Chesapeake Bay Program

Watershed Technical Workgroup (WTWG)

Meeting Minutes

Thursday, May 1, 2025

10:00 AM to 11:05 AM

Meeting Materials

Summary of Actions and Decisions

Decision: The WTWG approved the April Meeting Minutes.
Action: If you are interested in or curious about the open WTWG Chair position, please reach out to Caroline Kleis, CRC (kleis.caroline@epa.gov), and Auston Smith, EPA (smith.auston@epa.gov) for additional information.
Action: Please provide any feedback on the sewer service area data layer to Jackie Pickford (jpickford@chesapeakebay.net), USGS, and Caroline Kleis (Kleis.Caroline@epa.gov), CRC, by May 2nd.
Action: WTWG members with questions on the aggregation of the High-Resolution LULC data to the Phase 7 Land Use classes and the ways in which this information is used to inform CAST should reach out to Sarah McDonald (smcdonald@chesapeakebay.net) and Helen Golimowski (helen@devereuxconsulting.com). Members interested in this discussion are also encouraged to attend the Agricultural Modeling Team (AMT) meeting on May 9th.

Meeting Minutes

10:00 **Introductions and Announcements** – Auston Smith, EPA (15 min).

- **Decision:** The WTWG approved the April Meeting Minutes.
- Call for WTWG Chair – WTWG Leadership
    - **Action:** If you are interested in or curious about the open WTWG Chair position, please reach out to Caroline Kleis, CRC (kleis.caroline@epa.gov), and Auston Smith, EPA (smith.auston@epa.gov) for additional information.
- PA DEP/ Resolve Hydro AgWG Remote Sensing Update
    - Auston Smith, EPA, noted that the Agriculture Workgroup (AgWG) met in April and approved the methodology for remotely sensing conservation tillage practices that was put forward by the Pennsylvania Department of Environmental Protection and Tom Howard of Resolve Hydro. Materials can be accessed on the April AgWG calendar page. Congratulations to all involved in the effort!
    - Scott Heidel: Thanks, Auston. Really happy about that. Hoping to use this newer technology as well as the machine learning modeling to dial in our accuracy and coverage of this particular really really effective BMP type. Thank you very much. Really appreciated everybody's help in the whole process.
- Sewer Service Area Data Review by 5/2
    - Auston Smith, EPA, reminded the group of the email sent on April 14th by Caroline Kleis, CRC, requesting the WTWG's review of the sewer service area data layer.
    - **Action:** Please provide any feedback on the sewer service area data layer to Jackie Pickford (jpickford@chesapeakebay.net), USGS, and Caroline Kleis (Kleis.Caroline@epa.gov), CRC, by May 2nd.
    - Angela Jones: Can I put my email in the chat so that I could receive that as well?

- Auston Smith: Absolutely. We can forward it to you during this call. It's just a GIS layer, so any insight or feedback you can send to Jackie and Caroline. Details to be provided.
- Angela Jones (in chat): Angela S. Jones, DoD CBP - angela.s.jones7.civ@us.navy.mil

- Reminder of Bill Keeling's Presentation of Application of Upland Buffer Credit for Phase 7 at May AgWG
  - In April, the WTWG heard from Bill Keeling, VA DEQ, on a proposed updated approach for the application of upland buffer credit for Phase 7. Bill will provide the same overview at the May Agriculture Workgroup (AgWG) meeting to get their insight on the approach. Following this meeting, additional questions and comments will be addressed, and the group will vote on the proposal at a subsequent WTWG meeting.
- 2025 QAPP Update Email from Auston Smith and Ruth Cassilly
  - Auston noted that a QAPP email went out last summer to try and provide a sense of proactivity to ensure that the finalized version of the QAPP was in front of you from 2024. The email also outlined any desired shifts and changes that were remaining from the 2024 progress year and ongoing discussions about updates a particular jurisdiction might have on methodology, BMP submission, particular units as it relates to the NEIEN appendix, and any other topics. A similar email will go out this summer and Auston and Ruth will try and flag those topics as well. For the jurisdictions involved in the Conowingo effort, if you are trying to break out submissions for those Best Management Practices, alluding to that somewhere in the QAPP will also be appreciated. A list of those items will be provided in the email that Ruth and Auston will hopefully send a month or so after progress is released. This effort is to increase efficiency so that a revised version of the 2025 QAPP can be provided by September 1st.
- 2024 Progress Update for Release of Final Scenario
  - Auston Smith, EPA, noted that he is putting forward the analysis of the final progress scenario in front of leadership this week, and they are hoping that the progress scenario, press releases, blogs, and social media posts can be formally released to progress buddies and all CAST users in the coming weeks.
  - Olivia Devereux: Helen will be sending out the newsletter and pointing that out. But, as everyone will see it, the other update is that all of the trends over time graphs will be updated, and the WIP comparison tool will be updated to have 2024 added in it, too. So, those will be available. We did update the compare to planning target tool, so that has the new names for the planning targets. They used to be called the 2025 WIP or Phase 3 WIP for 2025. We started calling them interim progress, and now when we added in additional information in Phase 6, we're now calling it changing environmental conditions, so that is what the acronym CEC is. So, you will see an interim target with CEC, and that is the one you should use for comparison. The Conowingo remains a separate target with its own separate baseline, and that is also available. So, when you use the compare tool, you can see those new names there, but it is the same scenario, the same data that you all created when you created what were formerly called the Phase III WIPs. So, look for those. That's not a change in data, just a change in name, and then we will have 2024 added to all of the compare tools and graphs. Reach out if you have any questions.
  - Olivia Devereux (in chat): These are the trends graphs that will be updated when 2024 progress is released.

