



**Draft Minutes
Wastewater Treatment Workgroup (WWTWG)
Teleconference
Tuesday, September 13, 2016, 10:00 AM – 12:30 PM**

Summary of Action and Decision Items

DECISION: The WWTWG approved the June meeting minutes as-written

DECISION: The WWTWG approved the August meeting minutes, pending the addition of a header, and clarification in instances where the Chair was speaking on behalf of Wastewater Treatment Plant Operators as opposed to speaking as the Chair of the Workgroup.

ACTION: David will share MDE's comments on the Attenuation Expert Panel's report with the WWTWG.

DECISION: The WWTWG approved the technical recommendations from the Onsite Wastewater Treatment Systems Nutrient Attenuation Expert Panel report for use in Chesapeake Bay Program's Beta 4 version of the Phase 6 Watershed Model. The Modeling Workgroup will be asked to approve the methods for how the Panel's technical recommendations will be applied in the Model. Jurisdictions will have the ability to continue to evaluate the application of the recommendations within the Phase 6 Model, and any fatal flaws can be identified during the Chesapeake Bay Program Partnership's Phase 6 Model fatal flaw review period in early 2017.

ACTION: During the next WWTWG conference call there will be continued discussion of the E3 scenario. Additional information will be provided to aid in the discussion, including a description of how the urban and agriculture sectors are revising their E3 scenarios, additional evidence to support the proposed change in the wastewater E3 scenario, and evidence to support holding the wastewater E3 scenario the same as it was for the Phase II WIPs.

Welcome, Introductions, and Announcements—*Tanya Spano (Chair)*

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Onsite Systems Nutrient Attenuation Panel Approval – Vic D'Amato, Tetra Tech

The WWTWG was asked to approve the Onsite Wastewater Treatment Systems Attenuation Expert Panel's report and recommendations for inclusion in the Phase 6 Watershed Model.

Discussion:

- Greg Busch (MDE): MDE just recently sent in our comments. We are in a unique position because our previous modeling approach for attenuation is a little different than that of other jurisdictions. From our perspective, I think it necessitates a little additional caution on our part to make sure it represents a spatial improvement over what Maryland did in the past. We are

offering tentative approval, but will be looking to have answers to our comments/questions so we will be able to offer formal approval. On the soil classifications: we want to see how those will be determined and applied in the Phase 6 Model.

- D'Amato: We can add more detail to better describe how we did the classification. I think we used SSURGO soil textural classification. The Chesapeake Bay Program applied the classifications recommended by the Panel to create an input data set.
 - Ning Zhou (VT): SSURGO spatially defines the dataset, so we applied it against land-river model segments to come up with those rates.
- Busch: I think there are some areas in the states where we have about 12 inches of sand over top of clay. From my perspective, the point in the soil column you define as the discharge point could define the rates. A spatially defined approach would allow us to pinpoint areas where there is outsized inputs from septic, but if you go from sandy soil to clay or vice versa, it could really drive policy changes. It would be important to tie soil data into some of the actual septic system design data to make sure we are focusing on the right thing.
 - D'Amato: The infiltrative surface depth can vary. Using the textural data is going to be an average. I know there is a lot of variation, so it is a good point. I think we need to define where the data we used came from. I support your implication that getting better characterization data would be great, but we need to defer to a backup assumption for states that don't have those data. If there is a mechanism for Maryland to supplement the Panel recommendations with system-specific information, I'd support it.
- Busch: I think it would be a good approach but don't know how it would work out based on the tight timeline for the Phase 6 Model. I'm concerned looking at this report because you showed a pretty good relationship between nitrogen attenuation and the distance from receiving waters, which supports Maryland's past methods. I would want to have the same level of confidence that if we go to this approach, we feel comfortable with the assumptions going into it.
 - Dave Montali (WV DEP): I think your point is good and it would be a good topic for the Modeling Workgroup to discuss during their call on September 22nd. I would want to describe how we assigned soil texture to the land/river segments. For zone 3, we all know that the attenuation of nitrogen is a function of distance and reaction rates. Would Maryland be able to take the Panel's work and break systems up by distance to receiving waters within a land/river segment?
 - D'Amato: I think the panel would have loved to have the physiographic region breakdown and then also add in actual location to surface water. The issue is that data doesn't exist across most of the watershed. We generally agree distance to surface water is a big piece of the equation, but we can't generalize across the watershed.
- Busch: They are two ways of looking at the attenuation problem and they aren't mutually exclusive. They have different strengths and weaknesses.
 - D'Amato: Combining the distance data you have with the physiographic differences, you could improve your approach.
- Montali: The timeline is tight. We have a September 30th deadline, but if Maryland works over the next half year and sees that they can improve the approach, there is a mechanism in the fatal flaw period to change it.
- Busch: I think a specific approval for use in Beta 4 version of the Phase 6 Watershed Model is an appropriate stance.

