Chesapeake Bay Program
Science. Restoration. Partnership.

Outcome Assessment Round Three Preparation

Thursday, March 6th, 2025

9:00 AM – 11:30 AM

Meeting Materials: Link

This meeting was recorded for internal use only to assure the accuracy of the meeting notes.

MINUTES

9:00 – 9:05 PM Welcome, Introductions & Announcements

Meeting Background:

The Executive Council's (EC) Charge for Phase 2 activities directs the Principal Staff Committee (PSC) to complete "[r]evisions to the 2014 Chesapeake Bay Watershed Agreement (Agreement) with modifications to the existing vision, principles, preamble, goals, and outcomes…", and to do so by December 1, 2025. To address this charge, the Chesapeake Bay Program (CBP) modified its Strategy Review System (SRS) process for Workgroups (WGs) and Goal Implementation Teams (GITs) to answer an overarching question ("Big Question") as means to provide advice to the Management Board (MB) on the next step to take with each Agreement Outcome. There are three MB meetings to discuss the Big Question, and the schedule for each outcome is available here. During the MB meeting, each out outcome will have three minutes to provide an elevator pitch in response to the Big Question. This will follow seven minutes for a Round Robin from the signatories and 10 minutes for Advisory Committee and MB members comments and facilitated discussion.

Meeting Objectives:

- Opportunity for Outcome leads to educate participants on their outcome assessment
- Opportunity for participants to familiarize themselves with major points prior to Outcome Assessment Meeting
- Discuss connections between outcomes
- This meeting is not mandatory and no decisions will be made during it

9:05 AM – 11:30 AM Outcome Assessment:

Meeting Background:

Each outcome will provide their three-minute elevator pitch presentation, and there will be twelve minutes between outcomes to provide feedback. If discussion is completed before the twelve minutes is over, we will move on to the next outcome.

Order (Jump to Bookmark):

Toxic Contaminants Research Outcome: *Continually increase our understanding of the impacts and mitigation options for toxic contaminants. Develop a research agenda and further characterize the occurrence, concentrations, sources and effects of mercury, PCBs and other contaminants of emerging and widespread concern. In addition, identify which best management practices might provide multiple benefits of reducing nutrient and sediment pollution as well as toxic contaminants in waterways.*

Jeremy Hanson (Chesapeake Research Consortium, CRC): Greg Allen created the presentation and two-pager, but he has taken the deferred retirement and is no longer on the team. Jeremy has put together a "Cliff Notes" presentation which will be improved upon and presented by Jeremy or someone else for the MB meeting. The longer-term coordination and leadership of the workgroup is still being resolved.

Our recommendation for the Toxic Contaminants Research Outcome is UPDATE. This outcome has worked well for the partnership and workgroup. The outcome enables the workgroup and partners to focus on pollutants of concern, especially mercury and polychlorinated biphenyls (PCBs). In recent years, the workgroup has also given space for issues like per- and poly-fluoroalkyl substances (PFAS), which has really come bursting onto the scene. The PFAS quarterlies are well curated thanks to partners, like Emily Majcher and USGS, and well attended by 75 people or more. It is a vital venue for sharing and highlighting emerging research. The workgroup as a whole is pretty effective towards this outcome as a place to share information and the latest science or developments on these contaminants of emerging concern. These are the reasons to keep the outcome and update. Some points of update are PFAS and microplastics have been suggested for more explicit inclusion into the outcome. Greg also recommended removing the last sentence because

the efforts to take a more quantitative approach and including the benefits associated with these contaminants in Chesapeake Assessment Scenario Tool (CAST) have not worked out given the current resources and capacity. If there's an interest in rephrasing or reorienting that approach into different approaches, like focusing on multiple benefits, the multiple outcomes are ecosystem services more broadly, maybe as part of a new outcome. With a different approach that would be worth keeping, but otherwise removing the last sentence seems like the logical thing to do.

Comment from chat: *Kristin Saunders:* Amy and I are holding Greg Allen's feet to the fire to commit to a visit in Annapolis so we can provide a proper sendoff. Stay tuned

Comment: *Chris Guy:* I appreciate the update and think you all are thinking about it in the right way. For me, the problem with toxics is it's so broad when you said, "and other emerging and widespread contaminants." There are millions of man-made chemicals that travel our roadways every day. I think this outcome has suffered from being too broad. I think it would be best to make this outcome specific, possibly to PCBs, PFAS, and nutrients and sediments. I know with Brook Trout we're talking about 6PPDq and that's incredibly important. Then microplastics is another one. How far do you go? There could be a benefit to picking the top few for right now. In the management strategy, you could talk about how others could be worked in if new and emerging contaminants appear. I think the broadness of this has hampered our ability to make progress towards the outcome here and in getting funding and support. I am extremely frustrated with how little resources and priority the toxics contaminants groups have gotten over the last 40 years. When I was a contaminants biologist, every year I would put a proposal in and every year I'd get rejected.

- ***Response:*** *Ken Hyer:* I totally understand your point and agree with you. One thing I talked to Emily Major about was trying to strengthen the connection between Toxics Contaminants Workgroups and other outcomes to focus that work. For example, the Brook Trout group could work with Toxics to focus on 6PPDq. A collaboration of other workgroups would refine what's being studied, so as you said it's not just this broad work of contaminants. I know with Emily stepping down eight months ago and Greg retiring there is a gap in leadership, but that was one thing Emily wanted to strengthen. I think that's in line with everything we saw in Beyond 2025 Phase 1 and the Eastern Research Group (ERG) report.
- ***Response:*** *Chris Guy:* I brought up the 6PPDq because I do like that idea, but if something else comes up, do we start chasing that? That's more the issue. It was the specific one used for the example, because before Brook Trout that wasn't on their radar. Brook Trout workgroup is spending quite a bit of time on that, and we keep punting down the road for the same reasons that when I was in contaminants, we were punting down the road. Some of it is being forced upon because of the actions in the federal workforce. Even outside of that, we were having meeting after meeting and chasing funding but not having much success. It's to the point that my Brook Trout workgroup is going "how much more time are we going to spend chasing money we are not going to get?"

- ***Comment from chat:*** *Gina Hunt:* Shared outputs
- ***Comment from chat:*** *Joseph Wood:* Agree that increased focus would be helpful here, and particularly to clarify how the partnership is supportive rather than duplicative of state programs
- ***Response:*** *Kaylyn Gootman:* My thought ties into the funding piece, but also, where do the partners prioritize? The world of toxics is hard because it's always changing and we're always chasing the unknown. 6PPDq, connections with fish, all of that work coming out of everywhere and the Pacific Northwest. How do we be strategic about calling out what we know today, but also being prepared for the future?
- ***Response:*** *Chris Guy:* I think the strategy can do it, but I don't think the outcome should. I think you could build it into the workgroup and what they are doing. We do have a mechanism for adjusting the outcome if something should arise all of the sudden.

Comment from chat: *Julie Lawson:* Toxics are a very people-oriented issue, PFAS = drinking water, mercury = fish consumption, microplastics = all the panic.

- ***Comment from chat:*** *Rachel Felver:* Just adding on to Julie's comment, and I apologize for joining late if this was mentioned, toxics very much resonates with the public. Research shows that people are very much concerned with toxics in the water, because it is something that they can understand and see (e.g., plastic pollution).

Comment from chat: *Joseph Morina:* I wonder if you need to specifically list all of the contaminants in the actual outcome itself. Instead, could you say something like "contaminants in our list of targeted compounds" and then have a list of the toxics, and rules to get toxics on/off.

Comment from chat: *Claire Buchanan:* Don't "mitigation options" in the first sentence include "best management practices...multiple benefits of reducing nutrient & sediment pollution as well as toxic contaminants..." in the last sentence? Maybe do away with the last sentence in Outcome and put it in strategy.

Comment: *Kristin Saunders:* To channel Greg Allen for a minute, I think what Greg has tried to do with his team was to keep eyes on toxics, because there has been such a heavy interest in the nutrient and sediments pieces that these other problematic things tend to not get the attention. I agree with Chris that toxics had to make the decision several years ago on leaning into something that had a direct nexus with people and living resources, to touch on something Julie put in the chat. Where does it connect with people? I think PCB was their starting point. That said, we've heard from several of our partners that the issues around PFAS, plastics, and their nexus to people and living resources sort of force them to be much more important an on the radar in addition to some of the other things we are focused on, like PCB. I just want to underscore the reason why Greg put a reference here to plastics and PFAS, because that is coming directly from partners, like the Commission, some ag partners, and the district, which has been leading with EPA on microplastics to fill in science gaps. Perhaps we can be more specific with the way the outcome is written to

include some of these other contaminants and focus the work on those specific areas because we know there is a particular interest in several of our partners and jurisdictions. I say all of that while also recognizing that there's no easily identifiable leadership to take this on right now.

At the same time, we're putting this forward, I want us to be cognizant of who is going to speak for toxics. Who is going to speak for toxics and make sure it's not in competition with nutrients and sediments, but looking for the nexus? Unfortunately, we can't do the best management practices direct connection, but there are total maximum daily loads (TMDLs) that exist for different contaminants and maybe there's a way to overlay and connect some of that work with what you talked about, which is finding a stronger connection to some of the specific outcomes.