https://cast.chesapeakebay.net/Home/TMDLTracking#trendsOverTimeSection The WIP comparison tool is available here: https://cast.chesapeakebay.net/Home/TMDLTracking#phase3WIPSection

- Auston Smith: Thank you, Olivia. I'll add that also kind of incorporated into the interim targets with CEC is the unaccounted additional loads which I know many of you are familiar with that phrase as well. So, thank you Olivia and Helen. You will see the formal announcement from the Bay Program Office on that. Thank you all for your patience and really all the tremendous work that you all do to ensure that the product can be as accurate as possible.

10:15 **Phase 7 Land Use Data** - Sarah McDonald, USGS & Helen Golimowski, Devereux Consulting (45 min).

Sarah McDonald, USGS/LUWG Coordinator, refreshed the group on the aggregation of the High-Resolution LULC to the Phase 7 Land Use classes. Sarah also provided the group with an overview of the recommendations put forward for the Phase 7 Land Use classes so far and reminded the group of upcoming land use discussions at various workgroups. Helen Golimowski, Devereux Consulting, presented on the ways in which the Phase 7 aggregation is used to inform the CAST land uses.

Discussion:

Elizabeth Hoffman (in chat): I had to step away so apologies if I missed part of this presentation that would have addressed this -- we have a case in MD where the ag land per Ag Census is about 5,000 acres more than the model says, and we are close to hitting that "ceiling" for our conservation planning BMP -- how can that be? I'm assuming cropland in Ag Census is total footprint and not duplicating by counting double cropped land but any insight would be helpful. Thanks! At the county scale. I'll also add, we are confident we are not over-reporting. We have unique maps on the BMP side.

Tyler Trostle (in chat): Helen, can you provide the default rate/equation for construction acres again please?

Olivia Devereux: Helen, can you go back to the question slide? I think this is really important because the purpose of CAST is really for planning and looking at the progress that has been reported in the prior year. So, when we are doing that, we need to think about what levels we want to break it out into. What happened in Phase 6 is people asked us to break it out into a lot of different land use classes but then when the reporting for BMPs happens, it happens at a much larger level. When people do planning scenarios, they reported a much larger level, like they reported it for all rural crops not specifically silage or grain or double crop. They report it for all row crops. But, we were asked to break it out to all those categories, and then I don't see them getting used, and this confuses me, which is why these are the questions on this slide. I also wanted to point out that Elizabeth has a question and, Helen, I don't know if you've had a chance to look at that in the chat, but one of the issues that comes up is how do the states have different amounts than we have in the model? There are a couple of things that tend to go on. One is something simple like if you are reporting forest buffers, for example, and you reverse the length and the width, you'd end up with a 35 foot long buffer that is a mile wide, and that's not correct. That's just a data issue and if you flip it, you could get more credit. If there's an error like that or even just a decimal in the wrong place, then you end up with an issue where there's cutoff in something else that you don't relate to say that forest buffer and you say we are not getting tillage. Why are we not getting credit? It could be because you reported just a decimal

issue or something with forest buffer and that's not in there. Elizabeth also asked about why the Ag Census is so different, and I think the reason for that is something that both Sarah and Helen went over, and it was that decision in 2021 to use the mapped land use acres for the two categories they ma, pasture and hay which is one category, and the other one is cropland, to use those to define the total area of agricultural acres. Then we fit all of the Ag Census crop types into those proportionally. So, it may be that Sarah's team defined the total acres as 200 and then here the Ag Census reported a different number of acres, but we just proportionally do it. I think this is shown clearly on the slide, so thank you, Helen. I think this is probably what's going on and answers your question, Elizabeth, but feel free to come off mute and ask it verbally if I miss something.

