



## Chesapeake Bay Program Wastewater Treatment Workgroup (WWTWG)

### Meeting Summary

Thursday, January 23<sup>rd</sup>, 2025

10:00 AM to 11:00 AM

[Meeting Materials](#)

### Actions and Decisions

**Decision:** The WWTWG approved the August 2024 and October 2024 meeting minutes.

**Action:** The February meeting was canceled given the conflict with the February 27<sup>th</sup> Management Board meeting. Caroline will follow up with the group about the March meeting date as it may need to be rescheduled to avoid additional conflicts.

**Action:** Joseph will send out an email to the group with the specific information he is requesting regarding exfiltration data. If you have any additional information or feedback, please email Joseph ([jdelesantro@chesapeakebay.net](mailto:jdelesantro@chesapeakebay.net)).

**Action:** Caroline will send a poll around to members of the CSO and SSO/Exfiltration small groups with potential times to meet as small groups in February or March and schedule meeting times that work best for each group. If you'd like to join either of these small group meetings, please email Caroline ([Kleis.Caroline@epa.gov](mailto:Kleis.Caroline@epa.gov)).

**Action:** Ivy will add Virginia's perspectives to her documentation for not pursuing the boat pump out BMP and will share the final document with Caroline to distribute to the group. The group will then decide whether more formal documentation is necessary.

**Action:** Members with any information or points of contacts for biosolids work should email Emily ([emajcher@usgs.gov](mailto:emajcher@usgs.gov)).

**Action:** Once Emily compiles available information, she will bring it back to the group to see if it matches where workgroup members would expect biosolids to be applied.

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### Meeting Minutes

10:00 **Introduction and Announcements** – WWTWG Co-Chairs, Jamie Heisig-Mitchell, HRSD & Justin Carl, Alex Renew (10 min)

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10:10 **Small Group Status Updates** – Various (30 min)

Following the workgroup's May meeting, three small groups were formed to delve into relevant wastewater Phase 7 model topics presented in May. Each small group met in July and September

and provided an update at the October meeting. A volunteer from each group shared a brief verbal status update of any work that has occurred in the interim. Additional time was reserved for questions and discussion.

Exfiltration and SSO data – Jamie & Joseph Delesantro, EPA ORISE

- Jamie is working at HRSD to gather the additional information requested so that Joseph is able to pilot it with them. Jamie also reached out to an additional wastewater utility to see if they could get that information.
- Joseph Delesantro presented on the work done since the last meeting and the material that he hopes to share soon to start refining the preliminary exfiltration model and testing.
  - In October they identified a preliminary model structure. Joseph then spent some time expanding the literature search to focus more on the primary parameter of that new model structure, which is the percent exfiltration as a function of the treatment volume or dry weather flow from the actual treatment plant. The intention is to create a model that has a low data requirement and flexibility in the data.
  - Joseph then moved forward with testing. The main goals are to evaluate whether the model can produce reasonable results given a range of inputs and to create a framework where we could quickly evaluate load estimates within a regional context, while iterating through model formulations and parameter selection. Test cases were chosen, and median and midpoint values were used as a starting point subject to workgroup input.
  - Joseph walked the group through an example using Baltimore and four wastewater treatment plants in Baltimore/Baltimore County as a test case given the availability of public data for this area.
    - The first step in estimating exfiltration volume given a fraction exfiltrated, the annual system treatment volume, and the fraction of gravity line was done for both total treated flow and dry weather flow. The median value from the lower range of the literature was used for the initial fraction exfiltrated. Going through the first step of the model, you end up with a percent of urban nitrogen load that is within the range expected from literature (~13-20% of the urban load).
    - The second step is the Groundwater Coefficient. Rather than identifying the depth to groundwater table for each service area, a mean and median depth to groundwater was calculated for each geobasin within the watershed, and that depth to groundwater was assigned to the service area based on the geobasins it resides in. A simple test of what coming up with

that geological coefficient might look like. There are a variety of refinements that the group might be able to make, such as the importance of the geobasins or depth to groundwater.

- The final consideration was accounting for new and newly rehabilitated sewers with the coefficient. Joseph used values from the literature and selected the midpoints from those values to do additional testing with Baltimore as the test case. The data used was pulled from publicly available data for the last ten years for Baltimore, but the data that will be used in final modeling will be provided and vetted by Maryland.
- Joseph provided a summary to the group:
  - Values are within the literature range as a percent of the total urban load.
  - We need to consider where the model is going to lie within the greater CAST structure and if it is a NPS subject to land-to-water factors or if it is a new direct load.
  - Need to consider CSS because the numbers from that test system did come out higher, and there might be different ways to get nitrogen concentrations.
  - Need to think about where there will be the most sensitivity that is going to have the most leverage on the model
- Clifton Bell asked if there are any known or finer values of particular systems to shoot for as we examine the weighting of these factors beyond the comparison to a general literature range of the urban load. Joseph mentioned that he wasn't able to find data within the Chesapeake Bay Watershed, but he believes there are systems within the watershed that have estimated their exfiltration, and he hopes the group might be able to provide those estimates.
- Jamie suggested that Joseph share this request via email with the group so members can see if they have willing utilities or potential estimates of exfiltration.
- Dave Montali mentioned that Baltimore has SSO issues and he's wondering if the information from Baltimore is based on their assessment of an exfiltration rate exclusive of SSOs, or if it is all together. Joseph responded that he is gathering the annual treated flow, total and dry weather flow, percent of the sanitary sewer network, length of pipe or percent of system that is new or rehabilitated, and timeframe.
- Dave asked why we aren't going more directly to something like percent of design flow or percent of dry weather flow. Joseph responded that we are using the percent of the dry weather flow as the primary parameter in the model. Dave also suggested that we should start talking about SSOs at some point, given our time constraints.