- ***Q:*** *Breck Sullivan:* Thanks, Kristin. I am also curious in terms of leadership, connection with other groups, and narrowing in on the specifics. Is this a chance that we could pull the plastics pollution action team into more of the workgroups of the Bay Program?
- ***A:*** *Kristin Saunders:* I don't know if that question was directed at me, Breck, but having been involved in the Plastics Pollution Action Team (PPAT), I can say that in their most recent meeting they were interested in being incorporated into whatever changes or revisions might happen to the agreement and be more imbedded in this work. I think this makes sense as to where they would rest. I don't know if anyone from the team is on the call but that has been in their sights for quite some time to answer your question.
- ***Comment from chat:*** *Julie Lawson:* PPAT currently doesn't have a chair.
- ***Response:*** *Jeremy Hanson:* They don't have a chair, but they have a Vice Chair. They have someone and they reached out because they were considering adding a microplastics or plastics outcome. I think the sense was rolling that into these outcomes instead of suggesting a new outcome. That is my understanding.
- ***Response:*** *Julie Lawson:* Kelly Somers, Region 3 is vice chair.
- ***Comment from chat:*** *Kristin Saunders:* Kelly Sommers is the co-chair of plastic pollution action team (from EPA region 3)
- ***Comment from chat:*** *Julie Lawson:* I'm a lapsed member of PPAT. Haven't been able to attend meetings for a while. Many of their proposed management strategies are upstream/behavior change, lending itself to a connection with Stewardship, though there is also an ecological assessment showing impacts on fisheries

Comment from chat: *Peter Tango:* Respectfully again - this outcome is stated as a collection of activities. The outcome is societally relevant relative to their indicator - fish consumption advisories. I would suggest then that fish consumption advisories and reducing fish contamination levels in fish tissue are, for me, more relevant OUTCOMES of all these activities. That is the sort of update I would expect and provide these activities in the logic and action plans.

Comment from chat: *Scott Heidel:* I can only be on until 10:00 but wanted to lend support for toxics because I fear that if we focus only on nutrients and sediment but don't see a positive biological response as those pollutants are reduced, then things like toxics from our large cities like DC and Baltimore may be overlooked while continuing to expect large reductions from PA for N, P and Sed when they are only part of the impairment.

Q: *Ruth Cassilly:* I want to make sure I understand the rationale for removing the last sentence. In my mind, it focuses on finding the overlap between Toxic Contaminants and other workgroups. If you're identifying practices that have multiple benefits, in a way you are finding the juncture between, say, the Ag Workgroup and the Toxics Workgroup, because the same practices benefit nutrient and sediment reduction and toxics reduction. So, if I am understanding correctly, that is suggested to be taken out because the resources haven't existed in the past to actually work on that? Is that why we're suggesting removing it?

- ***A:*** *Jeremy Hanson:* I think there are a couple points of reason. Someone in the chat hit on one of the reasons, which is it may be duplicative. It seems that the approach of getting these into the CAST scenarios has not been fruitful. We don't really have the resources or research to do that. There's been some effort, but I think we just need to take a more qualitative approach.
- ***Response:*** *Ken Hyer:* Building on that, Jeremy, that's where, in my mind, it was by either removing or editing that sentence is showing that it's broadening the connections between Toxic Contaminants Workgroup and other outcomes, not just BMPs full stop. Maybe instead of removing that sentence, we can edit it to better reflect connecting Toxics to all the other outcomes.
- ***Response:*** *Ruth Cassilly:* One of the things the Toxics Workgroup did really well over the last year was responding to concern in the Ag community about PFAS. They pulled together to talk a lot about PFAS and presented the latest research at the quarterly meetings. They also pulled together a dashboard for Ag resources and what research is already being done. Penn State is already working on potential ways to remediate PFAS in agriculture. I wanted to make the point that I don't find the group just a place to exchange information. I am concerned about the action component. What does this lead us to do action wise? I know we have no resources right now, but I fear taking it out altogether will remove that action component. We know these things are bad for the environment so in which capacity are we working to affect what's happening out there in industry and agriculture and for our sources of contamination? I don't want to see that go away altogether and have us just focus on informational exchange. I would advocate for modifying it and not removing it.

Comment: *Keith Bollt:* I have a few thoughts on anticipating questions that the MB may have. The MB might ask if this could be an output under the other outcome. Kind of to Peter's point, someone describing products, like change in condition. Prepare to have answers to that, maybe. Toxics is about half a dozen products of the Bay Program that are called out in Section 117 of the Clean Water Act. Obviously, I wasn't here in 2014 but I

would guess that's one of the reasons why this may be in the current agreement. There might be a legal reason why we have to have Toxics in the Bay Program. Mentioning Section 117 of Clean Water may be a talking point. Lastly, I was in Superfund before I came to the Bay Program, so I know there are literally billions of dollars spent on toxic contaminant implementation in the watershed. Having a very specific reason why this is important to our partners but for the work to be specific to the Bay Program. I think it will be important to drive home to the MB. There are going to be some additional board members who see this as an opportunity to trim, so having answers to those three would be good for this outcome and the other toxics outcome.

- ***Comment from chat:*** *Keith Bollt:* Section 117 g(1)c of the Clean Water Act: The Administrator, in coordination with other members of the Chesapeake Executive Council, shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain—the Chesapeake Bay Basin wide Toxins Reduction and Prevention Strategy goal of reducing or eliminating the input of chemical contaminants from all controllable sources to levels that result in no toxic or bio accumulative impact on the living resources of the Chesapeake Bay ecosystem or on human health;

Comment: *Gina Hunt:* Following up on a couple of these other thoughts. Firstly Keith's, what the MB might say is the obvious elephant in the room that this outcome is not specific, measurable, achievable, realistic, and time-bound (SMART). There are other outcomes that are not. I believe what most folks were trying to do was put the measure or what was going to be done in the outputs. As most of you know, we had a meeting yesterday about the differences, the office hours between outcomes and outputs, and that was not clearly defined. There's not a clear understanding of if we should have outputs or if the measures should be in outcome language, they could be in both. Making something SMART that is similar to this is really difficult to do. The other thing that was said yesterday was that outcomes are not actions. Outcomes are more the end point. It would actually argue against putting that in the action and the action would be in your management strategy. I kind of like the idea of giving it some direction but be cautious of how this ends up being. When we finally decide how outcomes are supposed to look, it could change what this looks like. When Chris started talking about these related outcomes, this is where I have been trying to suggest shared outputs. Brook Trout could have some Toxics output, like specific toxic. Those are easier to change than an outcome. If a new emerging contaminant came, you could add it as an output and could relate it to another outcome and share the output. That's how you get that collaboration. The specificity in the toxics might come to play with the outputs. Again, if we're having outputs and if they're doing what we think they will do. That still hasn't been defined. I love keeping this one. I think that because it doesn't have specified language and it's not SMART, you could face that when talking with the MB.

- ***Response in chat:*** *Anthony Timpano:* +1 on concern over being un-SMART
- ***Comment from chat:*** *Peter Tango:* To Gina's concerns, consider the following - The present statements reflect actions, activities. The outputs have been fish tissue

concentrations from monitoring, the coincident deliverable output is a map of fish consumption advisories. The outcome of activities is to reduce fish tissue concentrations and reduce advisories = changes in the ecosystem per management efforts. That all lines up with the logic framework of activities-outputs-leading to outcomes. My comments align with the Toxic Contaminants (TC) Research outcome.

Comment from chat: *Bruce Vogt:* There may be way to link the toxic contaminants to the tidal fish habitat living resource assessment which will score each of the 92 segments relative to fish habitat quality. Note this assessment is not funded but is a key output for the tidal fish habitat outcome.

Toxic Contaminants Policy and Prevention Outcome: *Continually improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans. Build on existing programs to reduce the amount and effects of PCBs in the Bay and watershed. Use research findings to evaluate the implementation of additional policies, programs and practices for other contaminants that need to be further reduced or eliminated.*

Jeremy Hanson (CRC): **Our recommendation for the Toxic Contaminants Policy and Prevention Outcome is UPDATE.** This is where we see some reference to section 117 because it does refer more specifically to the comprehensive strategy to eliminate or prevent toxics. I don't remember the exact phrasing, but we do have that reference. PPAT has suggested including microplastics in this outcome, as well. As I mentioned, I think both the Bay Commission and Pennsylvania have suggested this include PFAS and microplastics, or one or the other. So, there is interest in PFAS here again. Some notes I have from Greg is that when we wrote this outcome initially the idea was taking a comprehensive strategy approach. Maybe it wouldn't be as robust as nutrients, but it would still be a fairly comprehensive strategy in terms of getting us to water quality standards. PCBs was that first one where we were looking across the partnership. We never got that far with PCBs. There's never been a full person here at the Bay Program to work on this across the partnership. Although, we've been fortunate enough that we had Greg spend some time and the effort and support from other partners. If there's interest in adding in new things explicitly to the outcome, that's possible but maybe we have to reframe our process. We could back away from a comprehensive strategy and just fragment in terms of some basic progress instead, especially if we are going to broaden this to those other contaminants. That's as far as I got.

