

## Monitoring Meeting 2/5/25

### Minutes

#### Welcome & Announcements

Peter Tango (USGS)

*Description: Workgroups are compiling information that will help the Chesapeake Bay Program revise the 2014 Chesapeake Bay Watershed Agreement. The Management Board (MB) refers to this information as answering the “Big Question.” This meeting will focus on the Water Quality Standards Attainment and Monitoring (WQSAM) Outcome.*

- **Outcome Assessment:** *The Management Board has asked that each Outcome be assessed based on their “Big Question.” This question is in reviewing each outcome, provide advice “to consolidate, reduce, update, remove, replace or add new outcomes.”*
- **Two-Pager:** *When providing their answer to the “Big Question,” each outcome assessment team is asked to complete a two-pager template with the evidence compiled to support this decision.*
- **Timeline:** *The WQSAM Outcome Assessment will be due on February 13<sup>th</sup>. This assessment will then be presented to the Management Board on February 27<sup>th</sup>.*
- *This presentation will need to answer the “Big Question” while remaining concise and incorporating community feedback. **The Management Board is not asking for revised language at this time.***

**Announcements:** *Kaylyn Gootman: I’m working with some of our USGS colleagues. We are planning a webinar on the small agricultural watershed sites, with a focus on engaging with folks from university extension offices. We are working on putting together an invite with an email list we have, but if anyone knows of people who are from extension and should be included, let me know. More to come on that. It should be a really nice event on March 4<sup>th</sup>.*

*Peter Tango: Yesterday at the Modeling Ad-hoc, we heard Tom Fisher and company give an update that was very insightful on the nutrient limitation work that’s been going on and their preliminary results. They found what I hoped you’d see if you backed out the idea that 2023 was the lowest hypoxia we’ve seen in the history of our time series. Tom, Ann, and Judy’s work coincided with lower chlorophyll blooms, lower nutrients, and better Secchi depths. Their summary statistics were falling in line with what you would hope would happen if we saw the best oxygen*

conditions we've seen in the last 40 years. That was insightful in terms of a preliminary glimpse at what they had. Coupled with that was the other half of the meeting where Dr. Gurpal Toor from the University of Maryland was talking about small agricultural watershed work in Maryland and the about 10 sites that they're looking at. There is interesting characterization of the landscapes between open ditch work on the lower Eastern Shore, tile drainage region in the middle Eastern Shore, and overland flow dominated inputs to streams on the west Eastern Shore coastal plains. It was interesting to see the sub-characterization of coastal plain types, the landscapes are not just uniform. The data sets were also interesting, in terms of the example he went through. They had real time nitrate, which is somewhat new to the sensor world, in the last decade or so of reliable sensors. Also, I had never seen a real time sensor for phosphate (PO<sub>4</sub>) and dissolved organic carbon (DOC). The time series was beautiful in the example he pulled out where you saw a spike without seeing a massive rainstorm, when it came to PO<sub>4</sub>, DOC, and changes in nitrate. If you've been around our area long enough, you may surmise that it might have been near manure application time, and he went to show that was post-manure application time. The real time data sets were amazing to see and start asking questions about the areas that are saturated in Phosphorus vs not type of issues and consider the management options and opportunities. Hopefully that's part of what the ongoing story could be and if that isn't already part of your March 4<sup>th</sup> meeting, although it sounds like it could be if you're working with people like Alex and Jimmy. It would be very interesting to add to the equation.

- **Response:** *Kaylyn:* Cool. Let's definitely keep that in mind, Peter. I appreciate it.

*Peter:* Any other announcements? Introductions? Alright, thanks team for putting together today's work and our discussions on the monitoring side.

**Overview:** *Peter:* We are still forging ahead through the Beyond 2025 response, Phase 2, and what we need to do with the MB. The Principal's Staff Committee (PSC) had a meeting last week where they looked at the agreement in terms of its vision, principles, and themes. They did a little bit of tuning but not a lot of gross adjusting in the recommendations to update the language in that part of the agreement, in my perspective. There is still a lot of work being done on how that fits with goals and outcomes. We are continuing down the path of STAR having a lot to work with on the outcome assessment and the evaluation stepping forward. With that introduction, Breck's been leading our charge, coordinating our responses, and bringing that to the MB. I am going to pass this over to Breck. Thank you for all the

work you do. Thank you to Gabriel and Allison for coordinating the surveys, timing, and insights on the process. Great job team. Handing it over to you, Breck.

