Agricultural Modeling Team

October 9th, 2026
9:00AM-11:00AM

Visit the meeting webpage for meeting materials and additional information.

Purpose: To update AMT members on the status of model development, its impact on the AMT's anticipated data review, and to go over the current expectations for the Phase 7 AMT review at subsequent meetings.

Summary of Actions & Decisions

Action: AMT members are encouraged to attend and track upcoming Clean Water Goal Team and Modeling Workgroup meetings over the next few months, given relevant Phase 7 decision-making.

Action: The AMT will work to respond to the Clean Water Goal Team request to develop Workgroup Workplans. AMT staff will compile a high level bulleted list of activities the group will pursue, and will incorporate the responsibilities outlined in this presentation. Please reach out to Tom (Butler.Thomas01@epa.gov) if there are other things you would like to see documented in our workplan.

Post Meeting Note: As of the October 23rd deadline for comments no feedback was received. As such we have assembled our workplan items list on the October AMT page for review.

Action: A visualization tool will be made available to help aid in the review of Model inputs on October 13th. AMT staff will follow up with the group once this viewer has been posted.

Post Meeting Note: These visualizations have now been posted to the CAST Model Documentation Page. You can view them here.

Action: AMT staff will work with Jess Rigelman, J7 LLC, to produce a list of key changes from the Phase 6 to Phase 7 Model that are relevant to the AMT.

Post Meeting Note: This is currently under development. We will follow-up with a draft once it is complete.

Meeting Minutes

I. **Introduction & Announcements**
Lead: Zach Easton, VT; Tom Butler, EPA

The AMT is on track to review Phase 7 data; however recent partnership decisions have been made which have implications for the timing of this review. We highlighted several areas where members can see firsthand where these decisions are being made.

Several upcoming forums include:

- October and November Clean Water Goal Team (CWGT) meetings
- October and December Modeling Workgroup meetings

Actions:

1. AMT members are encouraged to attend and track upcoming Clean Water Goal Team and Modeling Workgroup meetings over the next few months, given relevant Phase 7 decision-making.

II. **General Updates**

Lead: Tom Butler, EPA

We went over the current expectations for the Phase 7 AMT review. This was designed to ensure that the existing review expectations match the newly required partnership workplan structure. Feedback was welcome to help formally codify what is expected of members during the review process. We also provided context for relevant meetings across the partnership regarding model development which will have an impact on data availability for our reviews. In addition to walking through activities on the AMT's workplan, Tom also provided an overview of recent relevant Partnership decisions at the CWGT, MWG, and LUWG, and also flagged the upcoming data input visualizations to help aid in Model review.

Actions:

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    a. **Post Meeting Note:** As of the October 23rd deadline for comments no feedback was received. As such we have assembled our workplan items list on the October AMT page for review.
2. A visualization tool will be made available to help aid in the review of Model inputs on October 13th. AMT staff will follow up with the group once this viewer has been posted.
    a. **Post Meeting Note:** These visualizations have now been posted to the CAST Model Documentation Page. You can view them here.
3. AMT staff will work with Jess Rigelman, J7 LLC, to produce a list of key changes from the Phase 6 to Phase 7 Model that are relevant to the AMT.
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Discussion Notes:

Joseph Delesantro: The goal of the Modeling Team is still to provide the '91-2000 calibrated Watershed and Main Bay Models in February. So, I think that is on the existing timeline that that would be available, and we'd begin Partnership review of the Model in February. Our plan is that we would still have the '91-2000 Model available for potential partnership review in February. As Tom said, the degree to which the Partnership and the Modeling Workgroup review that Model, versus saving the time and effort in order to perform a more thorough review of the final Model with the new hydrologic period is still up in the air and requires more discussion.

Tom Butler: Thank you, Joseph. I appreciate the add-ons there.

Jess Rigelman: I just wanted to say that the change in the hydrology period makes a difference on the loads, but it does not really make a difference on the inputs, which is everything that this group has been working on (manure, fertilizer, etc). So, I would encourage you to take a close look at that sort of stuff when they come out. If there are issues with the inputs and they need to be addressed, those also affect the load, but they aren't affected by this hydrology, so it's worth your time to review those thoroughly.

Tom Butler: Thank you, Jess. That's good information to have.

Auston Smith: I went over the Model review responsibilities at the previous in person CWGT meeting but, in the coming weeks, we are hoping to send out a more formal email with the roles and responsibilities for each workgroup. The AMT is leading the effort, and one of the AMT's responsibility bullets is keeping the AgWG up to date. Just wanted to say that in a different way.

Tom Butler: Thanks, Auston, good to hear it in as many ways as possible.