Q: *Chris Guy:* Why not consolidate these two? Without the federal chairs, you go, why do these even exist? I think it's really important for us to keep them there and recognize that this is one of the things we're losing in this consolidation exercise of the federal government. I don't see these leads and these workgroups coming directly from the states. They don't have the equivalent. We need the federal partners. USGS has, or had, a strong toxic program and EPA obviously it is part of their core mission. They need to be upfront about the fact that we don't have those people. My concern is that it is going to bring on

the criticism of if you don't have the resources, you shouldn't be doing it. Another side of the argument is that we need the resources so we can't do it until we get them. I think this is an important message that we can do it here. Then I bring back to being prepared which falls back into Keith's comments. Why can't this be the outcome, re-word it and SMARTify it, and then make the contaminants toxic an output under it.

Comment: *Peter Tango:* This to me is a set of actions and the outcomes are specific. We want to reduce the impact of pollutants, and we need a measurable accounting of that. In the previous one, we've seen the indicator as fish consumption advisories. It's societally relevant and we've been asked to bring the human element in, which we barely speak to, but it's been in almost every agreement. To call it out specifically, fish consumption advisories reduced in place, time, and abundance seems like a clear connection to what the activities are supposed to impart. The outputs being our definition and explanation of the data that we have. I see a clear application of the logic in action plan that we've been presented with in recent time. We're seeing in this particular one a bunch of activities. We're expected to produce a deliverable that synthesizes that information, but we're looking for the outcome. We're looking for reduced contamination in fish tissue, reduced contamination in sediments, and a result of better integrity of our habitat. I'm trying to couch it, apply what we've been asked to given the logic framework structure, and use that as guidance for how we evaluate this. I feel like that's kind of what ERG was going to help guide us with. It's just following up in terms of what we've heard in the last couple of months. Bill Jenkins and company presented that as a way for each of us to be consistent, think about streamlining, and represent each of the outcomes in a similar way.

Comment: *Ken Hyer:* I'll offer some thoughts that are maybe not as well organized as Peter's. From my perspective and even knowing operationally how the work group has run, I think the idea was by having a separate policy and prevention toxics outcome, this focuses on restoration, trying to get sites delisted, and remediating toxic contaminant listed sites. The research outcome was meant as named to be a broader emphasis on improving our knowledge, building out science, and being able to apply it. That's why the PFAS work is largely under the toxic contaminants research outcome. That's why they're separated. Could they be connected? I know they tried to build out alternating agenda items. I worry about mixing the research in the policy because I know we have a big role in the research. I'm not excited to combine them, but if the MB said do it, we could explore. I'm actually more worried that the MB is going to say this outcome is a state responsibility to implement state listed impaired waters and what is the value added? I think it's easy to articulate the value added under research, increasing knowledge, pushing science out, and coordinated efforts to respond to new and emerging contaminants. I think we may hear a challenge here that the states are doing this. This is 303D listing and remediation work. What's the value added? Rather than saying to combine them, they may say, do we need this?

- ***Response:*** *Chris Guy:* I also will argue that policy probably needs to come out of it in today's climate.

- ***Response:*** *Kaylyn Gootman:* It's helpful to hear more of the context of the past too but also thinking about putting ourselves in the shoes of the MB. There is that piece about there's 303D lists, jurisdiction responsibilities, and tie ins too, but I understand it's still EPAs priorities. It's a tough pill to swallow but I wonder if this strategic combination in following the logic in action plan would ensure this sticks around. It doesn't satisfy everyone everywhere, but we don't really have control over the research piece, right? Funding for that is challenging to get. This partnership's top spheres of influence are probably how we influence policy and thus prevention. How to do that? I don't know, but I know I could see the updating combined with the previous as being fruitful.

Comment from chat: *Peter Tango:* Again - policy and controls are actions. The outcome is the measurement of change in the system coincident with management actions to impart reductions. We have baselines, we are looking for change from baselines. The outcome is better habitat quality, reduced contaminant levels, and fewer advisories.

Comment from chat: *Keith Bollt:* Recommend borrowing language from the statutory language, which uses the word "shall", not "may", or saying something like toxics are "expressly required to be part of the Bay Program under Section 117 of the Clean Water Act"

Q: *Breck Sullivan:* I'm curious about the Water Quality Standards Attainment and Monitoring (WQSAM) Outcome. Do you think anyone would say this one, or maybe more the research one could be an output of that outcome?

- ***A:*** *Chris Guy:* I might think the other way around. Maybe the WQSAM should be an output under this outcome.
- ***Response:*** *Breck Sullivan:* We've had discussions that other outcomes can be outputs under other outcomes and still exist separately, which I would hope for.
- ***Comment:*** *Jeremy Hanson:* You bring up a good point. I am curious to learn more about shared outcomes. As someone pointed out in the chat, these are really the only outcomes where we get close to the human health components. I hope that will help them stay somewhere in the agreement, because it is crucial to keeping that link to people front and center. People eat fish and want to eat fish.
- ***Response:*** *Ken Hyer:* I'm sure it's for those reasons of human health and the visibility of toxic contaminants that it was set up as two separate outcomes. I wonder if we want to go with the option that gives them the most visibility, whether that's to combine, update, or something else. Chris, you spoke to me saying they don't feel like we're doing as much as we'd like to. How could we change that, so we increase the partners coming to the table, increase the science being done, and ultimately, increase the implementation to have a healthier ecosystem? It seems like it's a gap that we can think about how to attack this a little better.
- ***Comment from chat:*** *Peter Tango:* Breck – If the Water Quality Goal going forward is viewed as scoping more generally than nutrients and sediments, then we could see a series of indicators such as fish consumption advisories, such as water quality (WQ)

Standards, such as salt/acid/toxics/plastics status and trends in freshwaters, then we could see compositing here to represent habitat integrity across life cycle habitat needs in space and time to represent the full Aqua corridor integrity as helping define the outcome of the Water Quality goal. It would be a significant consolidation into an indexing presentation rather than outcome level presentation of the work for a streamlining of the Agreement structure.

Comment: *Doug Austin:* I'd like to add on to Ken's earlier comment about what is value added. I've seen this ebb and flow between the states can do it so what are we adding? I think an argument for keeping this particular outcome is the value added particularly for PCBs. These jurisdictions have a lot of TMDLs in place and they're acting on them. There are regulatory actions. They're incorporating PCB reduction strategies into their MS-4 permits and things like that. It's an ongoing active thing on the parts of the jurisdictions. One area where I think that keeping this outcome and keeping the watershed perception on this is that I think the jurisdictions could learn a lot from each other and how they go about meeting their requirements. Particularly, I am talking about source tracking. It's a very complicated thing to go upstream and try to find the sources of these PCBs. There are lots of different strategies in terms of mapping and looking at where certain industries have been historically. We're talking about literally grams of PCBs. If you got one or two grams of reduction, that's a big win. I do think, for source tracking, the jurisdictions are going have to be acting shortly, including Virginia. They're going to be adding 160 miles of the Upper James very soon, for the TMDL. I do think there's potential value added from that for keeping this outcome.

- ***Comment from chat:*** *Scott Heidel:* At PA DEP it is more part of their jobs and they are exceptionally busy to the point of not having time to chair this.

Comment from chat: *Keith Bollt:* Has this workgroup ever collaborated with the EPA Superfund program, EPA Resource Conservation and Recovery Act (RCRA) program, and state equivalent programs? That's where the policy implementation decisions are made and where the billions in implementation money are.

Workforce Outcome

Julie Lawson (Stakeholders Advisory Committee, SAC): My name is Julie Lawson. My day job is with the DC Department of Energy and Environment, but my role in the Bay Program is as an appointee to the Stakeholders Advisory Committee and that is the hat I am wearing in this conversation. As you can imagine, the Diversity Workgroup was halted in January and some non-federal members of the steering committee have been looking at what the Diversity Outcome will look like in this outcome assessment. **Our recommendation is to replace the Diversity Outcome with a Workforce Outcome.** This comes from a few different sources. First, the Stakeholders Advisory Committee and Local Government Advisory Committee have regularly had workforce recommendations in their annual reports to the Executive Council. They have been specifically asking for more technical assistance in

creating green jobs and quantifying the economic benefits of Best Management Practice (BMP) installations. Relatedly, the Comprehensive Evaluation of System Response (CESR) report calls out an implementation gap that we're not putting enough BMPs in the ground. We regularly hear from jurisdictions that they can't get all the BMPs in the ground and they can't maintain them because of a lack of workforce and technical experience. DC has a green workforce development strategic plan already in place. Pennsylvania has been taking steps toward that through the recent clean water gathering, and similar recommendations have come from the Bay Commission in their boots on the ground report. Finally, last year under the Education Workgroup, the Workforce Action Team was stood up and produced a GIT funded project to do a landscape assessment of training opportunities and training outcomes across the watershed. Their recommendations in that document ask for a feedback loop of employers and training providers to align hiring needs and training offerings and demonstrating to job seekers what skills are in demand. This would be the first economic output proposed for the Program, but I believe that it will meet a lot of our implementation needs. It also helps support local communities and local economies in making sure that our residents have work and that we have the skilled expertise to fulfill all of our restoration and conservation goals. I hope you have had a chance to take a look at the two-pager, which goes into some more detail. I think this outcome can be easily made SMART because it is so data driven. We've already talked to 8 of the 9 signatories and have gotten the thumbs up, so we are feeling good about where we are going with this one.