## WQSAM Two-Pager

Breck Sullivan (USGS)

*Description: The WQSAM Outcome Assessment team will present the draft two-pager and explain what led them to their decision. Participants will then share their feedback and comments on the two-pager.*

**Overview:** Breck went over the draft two-pager for the WQSAM outcome. The team's answer to the "big question" is to update the WQSAM outcome. Within the two-pager, outcome challenges, opportunities, timescale, resource needs, value added, and alignment with the Bay Agreement are provided to support the team's decision and steer future decisions. The STAR team is accepting feedback on the two-pager until Friday, February 7<sup>th</sup>. This feedback will be processed by the team and incorporated into the two-pager before being submitted to the MB on February 13<sup>th</sup>.

## Discussion on WQSAM Two-Pager

**Q:** *Durga Ghosh:* Do we have to restrict ourselves to two pages?

- **A:** *Breck:* Yes, it must be two pages.

**Comment:** *Amanda Shaver:* I wanted to discuss the wording in the first bullet under challenges. To give you a heads up, we're preparing documentation for the secretary for the Management Board meeting. I want to make sure we're aligning our thoughts and feelings on what we think this should look like with this two-pager. What I would like to see here is rather than focusing on the Bay Program's role say something along the lines of "current census-based assessment methods limit the ability to assess all applicable water quality standards." When thinking about the word "approved," we can just leave it at that and what we're currently doing isn't meeting the needs. I think with the way that it's worded now, we'd need to go into further elaboration on what those limits are. Describing the current state rather than saying "analysis capacity" may allow us to build on what we want the outcome to say. The staff here reading it were thinking to themselves "why would we say we're not doing something that we want to do." I think it's just counterintuitive to what our potential outcome would look like. So hopefully that helps. The other thing I wanted to mention was there is a word missing in "consider research needs." It should say "keep pace with inflationary measures." Under "what value," I

personally feel like the bottom three bullets were rising to the top more for me. I am thinking about the possibility that Management Board folks may only read the first couple bullets. To me, it seems like the first two are important but broader or more “fluffy,” whereas the bottom three are more pivotal and poignant.

- **Response:** *Kaylyn:* Thanks, Amanda. That’s super helpful. I also really appreciate your comment on the first item there. We’re hovering at that two-page limit so less there will help with that problem, especially if there is somewhere else that needs a little more elaboration or formatting change.

**Comment:** *Breck:* I did want to share. I got a message that I think is something that will be good to consider. It was about not just high priority to maintain and update the existing networks but also leveraging the existing networks – putting that language somewhere. They referenced the STAC workshop on using local monitoring results to inform the Chesapeake Bay Program’s watershed model. One of the recommendations was to compare load change expectations under the TMDL to trends in local monitoring with potential use in WIP and progress evaluations. I see the overall message in here is we need to make sure we maintain existing networks and make sure we are able to enhance them, but also, we need to make sure we’re leveraging and using the data we have in our existing networks. I think including that message within either the resources or with the opportunities section would be good.

- **Response:** *Peter:* I think a concise way we have approached that in the past is saying something like “leverage our data for calibration and verification of new and existing models.” Something that was pretty straightforward and important to validity and verification work.
- **Response:** *Kaylyn:* That’s a really valuable piece of feedback, Breck, and Peter. I think how you put it is important. I wonder for this document, if we need to keep it at a simpler level of “leveraging existing networks” because we are focusing on monitoring here. I think this idea is something we can do and utilize. Yes, to the models. Yes, to the assessments. I’m trying to figure out how to say the same thing but with less.
- **Response:** *Breck:* I think what is helpful at this point is just noting that it seems like a point we should include and maybe it’s just in the “identifying funding sources to sustain, establish, and leverage monitoring networks.”
- **Response:** *Kaylyn:* When we take another look at this later in the week, we could take a zoomed-out view of each section to see if bullet points should be re-

worded, like Amanda mentioned. I think that's a great point that the top line of each section has the best chance of being absorbed and understood.