Andrew Leight (in chat): Tom: After we see tableau, is there a process to suggest which input data for AMT to review? Did you mention a "concerns form"?

Tom Butler: Auston has made a tool that is intended for a different purpose that people might have heard about. For this review (review of Model inputs/data visualizations) it's kind of what we've been doing for the last few years. There is not a formalized form that we have. You would be looking at a distribution list/point of contact or something of that nature that you'd be emailing to, at which point we'd be filing those questions to the relevant parties. Jess might be getting a bucket of questions at one point, and we'd be trying to monitor them that way. Again, we want to be cognizant of the time suck this has for Jess, Joseph, Gopal. So, there isn't a formalized way, but if you had questions, we'd want to see emails. For example, if you're looking at an application and you say, well, the application here in this year is weird, what's going on there? Then we'd be looking at that and trying to dig through the intricacies of what was happening in that area, specific land use, the load source, what the application sources would be, and trying to figure that out through the AMT. If we become completely inundated, we're going to have to pivot and come up with something different. As of now, that's kind of the process we'd expect. If you have questions, send them in, and we will try to filter and answer them as they came in. If there were recommendations or things people thought would be better, I am open to hearing them.

Alisha Mulkey (in chat): So we will also get a link to Auston's intake form?

Auston Smith (in chat): Yes Alisha eventually, but not for AMT input review!

Ken Staver: Is there a summary document of the significant changes going from Phase 6 to Phase 7?

Tom Butler: I don't think there is a single source for those. It would be looking through the documentation and trying to feel that out. If it's useful, I think that can be provided. Something to say that these are the things AMT did for the Ag Sector. For the whole model, I don't think anything exists.
Ken Staver: The whole model would be good, but the ag sector is all I have the right to ask for. Highlights of the major changes seems like something that should be in front of people's eyes.
Caroline Kleis (in chat): AMT-specific, we do also have a document of actions and decisions: AMT Phase 7: Log of Actions and Decisions
Tom Butler: Caroline has put in the link to the actions and decisions log. But, you are asking for bullets, not to dig through that, if I am correct.
Ken Staver: Right. I didn't know if something already existed or not.
Joseph Delesantro: I think Ken has the right idea. There's a lot of things in the Phase 7 Model that are being carried forward from the Phase 6 Model. The idea has been that we would be best off concentrating our time reviewing the new stuff, rather than the changes, and rather than redoing the review of a lot of the decisions that were made for Phase 6 and reviewed for the Phase 6 Model. I think the logs of actions and decision might be a good place to start putting together that bulleted list of what's changed. Forgive us if we forget a thing or two, but maybe we could create a sort of living document.
Tom Butler: Jess has given me at least the bones for this. So, I have probably the closest thing that exists on that. It might require a few changes.
Jess Rigelman: Yes, you do have the start of that list but obviously that only contains things that are relevant to you and this group. I have a much larger list that goes across sectors that, again, still might not be comprehensive. But, obviously, I've had to keep track of it all for my own stuff as well as for getting it to the developers. So, I can take the list I've given you, Tom, and expand on that. I do think that Joseph's idea of looking through the minutes and decision trackers would be a good idea. So, maybe I can work with Caroline and the staffers on that.
Tom Butler: Good points all around. We can put that as an action item to work towards.
Auston Smith: Tom alluded to this other intake form that I will be sending out. Based on the Model review pushback on the timeline, I haven't sent out that intake form, nor will I until probably a month before that formally begins. I presented on this at the CWGT, and it's the comment aggregation team (CAT), and it has a few leading questions like your name, organization, overall comments, level of priority, etc. What Tom has alluded to for the AMT will be a little less formal. It will just be that you send your questions to these email lists, and we will respond to them in that way.
Tom Butler: The AMT has been reviewing input data and the components that go into CAST for longer than any other group that I am aware of in the Partnership, in terms of the decisions we've put in. Our focus has been solely on that; so, we don't deal with some of the other important things that other groups deal with from a policy perspective. But, we have had the benefit of being able to focus more on the data. So, we've had a leg up in what we've been able to do. We're beating the formal review in which Auston's tool would be implemented by several months. So, that's why we don't have access to that form yet and comments are being accepted informally by email. So, I can register as an action item that we will be looking at that list.