Comment in chat: *Kristin Saunders:* great innovation in action

Comment: *Kaylyn Gootman:* I think this is very smart. This is awesome. This is a nice way to be strategic and pivot. Like Kristin said in the chat, great innovation in action. I think this is something that could be around for the long haul. I am really excited to see this. Great work to your team.

Comment in chat: *Jeremy Hanson:* Amazing and innovative pivot with this outcome.

Comment in chat: *Peter Tango:* I'm a fan Julie. Nice one here!

Comment: *Kathy Boomer:* I will second that. I am very excited for continued support and commitment to this outcome. I worry that the Workforce Outcome, in a reframing, misses the importance of elevating local knowledge and recognizing the value of bringing those perspectives to thinking about how to frame the problem, how to think about solutions, and how to implement adaptive management effectively. That would be my suggestion. If we could thread elevating local knowledge in a way to bring perspectives to the table.

- ***Response:*** *Julie Lawson:* Thanks, Kathy. I might be interested in an offline conversation to dig into that a little more. We're trying to balance the work the jurisdictions themselves are doing because it's their own economies, but also what the value add of being part of the Program is. I think that there are a lot of learning opportunities as well as demonstrating economic impact. Telling the story about the funding that's going into

these projects and what that means for the local economy. We would definitely love to get more info.

- ***Response:*** *Kathy Boomer:* That sounds great and just adding producers and developers. You know, some of the local knowledge that we have and really capitalized on when we're thinking about advancing our restoration goals.

Comment in chat: *Rachel Felver:* I think it's a great pivot, Julie. It encourages job growth and technical assistance programs for those areas that sorely need more workers.

Q: *Breck Sullivan:* What outcomes do you think this could help support the most so that we can start thinking of the strength between them?

- ***A:*** *Julie Lawson:* One way I have been thinking about all of our people outcomes is that they all, at the end of the day, come down to capacity building. I started thinking about this in at the MB conversation about Local Leadership. The Local Leadership Outcome is designed to build the capacity of small local governments. The Education Outcomes strengthen the capacity of our students and our educators. Stewardship increases the capacity of the individual residents of the watershed and this will increase the capacity of both workers and employers. My job at DOEE is leading our workforce strategic plan and some of what we find is that employers themselves are trying to figure out how they can get engaged in the work that we're trying to support. I think that there's not only opportunity for the workers themselves, but for employers to become stronger and more sustainable businesses, and maybe even see some new businesses and innovation come out of that.
- ***Comment from chat:*** *Kaylyn Gootman:* Enhance implementation right? BMP implementation connection.
- ***Comment from chat:*** *Laura Cattell Noll:* well said Julie. I agree that 'capacity building' is an important theme across several outcomes.

Comment: *Kristin Saunders:* My point ties together what Julie just said and what Kathy was talking about earlier. Thinking about the workforce landscape assessment. I was on the Steering Committee for that project. After the series of interviews were conducted, the contractor talked to each of the Goal Implementation Teams to better understand what their perception was about workforce needs in order to fulfill the implementation of their individual outcome work or strategies. One of the things that was really eye opening for us was that they also looked across the workforce training programs that exist and in some instances were able to drill down folks who were doing workforce training and assessing workforce needs at the local level. This idea of matching what goal teams need in terms of workers and capacity to get their outcomes done with workforce training programs that in many instances exist but are just not connected to each other. It does connect to everything in some way, shape, or form, which is partially why I'm really excited about this idea of having it as a specific outcome. Pulling together a lot of what we have learned is a need across the watershed and it's multidisciplinary. It's not focused on living shoreline

construction for example. It's the full breadth of work that is needed to support the kinds of things that we're looking for at the local level.

- ***Response:*** *Julie Lawson:* Thanks, Kristin. We also contemplated how it's not just BMP implementation, but you could consider conservation roles like Park Rangers and public access type work. You could even contemplate fisheries and aquaculture and those other types of local economies that are critical to the Bay and the watershed.
- ***Comment in chat:*** *Kaylyn Gootman:* Love the conservation tie in, Julie!

Comment: *Peter Tango:* Nice direction and momentum here. I am going to reflect on our conversation yester. When I look at your outcome language right now, I love that first sentence to the first comma, which to me is very explicit about an outcome expectation. Then the following work reads to me as the activities that you want to do to achieve. Relating to what we talked about yesterday, can we be concise with two sentences that state what it is that we're doing and sort of the trajectory. You've got the back end of that with the 2030 in there. I'd ask if there's anything magical about 2030 or is there a way to attach a growth expectation there? Lastly, if we have something that says grow the regional workforce that I think you were just alluding to, for me that's an implicit statement saying that there's some sort of baseline out there and we're starting to say who's included in that universe? So, think of these points, the language here, the consistency in which we're thinking about the conciseness of some of it, and what's an output vs an outcome. Trying to just give a little perspective from what I see from our discussions yesterday and where that might fit with the great work you made here.

- ***Response:*** *Julie Lawson:* Thank you. I appreciate that. Like Anna prefaced with her presentation yesterday that it was little out of her head and had not been reviewed by anyone. That's what the draft outcome language is for me. I wanted to make sure there was something here to react to, if we were proposing something that was totally new, that we could work from it rather than it just being blank. That would lead to more uncomfortable questions.

Comment: *Britt Slattery:* I wanted to offer my support. I think Kristin kind of summed up everything that was going around in my head. Because of our situation in the government, we had to step back, and it's been very stressful for me to not be able to participate. Julie has done a fantastic job of taking everything that the Workforce Action Team GIT funding project, the advisory committees, and everyone who has been talking about for so long. She's taken it all and amazingly expressed it in a compelling way on one slide and a two pager. I am really hopeful that it does get the support. I just wanted to say thank you to Julie for all of the work. I know she's been working in between all the cracks to be able to find time to get this done. Thank you.

Climate Adaptation Outcome: *Continually pursue, design, and construct restoration and protection projects to enhance the resiliency of Bay and aquatic ecosystems from the*

impacts of coastal erosion, coastal flooding, more intense and more frequent storms and sea-level rise.

Molly Mitchell (Virginia Institute of Marine Science, VIMS): **Our recommendation to the MB is to UPDATE the Climate Adaptation Outcome.** The adaptation outcome has a focus on the long-term resilience of both the natural and the human communities in the Bay. Specifically, it supports the climate resiliency goal by focusing on the restoration and long-term protection of the natural habitats, which in turn support the living resources, economies and communities of the Chesapeake Bay. Additionally, this outcome supports the advancement of our understanding of the changing system, the implications of those changes and the adaptation science.

To date, this outcome has successfully brought together scientists, practitioners, and community members, and has facilitated the transformation of adaptation science into management. It's been used to provide justification for community resilience grants, and it has produced information such as an understanding of how marshes across the Bay will change under sea level rise, which has been incorporated into the Chesapeake Bay Program watershed model, improving the management actions and enhancing this long-term resilience efforts. Partner feedback strongly supports the importance of this outcome, given the potential impact of changing conditions on Bay Resources. Partners felt the outcome allowed for more focused investment and legislative actions at the state level. The outcome also allows for a shared understanding of the impacts of change and the potential values of restorations across jurisdictions, which contributes to a more holistic management approach that's critical for resilience.

However, the current wording of the outcome is qualitative and not SMART. Therefore, we recommend updating the language of the outcome. Improved wording would include measurable objectives and achievable milestones for obtaining those objectives, including place-based language such as specific target areas, maybe watersheds. Our thinking is that maybe bigger areas could help make the objectives more clearly measurable. In addition, the development of success metrics that incorporate a long-term view of the function of adaptation measures will help promote actions which contribute to the longevity of coastal resilience.

Another challenge we face is, as the placement of the adaptation outcome under the STAR structure, the workgroup currently has a large membership, and the meetings are well attended by scientists and practitioners. However, there are still barriers to implementation of the adaptation options. So, although the outcome is based in science, the outcome focus is really on implementation and needs jurisdictional support. This suggests that a formal GIT Advisory Board or some other group could be a more effective means to achieve the outcome.

In summary, although the partners feel like this is an important outcome and it has been successful to date, we think updating the language to make the outcome SMART will

improve the likelihood of achieving long term resilience of both the natural and human communities – making it easier to track progress across Bay jurisdictions and easier to coordinate between different partners.

Q: *Gina Hunt:* You were mentioning that this is not SMART, and you need some metrics. Do you have any idea of what those metrics would be? I should mention that jurisdictions will likely not want new metrics and would want to use something that they are already tracking.