ACTION: David will share MDE's comments on the Attenuation Expert Panel's report with the WWTWG.

- Montali: Is it possible for Maryland to be in the "approve with reservations" category, knowing you have an opportunity at the Modeling Workgroup to say no at that point?
 - Busch: I am fine with that.

- Busch: Can we get the spatially specific dataset?
 - Zhou: I have it in the SPARROW format and can provide it to you.
- Montali: The SPARROW catchments are smaller than the land/river segments. Do we need to aggregate up to the land/river segment scale?
 - Zhou: We can aggregate them.
- Janice Vollero (PA DEP): We've been discussing this report and we sort of agree with some of what Maryland says and would like to reserve our right to question the Model output.
 - Montali: If we don't reach consensus at the Modeling Workgroup, we would need to work it back through this group.
- George Onyullo (DOEE): I would align myself with the sentiment that we approve the report conditionally, knowing the position Maryland and Pennsylvania noted. We are doing it to ensure that we keep the process moving. Those comments should be looked at by the Modeling Workgroup. We have concerns we don't know how to deal with, but are happy to move this forward, subject to new information that comes in the future.
- Montali: The question is, what does the group think about the technical merit of the report? The next question is how does it get applied in the modeling tools? The first question is for the WWTWG, and the second is a subject for the MWG.
- Spano: Are there any objections with approving to Attenuation Panel report with the noted caveats?
 - No objections were raised.

DECISION: The WWTWG approved the technical recommendations from the Onsite Wastewater Treatment Systems Nutrient Attenuation Expert Panel report for use in Chesapeake Bay Program's Beta 4 version of the Phase 6 Watershed Model. The Modeling Workgroup will be asked to approve the methods for how the Panel's technical recommendations will be applied in the Model. Jurisdictions will have the ability to continue to evaluate the application of the recommendations within the Phase 6 Model, and any fatal flaws can be identified during the Chesapeake Bay Program Partnership's Phase 6 Model fatal flaw review period in early 2017.

Phase III WIP Planning Target Methodology – Ning Zhou, VT

The WWTWG continued to discuss the Phase III WIP Planning Target Methodology, specifically, the E3 Scenario, No Action Scenario. Ning discussed the rationale behind the proposal presented during the August WWTWG call and asked for workgroup feedback. For information on those Model scenarios and how they were simulated in Phase II, please refer to Section 12.5.6 of the following documentation: https://archive.chesapeakebay.net/modeling/P5Documentation/SECTION_12.pdf

Discussion:

- Montali: To better understand the rationale, the newly proposed numbers are being recommended by Dr. Cliff Randall?
 - Zhou: That is correct.
- Busch: Are those numbers tied to a specific treatment technology, or just the general functioning of the treatment plants?
 - Zhou: It is based on general performance.

Tanya introduced Charles Bott. Charles participated in the original STAC workshop that helped t define the E3 Scenario for the Phase II WIPs. He works for Hampton Roads Sanitation District as director of water technology and research and is adjunct faculty at Virginia Tech and Old Dominion.