Sarah McDonald: One thing I will add to this, Elizabeth, is Jackie Pickford has been doing a lot of analysis comparing our most recent versions of the data with the Ag Census as well as the common land unit data to compare how much ag is reported, how much of it is crop versus pasture, and how we are comparing with those data sets. Phase 6, as I showed earlier, there's only a small amount of change. So, everything for Phase 6 is based on that first time we mapped in 2013, and then there's only a little bit of change added after that. So, in looking at 2022, our most recent, we agree very well with the census. We'll be going over that in detail at the AMT next week.

Elizabeth Hoffman (in chat): That does help, I did miss part of the presentation so appreciate the recap. Sorry had to refresh to possibly use the mic. I think we will have more questions at AMT so look forward to discussing further there.

Caroline Kleis (in chat): The AMT will meet on May 9th from 9-11. Agenda to be posted. https://www.chesapeakebay.net/what/event/agricultural-modeling-team-meeting-may-2025

Olivia Devereux: I know this all is a lot of detail, and most of you all have heard parts of this before, if not all of it. Here it is all in one place. So, this is your chance to ask some questions, and I'm hoping that in addition to Elizabeth and Tyler's, there are other questions, too.

Auston Smith: Sarah, can you remind me and the group when the revised product might be available for additional review or insight?

Sarah McDonald: Yeah, great question. So, the 56-class data I have in hand now, and we're trying to get it published via ScienceBase, which means it has to go through several layers of USGS review. We're through most of those layers now, which is good. So, I'm hoping the next couple of weeks, you'll get a nice press release saying the data are out. The current holdup is we haven't finalized the model segmentation. Therefore, it's kind of hard to give you acres of a schema that hasn't been finalized, and what we need to summarize by hasn't been finalized. I think, previously, there's a Phase 6 viewer where we kind of show a map of the 12 classes. Maybe, if that's of interest, I can bring that up to my team and see if that's something we are interested in doing again for the Phase 7 stuff, if that's useful for folks.

Auston Smith: I'd love to hear from other folks if that is of interest. My kneejerk reaction is probably yes. But, Elizabeth, I see a hand.

Elizabeth Hoffman: Thanks to Olivia, she supported me asking this here for the good of everyone. But, yeah, I think I do understand how you explain the difference between the Ag Census and using the land use imagery. So, I just wanted to add that I think we look forward to probably talking a little bit more in depth about this at the AMT and, preemptive to that, I'm almost afraid to open up this can, but I just feel it's worth answering the one question Helen had about the potential land uses. One of our questions on the ag side moving forward is how are greenhouses and hoophouses being mapped and identified as a potential land use for urban ag?