- ***A:*** *Julie Reichert-Nguyen:* The way the WG has been characterizing this is to take more of a place-based holistic watershed approach. We need to identify metrics that would help us target which and how many places this outcome would focus on. We have already had some successes of doing this. For example, the Marsh adaptation identified 6 focus areas using different marsh resilience metrics like, sea level rise vulnerability, social vulnerability, and conservation indices. We would build on this concept, but it would be at a larger scale. We also must consider at what scale? How big these areas are? Essentially, we want to identify these place-based areas so the team could provide scientific assistance that will identify where you are at and the ecosystem services that will support communities, like habitats and water quality. We can imagine a menu of options being created and this would allow us to work with the jurisdictions of how to go about implementing them and being successful. We see this as being a cross-GIT effort. The responsibility wouldn't fall on one group.

  The measurable component would be identifying the adaptation options and implementing them. This would require working closely with partners and creating timelines that can function as incremental milestones, i.e. achieving X within two years. In short, the idea is to focus on these areas, provide scientific expertise to inform the adaptation options, and collaborate with the implementers to work towards implementing those options to build the resilience.

- ***Comment from chat:*** *Kristin Saunders:* One way to look at this adaptation work in a way that doesn't feel "extra" for jurisdictions, could they opt to identify areas they are working in or plan to work in (like MD Whole Watershed for example) and then identify the progress on adaptation?

- ***Response:*** *Molly Mitchell:* It's not necessarily that we want new efforts. This connects a lot with the wetlands workgroup. This is a longer term view of things. So it's maybe not just are we going to count our wetlands every year, but what do we want the wetlands to look like in 2050? I think that is one of the important things about, looking not only at adaptation, but what does that mean long term? That is the advantage of being incorporated into the Bay model.

- ***Comment from chat:*** *Keith Bollt:* To Julie's point, it's important that the jurisdictions buy in, and send the right people to this WG with the delegated authority to base resiliency project decisions on this Bay Program work.

- ***Comment:*** *Breck Sullivan:* Maybe one way to look at this adaptation work is so that it doesn't feel extra for jurisdictions is that they could identify areas they are working in or plan to work and then identify their progress. *It seems that MB is interested in hearing about thoughts/ideas for metrics at the meetings. Just something to be prepared for.*

- ***Comment from chat:*** *Keith Bollt:* I like Kristen's comment better than mine. But the jurisdictions would still need to continue to send their resiliency people to this WG.

Comment from chat: *Peter Tango:* Adaptation - "protection of communities" could be translated into nuisance flooding rate standardized to sea level. Communities have painted streets and buildings white in an effort to reduce local temperatures - satellite data tracks ground temps in high resolution and publications have shown impacts and trends on water quality of temperature slugs, "economic effects" - think of Florida, storm impacts on insurance illustrate the decoupling of insurance support from storm impacts so tap into their data, "protect communities", e.g. black rail and seaside sparrows depend on large acres of contiguous wetlands, if we continue to see large marsh degradation we are losing those bird communities - eliminating nutria was an adaptation approach to sustain marsh integrity. There are many ways to support protection and economic outcomes using indicator data.

- ***Comment from chat:*** *Rachel Felver:* Tie-in with community tree plantings as well.

- ***Response from chat:*** *Peter Tango:* Yes - data shows the high values associated with cooling areas as community valued important locations in urban areas so there are multiple benefits from the urban tree canopy perspective for example.

Climate Monitoring and Assessment Outcome: *Continually monitor and assess the trends and likely impacts of changing climatic and sea level conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.*

Ken Hyer (United States Geological Survey, USGS): **Our recommendation to the MB is to REPLACE the Climate Monitoring and Assessment Outcome.** Mark Bennett will be presenting to the MB. I had to step in on short notice, so while I won't have the same depth of knowledge or nuanced understanding, I think we'll be able to work through this discussion effectively. I want to clarify my approach today. As you've heard, there have been references to our new administration. Right now, I'm simply reporting on discussions held by the Climate Resiliency WG. This is not an official USGS position—we're still awaiting further guidance from the administration. Once we have that, we'll have a clearer sense of our role and how things may evolve.

The current outcome language is broad and ambitious, requiring a significant effort to achieve. Based on our discussions, there is strong value in this outcome because climate trends ultimately affect—and can be a key driver for—many other outcomes. Additionally, the Executive Council's Climate Directive mandates that we incorporate climate considerations into our outcomes. The partnership aspect of climate resilience is critical—it's not just about individual efforts but about collective learning, shared communities of practice, and collaboration.

The risk of not including this outcome is that it calls into question whether our goals are truly SMART. If climate impacts are not considered, one could argue that some outcomes may not actually be achievable, making them less effective.

One of the biggest challenges with the current outcome is its scope. Continually monitoring and assessing climate trends and their ecosystem-wide impacts is a massive undertaking, particularly for a relatively small group like the Climate Resiliency Workgroup. This challenge has been persistent.

To address this, the group is proposing to replace the current outcome with a new approach: develop and implement a Climate Resiliency Assessment Framework. What does this mean? The idea is to shift from direct monitoring to providing support for other outcomes, helping them integrate climate considerations into their frameworks. The new outcome would: 1) Share climate science and best practices; 2) provide guidance on ensuring outcomes are SMART and achievable from a climate perspective; and, 3) offer information on what strategies are working and how to improve climate resilience. Most of the actual monitoring and assessment of climate trends is already being conducted by other groups that specialize in spatial and temporal analysis. These groups are using climate data for additional research and decision-making, rather than just collecting data without further application.

With this shift, the Climate Resiliency Assessment Framework would serve as a pathway to integrating climate considerations across the Chesapeake Bay Partnership. The key challenge in making this successful is that it will require broader engagement—not just from the Climate Resiliency Workgroup, but across all outcome groups. This means fostering collaboration to help each outcome incorporate climate resilience and adaptation strategies. The goal is to move from a broad, resource-intensive monitoring objective to a supportive, integrative role, where this group connects with other outcomes and enhances their climate resilience efforts.

Q: *Kristin Saunders:* there is a need to address climate in our work. There is some difficulty in trying to talk about climate at a federal/state level. Would it be helpful to preemptively address this at the MB Meeting?

- ***A:*** *Ken Hyer:* you are correct that this is causing a challenge at the federal/state level. We are really hoping to have some guidance to understand how we can talk about this

comfortably. In previous administrations, we were allowed to talk about this as an emerging stressor – just to better understand climate as a possible driver. Currently, we are trying to figure out, based on administration priorities, that we can talk about this. I hope we can talk about increasing flows, etc., and their effect on the ecosystem. I acknowledge that maybe we should change the outcome title, but I am leaning towards avoiding having to do that.

- ***Response:*** *Keith Bollt:* the 2021 EC directive has the word climate in it. What we are reporting on is how to create a WG that can integrate that directive into the Bay Program.
- ***Response:*** *Chris Guy:* we are seeing that this is not a high priority for the administration but it is not being ignored. Of course, we still wait for more direction on how to host these conversations. DoD just announced that this is not part of their mission. There are still some real ramifications. I agree with your statements Ken and I don't think we should change the language and anticipate the direction concerning this.

Comment from chat: *Peter Tango:* In line with the logic model - Creating a framework for anything is an activity. Applying its concepts to mature all outcomes is an activity. Reducing nuisance flooding in 10 communities by 2035 (because we are a hotspot of nuisance flooding in the US) - that's an outcome of management for example. Protecting X miles of shoreline from erosion, improving water clarity and increasing SAV cover along those miles, that's an outcome. I am challenged by the flavor of the present proposal in the context of it being presented as an Outcome.

Comment: *Chris Guy:* I think we need to have the word adaptation included because, largely, that was the discussion at the PSC MB.

What is the role of the Bay Program as it relates to climate? Are we going to mitigate it? Are we going to adapt? We decided that we are not mitigating climate—that is not our role. However, we will set up for adaptation to climate changes. That aligns directly with what we are discussing in terms of stressors. As stressors occur, how can we alleviate them? That needs to be part of the dialogue.

Another thought I liked is a form of integration. As an outcome in the metrics, it would be beneficial if, for each group of outcomes we establish, we also create a tool specifically for that outcome. For example, if it's a wetland outcome, under this framework, we should establish a monitoring and assessment climate framework to determine expectations and adaptation strategies. We could develop a product for each outcome and systematically work through them. That would be a significant win.

- ***Response:*** *Ken Hyer:* I really appreciate the integration aspect. The ability to work more closely with other outcomes, just as toxic contaminants do, is a great opportunity. This kind of focused integration would be incredible. We could refine it further, ensuring success. Climate has already been successfully included in CAST and the model, demonstrating the impact of a focused approach.

They asked, "How do we bring climate into the model?" That was a success story. We should replicate that process for other outcomes—whether 10 outcomes, prioritizing four, or tackling five or six each year. We can structure it within a timeline, ensuring continued progress. There is enthusiasm around this idea.

- ***Q:*** *Kaylyn Gootman:* Can we incorporate this approach into the framework?

- ***A:*** *Chris Guy:* Of course, we cannot complete it within the limited time left in the current cycle, but we can time-scale it. The key is to consider the relevance of many of our outcomes. Historically, we've used the same models with a 10-year timeframe, but intentional planning is essential. If we have 30 outcomes, tackling one or two every couple of years ensures steady progress.