- **Response: Peter:** On the leveraging side, I know I mentioned calibration and verification, but those networks and their networks have support launch proposals of all manner and kind with the findings there. There is research globally that uses our network information, etc. It's broader than what I said originally. I am good with simplifying, as you were saying Kaylyn. If we say, "leveraging networks," it reflects something more broadly than just the calibration and verification pieces.
- **Response: Kaylyn:** That's a good point, Peter. It's not just the world of the Bay, there are other impacts too.

**Comment: Breck:** One thing I will share to help with understanding the process is a big item we want to emphasize is the value. This is the value added by having the Bay Program work on this outcome and this is because we want to show "what is the value of bringing all of the partners together on this and working towards a specific outcome." The Management Board will also be coming forward with their own ideas of the value added from their jurisdictional perspective. We want to make sure we are complementing that. If we're not complementing that, it opens the question of "why does the Chesapeake Bay Program have it as an outcome?" Thanks again, Amanda, for suggesting moving this up, because we really want to highlight why it is value added to have the Bay Program working on it and having us doing it as a partnership.

**Comment: Peter:** I know we're not doing the word smithing, and this is part of the logic train we are working through. Thinking of the agreement for a moment and the value of that, I will mention that our outcome is redundant with one of the 14 principles mentioned earlier in the agreement, about maintaining a coordinated watershed monitoring effort, decision support, and tracking process. It's almost as if we took the verbiage right out of the principles and stuck it in an outcome. I think we speak to the nature of why our outcome as stated isn't necessarily an outcome. I also recognize that in the agreement there are other places that focus on and consider the importance of what we do at a high level. I add that as a matter of context. There is more to the agreement than the goals and outcomes and recognizing how those context pieces play together and support each other. No matter what we do in the adjustments going forward, there is this piece that the PSC has already looked at, did not adjust or delete and is carrying forward as a principle.

**Comment: Amanda:** We noticed that there is a monitoring and assessment component in the resiliency goal with climate change?

- **Response: Breck:** Correct.
- **Response: Amanda:** I don't know if we need to speak to that. None of us in the monitoring and assessment side of DEQ have been involved in any of those discussions or workgroups. I didn't know if you guys had thought about if we need to combine with that or address that in our outcome.
- **Response: Breck:** I will note that the resiliency monitoring and assessment is going first so their two-pager is available to read. The conversation has been around updating it. Instead of tracking climate change factors, such as temperature, sea level rise, etc., it would be more focused on connecting with other outcomes to make sure they are incorporating and considering climate change in the monitoring and assessment of their outcome. "Asking how is climate change going to affect their outcome? And how do you need to monitor and assess based on that?" It would be more of working with the other outcomes than a standalone tracking outcome. That is what their two-pager is currently suggesting.
- **Response: Peter:** Going back to when they developed their indicators in 2017, ERG worked with the Bay Program and that workgroup to come up with 7 viable monitoring factors. These were very environmentally focused with temperature, sea level rise, and precipitation patterns. More recently, they have reinterpreted that to what Breck has pointed to. More so, it is monitoring the effort to address resiliency than it is to deal with those environmental factors. You haven't missed anything in the last five to six years' worth of reinterpretation of outcome direction. Even though, it sounds very much like we should be doing monitoring assessment of climate change. I agree with you there, Amanda. So yes, we should consider it across all outcomes, in terms of considering and tracking climate influence. It doesn't seem like we need to plug that in as a separate item from our outcome work at this time.
- **Response: Breck:** It might be something to consider, if we have space in the two-pager. Maybe in the benefits to the public to make sure we're considering the impacts of climate in our monitoring and assessment or maybe in our timescale.
- **Response: Amanda:** For me, it could just be a recognition or acknowledgment of the similar outcome. Thinking about what information we're giving to the secretary, she's going to get all of the information and state resources going towards monitoring in that capacity, as well. I think we need to make it clear that

this is our foundation and that is extra, so the Management Board knows that we are not strictly monitoring because of climate change impacts. I want to make sure it's clear that it's separate. Especially considering where we are going with the administration.