So, that's a real big question. So, I think maybe we dig into that at the AMT first, but I do want to preemptively mention that. I think it's a question increasingly being asked, so maybe we talk about it there.
Olivia Devereux: Caroline, can you convey that question to Tom so he's ready at the AMT?
Caroline Kleis: Yes. Thanks, Olivia. I wrote that down.
Sarah McDonald: If I can respond to that really quickly, several folks from Maryland have been communicating with my team about this as well. So, I just wanted to give the land use perspective of this. Currently we are mapping those things as structures because, from the sky, it's in a structure. So, that's what we are mapping. If there's spatial data that allows us to tag certain structures and say this is used for that under that roof, then my team can do it. To my knowledge, I don't think we have that data everywhere, but that's how it appears in the land use just for context for other folks.
Elizabeth Hoffman (in chat): Understand. Yes, this will be a team effort. Curious to explore. Thanks!
Bill Keeling: Some of this is getting into some of what I brought up about cover crops. In particular, in Virginia, our commodity cover crops. We have 100% verification, but every year we have 10-20 thousand acres called "excess" because of the rules and how it's applied to just double crop and small grains and grains. So, what I'm getting at is it appears to us the land use is mischaracterized because we have so much 100% verified acreage being thrown away. Is there any way you guys could look at changing your algorithms and looking at particularly Virginia's commodity cover crops to alter those acreages? Something's got to change. Either we apply that to all cropland or something, but the current system is chronically every year underpredicting the acres for those BMPs, and real implementation on real cropland is being thrown away because whatever algorithms y'all are coming up with says there's no or insufficient acreage. So, I personally do not support the rotations. I think the reporting is generally not using rotations. The WIPs and the planning effort, nobody used them for their planning. So, I think it's way more detail that we actually need for our tool.
Olivia Devereux: That goes right back to that slide Helen showed with the questions when I spoked about how people asked for all that detail, but then it never gets used, and if it were used, it could be problematic. I've shown Auston and Jeff some very specific data from Virginia about the BMPs with permission from Virginia to share the confidential data, just in a screenshare to show them, and they do have such detailed information. I got permission to do it that one time once, but I could do that with Sarah, if I get permission again, so you can see the level of detail they have. I don't think Bill even sees that level of detail, but it really does make the case. So, I think that could be helpful, and it's not just Virginia. It's just we were working with those data.
Bill Keeling: Well, I would characterize it as there were multiple states at the AMT arguing we do not need this. There were others, primarily academicians, that were arguing we did, even though no one uses that level of detail in their planning. So, there was no consensus to change things. So, that, I guess, means we're stuck with using the rotations instead of the cropland like we used to. I mean, we have a regionally calibrated model, and that really means we can differentiate between groups of counties, not within a county, particularly when most of our inputs are at a county scale or larger, like fertilizer being a state number and manure is at a county. Well, I'm sorry, but we don't really manage things at a scale with manures and fertilizers, so it kind of doesn't make sense to push it down to such detailed levels and think that what we're going to produce, particularly at a catchment scale, is meaningful. Sorry to rain on you all's parade.

Sarah McDonald: It's useful feedback. One thing that I'm hoping that we're able to highlight at AMT, looking at a lot of the comparisons Jackie's done thus far, is with a lot of the excess conversations that we've had, is that this is all built off that first time we mapped the data in 2013. Everything from Phase 6 is based on that original map. So, one of the things we're going to show is our new map that will be used for Phase 7 and how that relates to the Ag Census and Common Land Units, versus what we used for Phase 6. Hopefully what we're showing is a stark improvement that will hopefully address a lot of the issues and, so far, looking at the most recent data, it appears it will.
Dave Montali: I just wanted to add on to Bill that the chronic commodity cover crop cutoff occurs here as well. It's not as extreme as in Virginia, but annually we question that. The problem is that it's restricted to double crop and small grains, and what I've learned in looking at it is in certain regions that stuff is fed to the animals. The producer doesn't harvest the grain for sale, so they don't report that way on the Ag Census. So, there just needs to be one of two simple paths to fix it. I think it's bigger than land use. I think it's related to Ag Census reporting and our manipulation of land use, but you could allow it to go on all crops and it'll make the problem go away. Or, if you didn't want to do that, you could say when we have these problems with excess, we just go up to the next available scale in CAST and apply them there and get the credit for them. But, this is one thing where the implementors are reporting to the specifics, and it hurts. That kind of happens in a number of things. You get too specific, I put it here, I use this type of cover crop, it just magnifies that issue where there could be a discrepancy in CAST saying I don't have those kind of acres to give to you, so I have to cut it off. I guess the bigger question is who is dealing with fixing the excess problem in whole when we go into Phase 7? Is it this workgroup?
Bill Keeling: I don't know how it can be, Dave, when some of this stuff was set by expert panels or interpretation of expert panels. The cover crop expert panel, they recommended that commodity be applied to all available, but then later there was a rule that said, no, this can only be applied to these two. So, there's a contradiction within the expert panel report itself. But, if the goal of the tool is to reflect management actions and the tool keeps throwing away large amounts of what we are doing, then we are failing our goal.
Dave Montali: I agree. I'm with you on this one. I mean, we know what it is and where it is. It did happen. It is verifiable more so than on some other things, yet it gets cut off.
Olivia Devereux: So, Dave, in response to that, I think Jessica Rigelman who's not available for this meeting, has been reaching out to people individually. She's been combing through the history of BMP reporting and is just checking a couple of numbers because that is responsible for some of the excess. I don't know if she's reached out to Samuel of if the issues were in other states, Auston is probably better up to date on that, but I know that's been one part of the effort in addition to Bill's proposal from last month.
Auston Smith: Yeah, it's not something that we've reached out on currently, but over the summer, Jess and I and others at the Bay Program office are going to be trying to help suss out and determine where some of these excess issues can be examined further to try and alleviate the problem.
Bill Keeling: Yeah, and I'm supposed to get 10 minutes at the next AMT to introduce at least in the animal agriculture, some of the excess issues. You know, what good is a composting system if 90% of it is considered excess or half, roughly, of your animal waste systems are excess? Chronically, we've got real big problems in the animal sector more than others. But, again, the point is for us to be gauging what our management actions are doing, and if we're having to

throw away half, or 20%, or 5% even, we're not doing a good job of producing a tool that's actually doing what we want.