- ***Response:*** *Breck Sullivan:* Mark isn't here, so I can assign him tasks freely. However, we could likely secure funding for this initiative. This aligns with previous discussions about leveraging the SRS process to assist with implementation. We will not be able to complete it by the end of December 2025, but that is the purpose of this outcome. I have a note for Mark: When describing this, it is important to connect it to Peter's comment in the chat.

Comment: *Breck Sullivan:* The MB often gets mixed up with disposition terminology. If they see "replace" in our language, they might mistakenly assume we are eliminating an outcome rather than integrating it into a framework. We still want it to be an outcome, but we call it a framework because we aim to integrate it across all outcomes. That distinction needs to be made clear.

Peter also mentioned that, in terms of the logic model, this approach does not necessarily connect directly, and I agree. However, I struggle with this concept. I consider what was said yesterday—starting with a general framework and adjusting for outliers as needed. My biggest concern is the risk of losing this as an outcome altogether. Even now, it is not always treated as a priority. If we fail to integrate it, it may disappear entirely, with no one left to coordinate it.

- ***Response:*** *Keith Bollt:* I agree, but I also do not know how to ensure it happens. It needs to be a workgroup. If the MB supports the idea of forming a workgroup, that would be a viable path forward. However, there may be pushback due to the perception that we already have too many groups. That being said, this is not an optional project—the governors have mandated that we do this.

- ***Response:*** *Chris Guy:* Yesterday's office hours discussion highlighted the potential for outputs to exist outside of designated outcomes. That was the purpose of the conversation. In essence, this proposed framework would apply across all outcomes rather than being a standalone outcome. It does not have one specific home—it is integrated throughout multiple areas.

A relevant analogy is the work being done in land use. Land use is not a single output; rather, it is deeply integrated across multiple outcomes. Similarly, this framework could follow the same model. No one is talking about eliminating the land use workgroup, so we should consider this a similar case.

- ***Comment from chat:*** *Bruce Vogt:* For Fish GIT, again I think this can tie to the tidal segment assessment. We already have several studies showing how changing conditions are resulting in a loss of suitable fish habitat which could be translated into a risk assessment rom some species. There is also some work on how changing conditions may influence new habitat use by species such as red rum.

Comment: *Julie Reichert-Nguyen:* I was listening to the conversation and excited to hear the enthusiasm about making this work. I always had the impression from the workgroup discussions that the framework is not the outcome—it's the activity that helps us achieve the outcome. The real goal is successfully integrating climate science across our programs to ensure the attainability of our outcomes. The framework is just a tool that allows us to do that. From my perspective, the focus should be on achieving this integration rather than defining the outcome as developing a framework. I don't think the MB meeting should frame the outcome as simply creating a framework. Instead, it should emphasize successfully incorporating climate science across our programs to ensure we achieve our broader goals. I just wanted to offer that perspective.

- ***Response:*** *Ken Hyer:* The framework is not the ultimate goal. One of the things I found valuable in my discussion with Bill Jenkins was the idea that the outcome is the change you want to see. The framework itself is not the change; it's the activity or the method used to achieve that change. The real change happens when climate considerations and climate science are integrated into our outcomes.

- ***Comment from chat:*** *Claire Buchanan:* I had the same thought as Julie. Perhaps wording should be "Integrate climate resiliency to all outcomes..."

- ***Comment from chat:*** *Keith Bollt:* Or the outcome can be all the other outcomes having climate-smart/resilient outcomes.

- ***Comment from chat:*** *Gina Hunt:* I think Julie is correct, but you can write to acknowledge the framework. "Through a framework…".

Comment: *Kathy Boomer:* I thought it might be helpful to share how the agricultural community is addressing this challenge. They are shifting towards framing it as resilience to extreme weather events while also focusing on managing water supplies. There is growing recognition that the way water moves through our systems affects all agricultural ecosystem outcomes.

- ***Comment:*** *Breck Sullivan:* there has been discussion around a soil health outcome or potential outputs. This idea emerged from the small climate group discussions, and there has been significant dialogue about how it connects to broader goals.

Comment in chat: *Bruce Vogt:* back to monitoring and assessment outcome and suggestions for climate science integration. while we don't have guidance yet on not using climate change or climatic conditions, one way to focus could be to prioritize temperature and flooding (rather than SLR). Flooding is a key concern for people and temperature is a big driver for living resources. I'm not suggesting other climate factors are not important but anticipating fewer resources I think more focus will be needed. And I think we have data and tools already for flooding and temperature that could be applied/better translated/tweaked to address multiple outcomes.

Wetlands Outcome: *Continually increase the capacity of wetlands to provide water quality and habitat benefits throughout the watershed. Create or reestablish 85,000 acres of tidal and non-tidal wetlands and enhance function of an additional 150,000 acres of degraded wetlands by 2025. These activities may occur in any land use (including urban), but primarily occur in agricultural or natural landscapes.*

Pam Mason (Viginia Institute of Marine Science, VIMS): **Our recommendation to the MB is to UPDATE the Wetlands Outcome.** We note that we'd like to have the outcome updated to include separate tidal and nontidal wetlands metrics, because those two kinds of wetlands exist. There's a lot of variability between these two, not only in some of the values and benefits of the wetlands, but also their geography and jurisdictional distribution. The previous outcome didn't specify which kind of wetlands we should strive for – the previous outcome language only said a total of 85,000 acres and this can be attributed to the fact that we combine both tidal and nontidal wetlands.

Concerning the outcome being SMART, we did list a quantitative goal in our original outcome. We consider this to be a SMART outcome, but it really did not have enough definition and detail to make it very workable. We note that the original outcome that was set in 2014 did not acknowledge the strong likely impact of changing environmental conditions. For instance, sea-level rise and flooding, temperature changes, and extreme weather on both tidal and nontidal wetlands. Moving forward, we need to have those considerations incorporated into a new updated outcome. Additionally, the original outcome did not really speak to existing wetlands. It was mostly about recreating and restoring wetlands and then maybe enhancing some of existing wetlands. The original outcome language lacked the element of protection against antidegradation and or conservation and protection. We wanted to include those two items into our recommended update.

Finally, we note that for the last year and a half, the wetlands workgroup and the Black Duck action team are proposing a process wherein the black duck outcome expands to

include other water birds. We would use tracking and monitoring processes that exist for water birds as one sort of indicator or output for the wetlands outcome.

The critical element about having a wetlands outcome is for many reasons, most notably the role of wetlands and provision of ecosystem services for other natural and living resources, and the human that occupy Chesapeake Bay – this is called out in the CESR report. For instance, as critical and shallow waters, wetlands are synergistically connected in the landscape and by processes to many other critical habitats for which we have outcomes, including water quality, flooding and erosion, recreation, and cultural benefits to people it's connected to.

Black Duck, Forest Buffers, Protected Lands, Fish Habitat, and Submerged Aquatic Vegetation outcomes are all connected to the wetlands outcome. These systems in real space and ecological space often literally are abutting each other, and their synergistic benefits to having those ecological systems in a continuum and the Chesapeake Bay program process provides for engagement and improves capacity, continuity, and consistency for tracking wetlands.

In conclusion, our existing outcome is that, historically, we weren't doing a great job of tracking some of the wetlands benefits and projects that had been occurring. We recommend having a new system in place to do that and for the Chesapeake Bay wetland workgroups to facilitate and support workshops, and shared learning and collaboration. The recommended outcome update will actually enhance the ability of our partners to actually do wetlands work.

Comment: *Chris Guy:* First suggestion, one of the big reasons for the update was because the previous one was only focused on BMPs for water quality, and it wasn't really functionally obtainable on the landscape. So, the idea of tying it to water quality only is problematic, and I suggest against emphasizing that the reason for it not working is because it's not what the people cared about. The other thing I would say in the presentation is to remind them that we presented this in November and had a discussion with the MB where we got a general agreement. Mention that at the NCTC retreat we were told to repackage what we already had discussed. Just a soft reminder so that none of this is new to anybody. And this would be the same for the Black Duck Outcome.

- ***Q:*** *Breck Sullivan:* For this, you're recommending two different outcomes: one wetland for tidal, one for nontidal, and to my understanding you've held separate workgroup meetings for that? Thinking of other outcomes, they've said "we'll just have one outcome and then more outputs to be more specific." Why have different WGs? Why has this setup worked best for you and why are you suggesting this?

- ***A:*** *Pam Mason:* Yes! We've developed two different teams and have already started to implement this process. We had received a general agreement from the MB to proceed.

- ***Response:*** *Chris Guy:* I wouldn't do that part in the presentation. I would do that as part of the discussion when asked.

- ***Q:*** *Gina Hunt:* Can you articulate why you want to have two separate groups? For instance, when fish habitat presented and said their group, and the actual membership, overlaps with forage and they want to combine the two – essentially, just because the people are the same people. That isn't the case for you. I don't think this will go well, they will likely not want two new outcomes. They might ask if these could be considered outputs instead. However, the fluidity of these definitions of output vs outcome leaves some uncertainty and really only leaves you with having to ask for two outcomes.

- ***Response:*** *Pam Mason:* we're being sort of intentionally provocative to really raise the awareness of the fact that there are folks that overlap in this space, but there's a lot of notable differences, geographic, personnel, and policy and management frameworks between tidal and nontidal wetlands. In the end, we need to have a separation in the long-term.