- **Response:** *Kaylyn:* That was going to be my thought too. I think at the heart of it, water quality standards and the monitoring we're doing is the baseline or core piece of information that is used in all analysis and decisions are made based on. Without this, the whole thing falls apart. There's the added value to leveraging these amazing resources, datasets, and partnerships for a lot of purposes. This is at the heart of so much of what we do. It would be smart to find an artful way to make that clear and call that out without leaning too far one way.
- **Response:** *Peter:* We're tending into a piece that maybe isn't strongly represented on cross-outcome linkages. What you just mentioned Amanda also speaks to, not only the climate change, but the fisheries folks and fish habitat assessments are not achieved without this work we're doing. The work has always been dependent on meeting living resource habitat conditions. I don't know if we have connected ourselves yet, in any of this language, to the cross-outcome value. Maybe that's part of the leveraging, making the connection with climate resiliency and fish habitat. I don't know if there is room to mention that cross-outcome value. I haven't seen us mention that yet in terms of value added to the partnership.
- **Response:** *Kaylyn:* That's a good point, Peter. I'm glad you brought that up, Amanda. That's really helpful. Another challenge is to step outside of the piece of the program we're working on and looking around to make those connections. It's important to call out those cross-outcome connections and maybe that is a top line bullet for whatever section it lands it.
- **Response:** *Amanda:* Their outcome talks about trends, so I think there is obviously some overlap here.

**Comment:** *Durga:* I am a part of the monitoring team, but I don't review these documents as much, my fault. When I am reading the challenges section, I am not getting a clear message. I don't have a solution, but I am reading it and am thinking "we're trying to pitch that these are the challenges, so there needs to be a theme that we can pick from the other subsections to include in the challenges." To me, not having funding is a challenge and we bring that up because that's key to the discussion. We're talking about non-point source not giving us adequate results because we need to ramp up those efforts. That, to me, is a challenge. When I read through the rest of the

document, I see that some of those points are actually what we need to address as a challenge. I am wondering if there can be a theme. Breck, Peter, and Kaylyn, this is just something I want you to think about. I don't have the answers. Is there some way for us to create a theme in the challenges section that highlights what our needs are and why we can't overcome some of these difficulties. We can't really say there is no funding but at the same time say that we can't monitor all the segments either. To me, that doesn't mean the same thing. It just doesn't make sense to me. I wanted to put that out there because I know you all think about this much more and maybe you'll have some thoughts on this.

- **Response: Peter:** We need everyone's perspective, eyes, and feelings as we go through this. We want flow, consistency, and to tighten up the story. That is super helpful to go back to, Durga. Thank you.
- **Response: Kaylyn:** Durga, that's super helpful. I really appreciate your thoughts and perspective. It's helpful to step out of the track we've been on. Almost in a way I see it as a recognition as a challenge of ecosystem restoration. You can't monitor everywhere. We can't afford it. It's not feasible. It's not affordable. It's not possible. That's why we monitor in the way we do with these particular networks. If you think about the way NTN, tidal, SAV, and tidal benthic is set up. The unique challenges and pieces of those systems inform how we monitor based on funding. I wonder if we could say something to the effect of "this is not a new challenge, it's always been a challenge." Maybe we could provide more support to saying "we need this and need to keep it up." Maybe we could find a way to say that that resonates with state secretaries.
- **Response: Durga:** Right, because in an ideal world, we would want money to do every single monitoring we can think of. That's what we set out to do, but we can't. It's not an ideal world. We're not going to get the money to do this. Can we use this to our advantage by saying, "if we had this pot of money, we could invest it in this, so we could get to this." This has to be very concrete. We can't say that we can't do this because we were not able to go to 20% of the segments. It's too elusive. It's not concrete. We're setting ourselves up for getting questions of "why did you not accomplish this?" To me, it seems that if we want to be direct and focused than we want to say, "we lack this because we don't have this information." We need to be very direct about it. Maybe it's not meant for the two-pager, but I still feel like we need to think around those lines to be able to input that information. We can have this discussion further. I don't want to hijack it. I just wanted to put that out there, so that you all can include this in your thought process.