Tyler Trostle: Absolutely agree here with Dave and Bill. This is more directed towards Sarah. I was curious if there was a way that we would be able to see or visualize these changes from Phase 6 to Phase 7, and those potential contrasts or what might be going on, if there's like a map viewer or something. I know we would be very interested in seeing specifically croplands, grains for us, and how they're being changed. I'm sure maybe Bill would appreciate if he could see ag lands being pastured and stuff being changed. I was just curious if there was a way that we could visualize this or if you have some sort of map viewer or something right now.

Sarah McDonald: That's a great question. We do have a map viewer for the high-res land use that will be out when we release the data in the next couple of weeks, but that's not really the schema that we use for this. So, one thing that we can do is there is the existing Phase 6 viewer that has the 2013 land use 12 classes. We could update that potentially and have maybe a side by side of the Phase 7 rollup that will show the improvement in the mapping of crop versus pasture as a whole. That will not get into breaking down to small grains, etc., because that happens at the CAST level at a segment level. When that information is available and has been summarized, we could produce that, potentially, but I'm not familiar with the timeline on that end. So, I don't want to promise posting that anywhere.

Tyler Trostle: Even the stark contrast between what was and what is croplands in general would be very helpful for us. So, I appreciate that. Thank you.

Elizabeth Hoffman (in chat): MD also has experienced this. 100% verified AWMS addressing animal populations that the model does not think exist in the county.

Olivia Devereux (in chat): Here is the map viewer for CAST, Phase 6. https://gis.chesapeakebay.net/mpa/scenarioviewer/ It is not exactly what everyone wants, but is a starting point.

Scott Heidel (in chat): completely agree on the systemic issue of excesses and that brings more clarity to why monitoring of local water quality is so important as a check to the model

Action: WTWG members with questions on the aggregation of the High-Resolution LULC data to the Phase 7 Land Use classes and the ways in which this information is used to inform CAST should reach out to Sarah McDonald (smcdonald@chesapeakebay.net) and Helen Golimowski (helen@devereuxconsulting.com). Members interested in this discussion are also encouraged to attend the Agricultural Modeling Team (AMT) meeting on May 9th.

11:00 **Recap of Actions and Decisions** (5 min).

11:05 **Adjourn**

Next Meeting: Thursday, June 5, 2025 from 10:00 AM – 12:00 PM.

Participants

Auston Smith, EPA
Caroline Kleis, CRC
Olivia Devereux, Devereux Consulting
Angela Jones, DoD
Norm Goulet, NVRC
Bill Keeling, VA DEQ
Samuel Canfield, WVDEP
Joshua Glace, Larson Design Group

Megan Thynge, EPA
Kevin Mclean, VA DEQ
Cassie Davis, NYS DEC
Helen Golimowski, Devereux Consulting
Mark Dubin, UME/CBPO
Matt Kofroth, Lancaster County Conservation District
Holly Walker, DNREC
Tyler Trostle, PA DEP
Emily Dekar, USC
Alicia Ritzenthaler, DOEE
Joseph Schell, DNREC
Scott Heidel, PA DEP
Christina Lyerly, MDE
Eric Hughes, EPA
Jessica Shippen, TJSWCD
Dylan Burgevin, MDE
Ashley Hullinger, PA DEP
Sushanth Gupta, MWCOG
Sabine Miller, MDE
Bailey Robertory, MD DNR
Dave Montali, Tetra Tech
Elizabeth Hoffman, MDA
Ruth Cassilly, UMD/CBPO
Sarah McDonald, USGS
Eugenia Hart, Tetra Tech
Jeremy Hanson, CRC
Jackie Pickford, USGS
Arianna Johns, VA DEQ
Tom Butler, EPA

Acronym List

AgWG: Agriculture Workgroup
CAST: Chesapeake Assessment Scenario Tool
LULC: Land Use/Land Cover
LUWG: Land Use Workgroup
PA DEP: Pennsylvania Department of Environmental Protection
QAPP: Quality Assurance Project Plan
USGS: United States Geological Survey
WTWG: Watershed Technical Workgroup