- ***Comment:*** *Chris Guy:* We have them combined and it dilutes it and if we wrote one outcome and we just roll all these numbers up to a high level, we're setting ourselves up for failure.

- ***Comment from chat:*** *Peter Tango:* With integration - wetlands serve mammals, birds, insects, fish, inverts... can we generalize the value of wetlands on the landscape that serve resident and migratory fish and wildlife across all seasons? Can we help highlight this is not one, two, a few birds we are focused on in the importance of wetlands across the landscape.

- ***Comment from chat:*** *Keith Bollt:* Another analogy to Gina's point on wetlands and tidal wetlands being different workgroups. The land use workgroup is different than any wetland workgroup because just as land is different than water, freshwater systems aren't facing sea-level rise.

    - ***Comment from chat:*** *Peter Tango:* Maybe not SLR, but storm intensities are rising. Good point.

Comment: *Alicia Berlin:* if you need to cut time, you probably don't need to say as much as you did about Black Duck because you pretty much say what I'm going to say.

Comment: *Julie Reichert-Nguyen:* I really like the idea of having two outcomes that cover tidal and nontidal. I think its been very successful with the wetland WG the way they've been structuring. If this comes up at the MB, you can mention that there are similar issues that affect both nontidal and tidal but that there are also specific issues that affect those wetlands that need more focus or attention to be successful.

Q: *Bruce Vogt:* Is the idea here to maybe shift the focus of this more towards the habitat benefits of wetlands? What would this help drive? I don't know if it is an acreage goal or for conservation and restoration of wetlands – would this be more geared towards the value of those living resources?

- ***A:*** *Chris Guy:* Yes, the benefits for living resources and flooding.

- ***Response:*** *Bruce Vogt:* Yeah, that's what I was going to say, Chris. If you're sorting out how many wetlands we need for living resources, but also address flooding risk to communities, you are checking both boxes. This is a good way forward and it is measurable in that you can quantify how much of those wetlands are needed. This ties into some of the fish habitat discussions we've been having too.

- ***Response:*** *Chris Guy:* It does tie to water quality, but I see that as sort of a lesser role in this outcome. Largely because there are BMPs that have a greater impact in the model than wetlands and wetlands have all the regulatory stigmas associated with the permitting, which make them not the best BMP. That has led to the failure of wetlands outcome between 2014 and 2020. One of the very causative factors in why we have not been able to meet the goal.

- ***Comment:*** *Kristin Saunders:* I want to amplify what Bruce and Chris were discussing. In speaking with members of the MB over the past several weeks, a recurring theme has emerged from various jurisdictions, including some Maryland agencies. The sentiment is that wetlands and forestry goals should align with what's in the WIP. Many see these as separate outcomes but in service of achieving water quality targets, rather than focusing on the broader habitat perspective. *Given that, I think it might be helpful to clarify early in your presentation that this initiative is about more than just water quality. It's about achieving broader living resource benefits, impacts on people, and other related factors.*

- ***Comment from chat:*** *Katie Brownson:* If we set goals for buffers that are consistent with the WIPs they will be even less realistic (at least for some states).

- ***Comment:*** *Chris Guy:* It may be helpful to point out that the previous goal failed because it was tied only to the WIPs. The numbers came from the WIPs rather than from a broader SMART outcome approach.

Comment: *Peter Tango:* I'm thinking about the broader benefits. Is there any work connecting this to water retention on the landscape? Beyond just water quality, are we considering the availability of water?

- ***Comment:*** *Pam Mason: Yes, water quantity is definitely a factor. I'll try to remember to include that point.*

- ***Q:*** *Chris Guy:* One challenge we face is that there's just so much information—how do we focus?

- ***Response:*** *Pam Mason:* Yes, that's one of the difficulties with wetlands. When we analyzed other outcomes, we found that wetlands are tied to two-thirds to three-quarters of Bay-related outcomes. It's difficult to pinpoint one specific focus because wetlands are integral to so many areas—education, recreation, water quality, open space, and more. Wetlands either help provide these outcomes or are necessary for achieving them. That's why it's challenging, but I appreciate the input.

- ***Comment:*** *Chris Guy:* That's precisely why consolidating into two outcomes is actually a simplification, even if it seems more complex at first. Within those two outcomes, we can focus more effectively on the most critical aspects, including water quality. When we lump everything together, we lose focus.

- ***Comment in chat:*** *Kathy Boomer:* Peter- building on your comment, recognize the value of wetlands for managed aquifer recharge, restoring environmental flows for aquatic habitat, and enhancing drought resiliency.

- ***Comment in chat:*** *Keith Bollt:* Aquifer recharge- drinkable water is a potential untapped people-centered hook for justifying a number of outcomes (wetlands, stream health, water quality, brook trout, others).

Black Duck: *By 2025, restore, enhance and preserve wetland habitats that support a wintering population of 100,000 black ducks, a species representative of the health of tidal marshes across the watershed. Refine population targets through 2025 based on best available science.*

Alicia Berlin (USGS): **Our recommendation to the MB is to RECLASSIFY the Black Duck Outcome.** Our goal has been structured as a SMART outcome, but it has not been achievable in its current form. As a result, we are making recommendations—some of which have already been implemented through previous discussions and approvals—to reclassify our outcome as an output under the wetlands outcome. Additionally, we are broadening it to incorporate other waterbirds and waterbird guilds, as they serve as important indicators of wetland health and overall ecosystem function.

We have a variety of metrics within the waterbird and habitat communities to assess the health of tidal marshes across the watershed and to inform this output. Expanding this classification to include waterbirds provides several benefits. It allows us to prioritize conservation efforts using the indicators and indices we have, ensuring that wetland protection and restoration efforts are strategically focused to maximize ecosystem benefits. Furthermore, by including all waterbirds, we can better connect to a broader range of wetland types, not just tidal wetlands but also freshwater wetlands. This will enhance coordination with the wetlands outcome.

There is significant stakeholder and management overlap between black ducks and wetlands conservation, making it logical to integrate our efforts with the Wetlands Workgroup. Over the past year, we have worked to leverage opportunities across both outcomes to improve coordination and impact. Additionally, waterfowl, whether through hunting or birdwatching, generate significant public interest and value. Incorporating waterbirds as a living resource metric within the wetlands outcome aligns with these interests and strengthens our overall conservation efforts.

Comment: *Chris Guy:* I have a couple of suggestions. Instead of saying we are broadening the outcome, *I would suggest saying we are shifting the outcome*. Specifically, shifting it to waterbirds while emphasizing that this is not a request for additional resources. Rather than expanding, we are actually simplifying by consolidating existing resources around Chesapeake Bay wetlands. This shift aligns with the priorities of shallow water habitat functions within wetlands. The challenge with black ducks was that covering both tidal and non-tidal areas became overly complex. By shifting to waterbirds—species we are already monitoring—we can integrate these metrics into our reporting at a Bay-wide scale.

This approach simplifies communication with the public, clearly demonstrating the success of wetland conservation and shallow water habitat restoration. The key here is that "broadening" or "expanding" are terms that can be misinterpreted negatively. Instead, *emphasizing a shift and integration makes the message clearer and more acceptable*.

Comment: *Peter Tango:* I find this really helpful. For a long time, I've understood the importance of the metrics and the habitat gradients evaluated here. This connects well with related areas, including shoreline habitat and its value, impacts on fish and invertebrates, SAV recovery, and water quality. There are strong connections to multiple outcome directions and indicators, making this approach align well across various conservation efforts. Using community-based metrics for integration brings high value, both conceptually and practically. Great work.

Comment: *Chris Guy:* I would also emphasize that we have already presented this approach. Over the past two years, we've had extensive discussions with both the wetlands and black duck teams. We've sought input, and we are now implementing what the MB has directed.

- ***Response:*** *Gina Hunt:* Yes, they agreed to it. The only part they didn't approve was expanding to other waterbirds. They may ask why, but I think you explained it well—waterbirds are important indicators, and we already have the data. That's what they need to know. This isn't about adding more work; it's about improving the way we use existing data. *It's not more, it's just better.*

Submerged Aquatic Vegetation Outcome: *Sustain and increase the habitat benefits of submerged aquatic vegetation (SAV) in the Bay. Achieve and sustain the ultimate outcome of 185,000 acres of SAV Bay-wide necessary for a restored Bay. Progress toward this*

ultimate outcome will be measured against a target of 90,000 acres by 2017 and 130,000 acres by 2025.

Brook Landry (MD DNR): **Our recommendation to the MB is to UPDATE the Submerged Aquatic Vegetation Outcome.** We don't have finalized draft language yet, but the updated version will be nearly identical, just with revised numbers. Our recommendation is to update the SAV outcome to align with jurisdictional SAV and water clarity standards. This update will result in a higher SAV acreage target than the current outcome, but it will also provide a more accurate reflection of the potential SAV extent in each Chesapeake Bay segment.