- **Response:** *Kaylyn:* That's really helpful. Maybe there is a spot for this. Maybe not as a challenge but the fact of this is why we monitor the way we do. There's a lot of good stuff to think about there.
- **Response:** *Peter:* We're always trying to maximize the return on investment to limit uncertainty in our understanding of Bay condition and trends and provide the best possible answer on how we're making progress. Other ecosystems out there have fewer sites but still manage to put together informative monitoring. We're doing the best we can with what we have is always our approach.
- **Response:** *Durga:* I do think we have a lot of success stories, and I think we should highlight those as well. I know we can't include too much because of the two-page limit, but we can include links. We can use our publications to our advantage and say, "given this limited funding, we still developed a very nice monitoring program to address 'question a' and this is how we got there." We can do this and if given the resources, we can do much more.

**Q:** *Kaylyn:* That lends itself to my question for the group. That's a nice connection, Durga. If folks noticed, there's a couple of links, references, and callouts. I don't expect Management Board members to click on them, but I do think the strategic inclusion of hyperlinked text calls out some of those connections. I know we reference the PSC Monitoring Report and the CESR report. I wanted to ask if there are any other partnership documentation or hallmark historic items to note in that way. These would be space saving, but also the hyperlink text showcases "oh man, we're supposed to be doing this. This connects here. We've done this." That additional supporting evidence that can be imbedded. Does that make sense?

- **Response:** *Peter:* We speak to the pace of progress and certainly there are a number of publications. There is a full history we have been trying to report on. From Elgin's work, on developing status and trends approaches, on to the cart analyses we have been working on with Qian these days. Some of those must be cherry pick worthy. Let's look at that and see what we can use that might be insightful. This way folks can know we're speaking from the authority of the publications that are using the network information to inform our status and progress assessments.
- **Response:** *Kaylyn:* Maybe it's the one you mentioned, Peter, the local monitoring report. In this type of document, only being 2 pages, less is more. I think there might be room for one or two more hyperlink items without taking up real estate on the page. Maybe that's one. Maybe there is one other that folks think might be a bang for their buck, in terms of letter count. It is something that strikes the eye when you read it. It highlights a connection. I think that makes it easier for the reader. I know when we write up more on this, we have an extensive reference library, especially

author or co-authored by so many on this call. We could be strategic with one or two more callouts in that way.

- **Response:** *Breck:* I like the idea of the callouts and links. We have to walk this fine line of, yes, we need to show we've done a great job, and we've had a lot of successes with this, while also emphasizing that we need change and your support in change. I feel like the links could be a quick way to highlight success, in the sense of 'look at all we've done.' It won't require too much added text. While our actual text describes the challenges we're facing and why we need change.
- **Response:** *Kaylyn:* The CESR report is a good resource. The Management Board might see that link and know "hey, here's are suggested changes, shortfalls, and gaps." I just think that would be leveraging the Management Board's collective knowledge of the Program and where we're at. That's good too.

**Comment:** *Breck:* I know in this discussion we weren't specifically asking for wordsmithing. If there is any major text that you would like to be considered changed, you can email me or track changes and send the new document. Thank you, Amanda, for your proposed text. I've included that in my notes. You have until Friday close of business to send us anything. We will be compiling all of the information so we can do another edit before sending it to the Management Board, which will be on the 13<sup>th</sup>.

**Comment:** *Peter:* I really appreciate everybody's insights, thoughts, and perspectives to help tune up what we have going forward. I like the simple top line message but when getting into the details and telling the story, it's helpful to have everyone's insights. So, thank you very much.

**10:00AM      Adjorn**

**Attendance:**

Allison Welch (CRC), Peter Tango (USGS), Amanda Shaver (VA DEQ), Elgin Perry, Gabriel Duran (CRC), Emily Young (ICPRB), Kaylyn Gootman (EPA), Breck Sullivan (USGS), Durga Ghosh (USGS), Rebecca Murphy (UMCES), Qian Zhang (UMCES), Tish Robertson (VA DEQ).