Caroline Kleis (in chat): Auston's presentation on Model review from the September CWGT meeting: https://www.chesapeakebay.net/files/documents/Day-1.11_Phase-7-Flaw-Review-and-Workgroup-Roles_CWGT…

A.K. Leight: There is a partnership conversation going on in the Watershed Technical Workgroup about the frequency of CAST model updates. The reason I am bringing this up here is when the Tableau is shared with us and it has input data, one of the things on my mind is how some of our ag input data is handled in CAST. So, for example, the inorganic fertilizer estimates and how those are estimated in between CAST Model updates and us providing new sales data to the Partnership. My request is if it's possible to include in the input data some of those types of things where there are estimates moving forward, that would be helpful.

Auston Smith: Correct me if I am wrong, but what you are asking is that in the proposed options the Watershed Technical Workgroup sends to the Clean Water Goal Team, we include a more specific call out for state supplied fertilizer data sets? That would be fine by my understanding. I think that generally we would just want to say that on the Workgroup meeting and get people's thoughts on that. You might have seen the tentative decision language for the Watershed Technical Workgroup that Carolin sent out yesterday, and that includes the land use call out, ag census call out, and then it's updated BMPs and fertilizer data sets as available. So, if we want to make that bullet far more specific in both of the options, we can make that more clear. Am I getting that request right?

A.K. Leight (in chat): I am interested to see the projections of inorganic fertilizer given the data already in hand.

Tom Butler: The Watershed Technical Workgroup is another one of these work groups that's above us, and they make very technical decisions on how to implement BMPs, how things work for the model based on how people have interpreted them, etc. One of the requests that they've had is to provide recommendations for how often the data goes into CAST for updates. So, we're doing a phase change right now. Our whole group's identity is based around Phase 7. Between phase updates, there are versions of CAST based on the year. You might have an updated forecast with all the data in 2035, and you might call that CAST 2035, still Phase 7. So, I think that discussion that Auston's having at that group level is how often should we be putting in that new information? We have land use information, we have census information coming out, but then there's other information that we might be getting at a different latency. A.K. mentioned fertilizer. The fertilizer data that we get has really been essentially me going out to the state chemists and saying, do you have new data? Once we get that, we can't necessarily put it in until we update CAST. So, for some of the jurisdictions who might not have it, that's fine. We've put in these new processes to measure the projections. We would be able to show the projections that we have, which are really based on that crop yield and the application goals for the yields in that last known year of information we would have gotten. So, for the recommendations about how often we wanted to update that information, contingent in that would be the state fertilizer data. Say we've gotten state fertilizer data in this example through 2033. We've got a two year latency. What are we doing with that? What are we not doing with that? How do we want to deal with information that we'd be sitting on that we wouldn't have the chance to put in? Could we maybe list some of those inputs more specifically? That's how I've interpreted it. That's how I think Auston interpreted it. We could certainly have a list of those types of items together. The projections/actual methods for some of these jurisdictions are detailed in the documentation. In

other words, in a scenario mode, we might not have any new information after 2022 or 2024. So all of them are based on that percentage of application goal. But then in other states, there's actually kind of a projection method because they stop reporting data to AAPFCO or collecting it through their state chemist. So, those things would be in the documentation. As we had different versions of the model going through time, it would obviously be based on the scenario information there. So I don't know if that's helpful or not.
Joseph Delesantro (in chat): How various inputs are projected are generally detailed in documentation. We currently expect documentation will be available for review in February. (but again, uncertain timelines)
A.K. Leight (in chat): Thanks Joseph, that will be very helpful
Auston Smith: A.K., do the bullets for our proposals in the WTWG look ok to you, or would some added clarity be beneficial?
A.K. Leight: I think Joseph has pretty much addressed what I'm asking for, and I'm not sure we need more clarity on that bullet, but I'll give that some thought. It just informs the discussion about how often we want to try to update the Model and how far we want to live on those projections given the current data that's in hand. I think we've gone deep enough on this topic, but I appreciate your time,

III. **Wrap-Up**
Lead: Zach Easton, VT

IV. **Adjourn**

Next Meeting: December 11th , 2026, from 9:00AM-11:00AM

Attendees:

Tom Butler, EPA
Zach Easton, VT
Caroline Kleis, CRC
Auston Smith, EPA
Alisha Mulkey, MDA
Andrew Leight, MDA
Cassie Davis, NYSDEC
Curtis Dell, USDA ARS
Scott Heidel, PA DEP
Jess Rigelman, J7 LLC
Krista Crone, PA DEP
Joseph Delesantro, Koniag
Cass Klingaman, NYSDEC
John Lancaster, PA DEP
Hunter Landis, VA DCR
Seth Mullins, VA DCR
Joseph Schell, DNREC
Alex Soroka, USGS
Suman Budhathoki, UMCES
Denise Uzupis, PDA
Tad Williams, VA DCR
Ken Staver, UMD
Tamie Veith, USDA ARS