The SAV outcome is measurable because we regularly track acreage through an annual SAV aerial survey. This long-term survey has been in place since 1984, with the most recent data from 2023, and we will conduct another survey in 2024. This allows us to evaluate progress over decades. The outcome is also time-bound, with interim goals built into our framework. For example, our previous goal was 90,000 acres by 2017, which we achieved and sustained for several years. The 2025 goal was set at 130,000 acres, and we will likely shift internal targets toward 2030 based on updated data.

In terms of why we want to maintain this outcome and its importance to the Chesapeake Bay Program—SAV provides essential habitat, improves water quality, and plays a critical role in climate change resilience. The SAV Workgroup also facilitates regional coordination, leverages scientific expertise and resources, sets science-based goals, and tracks progress using the aerial survey. We foster collaboration between agencies, organizations, and universities, while also engaging with stakeholders.

This outcome directly benefits both ecological and social values, impacting people and businesses that depend on the Bay for their livelihoods and recreational opportunities. Ultimately, there are no dramatic changes to the SAV outcome. We are simply recommending an update to the numbers based on more recent and accurate data.

Comment: *Gina Hunt:* I thought you covered everything well. The only issue is that when you say it's not a big update and that you're just aligning with new numbers, there's no explanation of why. I expect someone will ask, "What are the water quality standard numbers you're aligning with?" or "What is the jurisdictional SAV number?" Either they'll ask, or you'll need to clarify it a bit more if you can fit it into the three minutes. Right now, it's not clear what the actual update entails.

- ***Response:*** *Chris Guy:* We have a strategy that Brooke and I worked on yesterday. Dede is going to put the draft language into the chat, just like we did for some of the other updates. The caveat is that the workgroup hasn't fully vetted these recommendations yet, and discussions are ongoing. But the general theme remains the same. There will be numbers included, but we want to be clear that they are not finalized recommendations yet. They may remain the same, or they may change—we're still discussing them. The

only other thing I'd suggest, Brooke, is mentioning that this is part of the 117 authorization for SAV. Like toxics earlier, SAVs are specifically named under statutory authority.

Comment: *Chris Guy:* I would suggest you highlight that the SAV aerial survey is considered part of the core monitoring network for the Chesapeake Bay Program. We have a dedicated team working to secure funding to maintain this monitoring, including enhancements with AI. This effort is in line with MB and PSC directives. If someone asks about monitoring, you can either call on Peter or me to respond, or you can mention it yourself. It's just good background information in case the topic comes up.

Comment: Breck Sullivan: This is considered a core monitoring network for the Bay Program and there is a team that is tasked with continuing to find funding to support this effort and to continue to ...

- ***Comment from chat:*** *Keith Bollt:* With decades of SAV continuous data.

Q: *Julie Reichert-Nguyen:* You mentioned enhancing the Bay's resilience to climate change, but there are also challenges impacting SAV. How do you plan to achieve that increased goal?

- ***A:*** *Brooke Landry:* Yes, I anticipate that question, especially since we haven't yet reached our current goal. The increase is based on updated water clarity standards. Originally, when summing all segment acreages, the goal was around 190,000 acres. However, after reviewing GIS projections, we found discrepancies—some acreage had been cut off due to outdated projections. Correcting for this, the total SAV acreage goal now stands at 192,000 acres.

  Additionally, Virginia updated its segment assessments and codified them to reflect more recent expansions. Those adjustments resulted in an increase to approximately 196,000 acres. These updated numbers are now used for water clarity assessments at the segment level to determine whether segments pass or fail.

  Regarding climate change, we know SAV is being lost in some areas—specifically eelgrass in Virginia. The original goal was based on eelgrass projections, but as eelgrass declines, widgeon-grass is expanding in many areas. Widgeon grass has a greater capacity for expansion under improved water quality conditions. While the functional and seasonal values differ slightly, total acreage may still be achievable over time with improved nutrient reduction efforts.

  The SAV WG discussed whether to adjust the goal downward based on climate impacts, but there was unanimous agreement that the goal should remain aspirational. Instead of reducing it, we'll describe it as an ambitious but achievable target, in line with our long-term restoration efforts. Our interim goal for 2035 will likely be based on current

trajectories—building on the 130,000-acre milestone we reached in 2020 and setting realistic expectations for 2030 and beyond.

- ***Comment:*** *Chris Guy:* The details matter! But maybe avoid bringing up too much complexity in next week's discussion.

- ***Comment from chat:*** *Joseph Morina:* There are the updated VA SAV acre goals Brooke was just alluding too: 9VAC25-260-185. Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its tidal tributaries.

- ***Comment from Chat:*** *Peter Tango:* Brooke - evolution of our understanding of the Bay, SAV, and its assessment have provided scientific justification behind an increased goal acreage

- ***Comment:*** *Brooke Landry: Something that I can say if the topic does come up is there are many factors to consider and that improving water quality will positively impact SAV over time. The goal is still achievable, but it requires a collaborative effort across the entire watershed.*

- ***Comment:*** *Chris Guy:* One final takeaway—let's avoid using the word "aspirational." Instead, frame it as a standards-based target.

Comment: *Breck Sullivan:* One thing that concerns me is that we are increasing the SAV target to align with water quality standards, which we are expected to meet. However, Brooke also described the target as aspirational. If the total target is aspirational within our timeline, that raises concerns.

That said, there is a 2035 progress expectation built into the plan. This milestone will be realistic, and Brooke is working on setting a number based on our current trajectory for 2030. While I'm not concerned about reaching the incremental steps, my concern lies in how this aligns with our monitoring responsibilities. If water clarity is one of our water quality standards, and we are setting a goal based on an aspirational target, that creates uncertainty.

- ***Response:*** *Chris Guy:* Technically, the standard is codified in regulations, meaning jurisdictions are required to meet it. While we may describe the goal as aspirational based on the rate of progress, it is still a formal regulatory expectation.

- ***Response:*** *Peter Tango:* A key issue is whether all 92 Bay segments must meet the standard simultaneously. We know that's not realistic. Water quality fluctuates due to weather and other changes, so we expect some segments to meet the standard while others may fall short in any given year. The aspirational aspect is achieving and maintaining compliance across all segments at once.

- ***Comment:*** *Brooke Landry:* Yes, and that's why the SAV WG discussed including additional language in the outcome for each SAV salinity zone. Different SAV communities respond differently each year. Some years, eelgrass struggles while freshwater grasses thrive, and vice versa. We considered breaking the goal down by salinity zone to reflect this variation, as success can be strong in one region while another declines. However, we ultimately decided that this approach was too complex for the outcome language. That said, we could include a rolling assessment as a supporting metric.

- ***Comment:*** *Chris Guy: Maybe the best approach is to avoid using the word "aspirational" altogether. Instead, we should simply present the target as a standards-based goal and explain how it was determined.*

- ***Response:*** *Brooke Landry:* At this point, no one on the MB is pushing for changes to the target. There is strong concern that lowering the goal would give the impression that we are backing away from our commitment, even if logically it makes sense to refine expectations.

Comment from chat: *Keith Bollt:* Something for other outcomes to consider in their indicators too- running averages that smooth out short term change in variables.

- ***Comment from chat:*** *Peter Tango:* Something like that, agreed, would be helpful for consistency in assessment, translations, and communications.

- ***Comment from chat:*** *Brooke Landry:* we spent a long time talking about making the outcome a running average but ultimately it was decided that's too complicated. But it could definitely be part of our annual assessment.

Open Discussion:

If all outcomes have gone prior to 11:30 AM, we can use the remaining time for open discussion on cross outcome connections, follow up questions, etc., or we can end the meeting early.

11:30 AM Adjourn

Attendance:

Jeremy Hanson (CRC), Kaylyn Gootman (EPA), Chris Guy (USFWS), Peter Tango (USGS), Ken Hyer (USGS), Breck Sullivan (USGS), Keith Bollt (EPA), Allison Welch (CRC), Gabriel Duran (CRC), Joseph Wood (CBF), Tou Matthews (CRC), Kathy Stecker (MDDNR), Ashley Hullinger (PADEP), Laura Cattell Noll (Alliance for the Chesapeake Bay), Katherine Brownson (USFS), Kristin Saunders (UMCES), Ann Foo (UMCES), Julie Reichert-Nguyen (NOAA), Julie Lawson (SAC), Rick Mittler (Alliance for the Chesapeake Bay), Erin Sonnenberg (CRC), Kathy Boomer (FFAR), Douglas Austin

(EPA), Brooke Landry (MDDNR), Sarah Brzezinski (EPA), Anthony Timpano (VADEQ), Claire Buchanan (ICPRB), Scott Heidel (PADEP), Caroline Kleis (CRC), Molly Mitchell (VIMS), Wuillam Urvina (NWF), Gina Hunt (MDDNR), Joseph Morina (VADEQ), Bruce Vogt (NOAA), Ruth Cassilly (UMCES), Julia Fucci (CRC), Dede Lawal (CRC), Nick Staten (CRC), Rachel Felver (Alliance for the Chesapeake Bay), Amanda Shaver (VADEQ), Britt Slattery (NPS), John Wolf (USGS), Tom Parham (MDDNR), Pamela mason (VIMS), Alicia Berlin (USGS), Mark Dubin (UMD), Carl Friedrichs (VIMS), Christina Garvey (CRC), Suzanne Trevena (EPA).