, suggestion to include a reconsideration of the timeline for CAST updates. I understand we have a certain timeline for when the protocols need to be finalized and data be available, but it seems like we need a time period to incorporate the step of seeing if model results make sense.
Ruth Cassilly: Agree, when we develop a protocol for track 2, it would need to be incorporated into the overall process of CAST review timeline.
Jeremy Hanson: This is our best attempt to put a plan in place. We are NOT looking to change data input sources/numbers as previously agreed upon by the partnership. We are instead looking at the processes in place after we get the data. We want to review the procedures we have in place, see if they are adequate, and ensure they are documented properly.

Dave Montali: I thought Decision 3 only focused on Track 2.
Ruth Cassilly: We decided to split it up into two tracks based on the feedback from the MB October meeting. See document on calendar page.
Bill Keeling: Even if the WTWG were to provide guidelines for EPA on data inputs and processing those for the model it does not mean EPA is required or will follow those guidelines. As when push comes to shove EPA will make a command decision regardless of what the partnership may have agreed to as they have done in the past. So, I question the whole premise of the WTWG putting anything in writing since no one will actually be bound by what is written by the WG.
Jeremy Hanson: Good point. WTWG won't have an active oversight role on these things. Track 1 is more about documenting where these QA/QC efforts already exist - for example, there have already been efforts to improve these processes since November of 2021. Going through this with the WG will improve our transparency and accountability. And will clear things up so partners know where to go if they have questions.
Alana Hartman: Will land use and land cover updates be part of the items that would be inventoried? Review process for LUWG is so extensive. Time commitment of workgroup members should be considered.
Ruth Cassilly: Good point, Alana, we can take that into consideration.
James Martin (in chat): Every model input should be held to the same standard for QA and documentation (QAPP for BMP reporting is the standard).
Lisa Beatty (in chat): James - completely agree.
Ruth Cassilly: We can also identify areas that we feel protocols are needed for, but not necessarily be the workgroup that develops those protocols.
Cassie Davis: Part of the JamBoard seemed like there wasn't a good understanding of what QAPP and QA/QC documents were available. Part of track 1 would be reviewing them and making them readily available on the CAST website or something so everyone is aware and can access these protocols.
Lisa Beatty: PA requests longer than a week for feedback.

Action: Please provide any additional feedback on the Management Board (MB) Decision 3 Charge timeline and proposed path forward to WTWG leadership (rcassilly@chesapeakebay.net; cassandra.davis@dec.ny.gov; pickford.jacqueline@epa.gov) **by Thursday, February 16th.**

- ***Additional note:*** As per the charge from the MB, the WTWG will **not** be focusing on changing or reevaluating data sources or inputs to the model for this task, but rather, focusing on the QA/QC processes and protocols in place after we acquire such data. Please provide feedback accordingly.

11:55 AM – **Recap of Actions and Decisions** (5 min).

12:00 PM – **Adjourn**

Next Meeting: Thursday, March 2nd, 2023 from 10:00 AM – 12:00 PM.

Participant List

Jackie Pickford, CRC
Ruth Cassilly, UMD/CBPO
Cassie Davis, NYSDEC
Jenn Walls, DE

Sarah Lane, MD DNR
Emily Dekar, USC
Scott Heidel, PADEP
Bill Keeling, VA
Ariana Johns, VA
Jeff Sweeney, EPA
Jeremy Hanson, CRC/CBPO
Lisa Beatty, PA DEP
Clare Gooch, DE DNREC
Jen Walls, DE DNREC
Nicole Christ, MDE
Olivia Devereux, Devereux Consulting
Kevin McLean, VA DEQ
Samuel Canfield, WVDEP
Leon Tillman, USDA-NRCS
Tom Butler, EPA
Jessica Rigelman, J7 Consulting
Karl Blankenship, Bay Journal
Helen Golimowski, Devereux Consulting
Alicia Ritzenthaler, DOEE
Alana Hartman, WVDEP
Doug Austin, EPA
Chris Brosch, DDA
Holly Walker, DNREC
Katie Dyer
Julia Wakeling
James Martin, VA DCR
Lori Brown, DNREC
Gary Shenk, USGS/CBPO
Dave Montali, Tetra Tech WV/MWG

Acronym List

AgWG: Agriculture Workgroup
BMP: Best Management Practice
BMPVAHAT: BMP Verification Ad Hoc Action Team
CAST: Chesapeake Assessment Scenario Tool (user interface for the CBP Watershed Model)
CBP: Chesapeake Bay Program
CBPO: Chesapeake Bay Program Office (houses EPA and myriad contractors and grantees working towards CBP goals)
CBW: Chesapeake Bay Watershed
CRC: Chesapeake Research Consortium
CMAQ: Community Multiscale Air Quality Model
DNREC: [DE] Department of Natural Resources and Environmental Control
DoD: [United States] Department of Defense
DOEE: [DC] Department of Energy and Environment
EPA: [U.S.] Environmental Protection Agency
FWG: Forestry Workgroup
LUWG: Land Use Workgroup
MB: Management Board
NEIEN: National Environmental Information Exchange Network
NFWF: National Fish and Wildlife Foundation
NYSDEC: New York State Department of Environmental Conservation
PA DEP: Pennsylvania Department of Environmental Protection
PSC: Principals' Staff Committee
PSU: Pennsylvania State University
QA/QC: Quality Assurance / Quality Control
QAPP: Quality Assurance Project Plan
STAC: Scientific & Technical Advisory Committee
TMDL: Total Maximum Daily Load
UMCES: University of Maryland Center for Environmental Science
UMD: University of Maryland
USDA-ARS: U.S. Department of Agriculture - Agricultural Research Service
USDA-NASS: United States Department of Agriculture-National Agricultural Statistics Service
USDA-NRCS: U.S. Department of Agriculture - Natural Resource Conservation Service
USWG: Urban Stormwater Workgroup
VA DEQ: Virginia Department of Environmental Quality
VW: Volkswagen
WQGIT: Water Quality Goal Implementation Team
WTWG: Watershed Technical Workgroup
WV DEP: West Virginia Department of Environmental Protection
WWG: Wetlands Workgroup
WIP: Watershed Implementation Plan