- Bott: I think this conversation needs to be had differently. In the scope of the Clean Water Act, we talk about best available technology, which is a concentration-based level of achievement, considering technical and economic feasibility. I don't know why we diverged from doing that here. Discharge limits must be attainable because operators suffer if that is not the case. Violations are unacceptable to governing bodies, so we always need to operate a little below discharge limits. As we go to lower and lower limits, small process upsets become more critical. We have to think about regulatory stability and affordability. Utilities are already planning for backstops. If there is a change in the numbers, it affects backstops and affordability concerns. Changes like this are a big deal. This is what utilities have to plan based on, and we need to consider that. Even the no action concentration is changing. We see 28-30mg/l in nitrogen from some plants. Wastewater is getting more concentrated and we need to recognize that. For nitrogen specifically, as we go to lower and lower concentrations, we have less uncertainty in getting to the limits. The flow and load the plants are receiving relative to the plants design flow and load impacts its ability to do better from a concentration standpoint. It is about capacity. A lot of plants can meet concentration limits because they are operating at less than design flow. Water temperature really matters, so plants in Florida should not be compared to those in the Chesapeake Bay watershed. Last, I think we all recognize new regulation brings about new innovation, but the place this is headed involves leaving ammonia behind. A lot of research associated with developing those technologies show the importance of leaving 1mg/L NH_3 behind. I think we need to think about where the technology innovations are headed, which is not lower concentrations, but instead doing removal in more sustainable fashions. To get lower concentrations means applying technologies to get to drinking water standards. I don't think that's where we want push our utilities. On phosphorus, more plants are at .3mg/L annual average. Two plants have a .1mg/L monthly limit, but that is it. Not a lot of plants are less than that. As we look around us, .03-.05mg/L limits are being contemplated across the country, but I think that sounds crazy in our region because of costs. It really comes down to how much they want to spend. We can get to really low levels but it is expensive. I think we need an open mind about how to specify these values. I think a workshop is needed and we need to dig into this a lot more. A lot more analysis and discussion is needed.
- Spano: Taking my hat off as chair, I'd like to add to Charles' points. This is important and I would like to frame this as some analysis that will support some of what Charles said. I did a quick review of the major plants Ning used for his analysis and compared 2015 flows to capacity and they were operating at 58-73% of design capacity. For those who don't operate plants, if you have all that tankage, you get increased detention time, which is a huge issue. Even with boundary conditions, the definition of the limit of technology (LOT) has flaws in it, and what we considered LOT actually has some fundamentals associated with it that are not properly reflected in what is being proposed here. What is missing are the caveats Charles identified. Just because we can reach 3mg/L for nitrogen doesn't mean that is the LOT. I think Charles is describing a definition of wastewater treatment that is threatening to no longer be wastewater treatment. In terms of equity across sectors, I don't think it is fair to push wastewater down to that level. It may have been 15 years ago that we had these discussions, but plants are just now implementing ENR processes. They haven't been doing it for 15 years.
- Onyullo: I think changing the value of LOT should not be made a trivial issue. The primary considerations are whether the technology is available to go that low and whether we can afford it.
- Montali: In the past, we said LOT is the same as the E3 scenario and I don't even know if we want to use that assumption again. Even though E3 is part of the wasteload allocations (WLA) to facilities directly, it is part of establishing planning targets. You can evaluate E3 without changing the No Action scenario. If you change those, you mess with planning targets in the jurisdictions.

The changes define how much effort you need from other sources. My gut is to leave it alone. If we do anything, we ought to be increasing it, which I don't think we should do trivially. If we do a STAC workshop, the results will come in after we need to make decisions about the Midpoint Assessment and would really define the scenarios for a Phase 7 Model. E3 should be the best available technology that is economically achievable.

- Spano: In terms of phosphorus technology, the cost aspect is not supposed to be part of E3, but what should be considered is in lower P numbers, there are negative environmental impacts because of the creation of solids, use of electricity and greenhouse gas effects that we didn't have to consider before. Even excluding costs, if you apply lower P limits, there are environmental consequences that are constraints.
- Busch: Does this decision need to be made by October?
 - Spano: Decision on E3 needs to be decided by October for model runs. The workshop will not help us address these now, but it can help us address this responsibly moving forward.
- Busch: If this goes for decision in October, can we get a write-up a few weeks prior with a justification for the 2mg/l limit? Is there an actual technology being cited here or is it statistical evidence of plants we've seen operating there in the past?
- Montali: The time is short and I don't think we should trivially change E3. We shouldn't change it unless we do an evaluation of No Action at the same time.
 - Schepens: I agree. If we write a permit for 2mg/L, they need to operate under that number in order to avoid violations.
- Tony Hummell (DE DNREC): Basing all of this proposed LOT on 20% of plants is pretty weak in my estimation, even if you go to 35% taking flows into account. Our facilities in Delaware are pretty small and these types of guidelines have a way of developing into something more in the long term. Delaware is against this proposal.
- Jeff Sweeney (EPA, CBPO): The WQGIT wants draft runs in October, but I would suggest looking at what other sectors are doing for their E3 scenarios. You can't consider cost at all in defining this scenario. Other sectors are saturating 100% of their land with the most effective BMPs we have and are taking nutrient loads down to almost pristine forest conditions, which would be similar to taking wastewater treatment down to almost drinking water conditions. This E3 scenario is a reference to what the technology could do if cost was no object. I think you really need to think about what the limit of technology really is and weigh it against other sectors. They are going way beyond what they did in the Phase II WIPs because they have added dozens of new BMPs with higher efficiencies. I agree with Dave that it is important to also consider no action.
 - Spano: That is important context. Everyone is looking at e3 and it is supposed to be a stretch, and the economics are not supposed to define E3, but there are other considerations. My gut instinct is that there is enough information here for Ning to go back and see if he can provide greater rationale for the proposed E3 scenario beyond what is in this briefing paper. I think there is also a need to present the alternate perspective.

ACTION: During the next WWTWG conference call there will be continued discussion of the E3 scenario. Additional information will be provided to aid in the discussion, including a description of how the urban and agriculture sectors are revising their E3 scenarios, additional evidence to support the proposed change in the wastewater E3 scenario, and evidence to support holding the wastewater E3 scenario the same as it was for the Phase II WIPs.

Updates and other business

- Biosolids Task Force Update – The Task Force is meeting later today (September 13th) to discuss potential adjustments to how biosolids were simulated in the Beta 3 version of the Phase 6 Watershed Model. An update will be provided once the Task Force has reached a decision.
- Point Source Data Project – The proposed acronym for the data system is WAWA. If the workgroup has feedback on the acronym, please contact Ning.

Adjourned

List of Call Participants

Name	Affiliation
Tanya Spano (Chair)	Metropolitan Washington Council of Governments
Ning Zhou (Coordinator)	Virginia Tech, CBPO
David Wood (Staff)	CRC, CBPO
Dave Schepens	DE DNREC
Tony Hummell	DE DNREC
George Onyullo	DOEE
Adion Chinkuyu	DOEE
Jeff Sweeney	EPA, CBPO
Joel Blanco	EPA, R3
Ann Carkhuff	EPA, R3
Greg Busch	MDE
Rashid Ahmed	NYSDEC
Janice Vollero	PA DEP
Dharmendra Kumar	PA DEP
Matt Richardson	VA DEQ
Angela Redwine	VDH
Dave Montali	WV DEP
Charles Bott	HRSD
Nasser Ameen	MWCOG
Lana Sindler	MWCOG
Vic D'Amato	Tetra Tech
Amit Pramanik	WERF