- Jamie suggested that the small group meet in February to continue these discussions and discussions on SSOs between now and the next meeting in March. Ed Cronin suggested a small group meeting in late February/early March for CSOs as well.
- Jamie mentioned that she had a conversation with Bryant Thomas, VA DEQ, about SSOs. He felt that the ongoing chronic ones would be of importance to include in the model. Jamie mentioned that VA does have reporting but that there are two different reporting approaches depending on which part of the state an overflow occurs. Jamie asked if the group had any comments on SSOs and what they were able to determine within their areas.

#### CSO data – Justin & Ed Cronin, Brown & Caldwell

- Justin thanked Zach for sending over data from PA and mentioned that they are currently working to dig through this data. The group also heard back from WV about a few communities that have been controlled. West Virginia doesn't have a lot of data for the smaller communities, but Petersburg is 100% controlled. Martinsburg and Moorefield have achieved 85% CSO control, along with Keyser and other areas. Ahead of the small group meeting, they will go through the state WIPs and do a comparison to see what communities were shown as having CSOs versus now. They are still missing data on DE, MD, and NY state.
- Ed mentioned that he found one of them from New York state. Last time the group met, they said that Delaware was separated, but Ed will continue working on New York. They did see that some communities have CSO permitted bypasses, so they will need to see how those were handled in the original 2010 waste law allocations. They'll be digging through that data over the next month and will talk about the impacts and data at the small group meeting in late February.
- Justin noted that someone from the group offered to help with Maryland data, and he asked the group for a reminder who that was. Bel Martinez da Matta, MDE, commented that Shannon is working on a finalized list and spatial data and hopes to have it done by the end of the month, ahead of the February small group meeting.
- Justin said that the group will need to think about how they deal with the smaller communities in West Virginia at the February small group meeting, given that WV DEP is unable to provide data for the smaller communities. Dave mentioned that he thinks that will also be true of any rural CSO communities in other states, not just West Virginia. While PA has data on some, they probably have systems that are in the same situation as the small ones in West Virginia.

#### Boat pump-outs – Ivy Ozmon, HRPDC

- Jamie reminded the group that they decided to table the Boat Pump Out discussion and not pursue it as a needed model update. However, Jamie expressed the importance of documenting that rationale.
- Ivy Ozmon noted that she will update the document that was put together by Dylan, workgroup member, sharing each state's perspective on why we won't be pursuing the BMP. Ivy said she will add the Virginia perspective to that and work with Caroline to distribute it to the group.

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#### 10:40 **Biosolids Data Request Discussion** – Emily Majcher, USGS (15 min)

Emily Majcher, USGS, mentioned that there is work being done at the USGS to explain how actions and landscape factors might contribute to water quality, beyond nutrient and sediment. As a result, there has been some interest and questions from TCW about biosolids and some sampling has been done within wastewater facilities in the Patapsco and Potomac Watersheds. Last year, USGS was asked to start thinking about a spatial data set of biosolids applications and land applied biosolids in the watershed. Emily had originally reached out about CAST data, and they were able to receive data from MD, DE, and WV from what was provided to the CAST group. That data was downscaled to NHD plus catchments, however the data for some states are quite old, since it is carried over from the previous submittal if there is not new data. As such, Emily has been working on ways to receive or estimate data from PA and VA. Emily noted that USGS is willing to put effort and resources into this to estimate or aggregate the data, but they are at a dead end of what they can do at the moment, and they want to try to do this as accurately as possible. Emily wanted to bring this to the group's and see if they have any additional thoughts or points of contact.

#### **Discussion:**

**Dave Montali:** WV, like all other things, is small, has limited number of facilities that apply biosolids in Bay Watershed. But, I could probably call some people and at least get you a contact, maybe get more direct information. Certainly spatially, what fields their biosolids go on. This has

a PFAS basis. Are you looking for quality of the biosolids in terms of PFAS, or simply how much goes where?

**Emily Majcher:** How much goes where. We had other USGS colleagues' publications that have looked at statistical analysis, sharing that they may see differences in water quality in areas where biosolids may have been applied or not. Just because we are being asked this question a lot, being able to have a spatial data set of where and how much is really useful. I will say that WV did submit data in 2023. We downscaled to NHD catchment for crop and pasture on agricultural land use for the matching year but if you can be more specific than that, that's awesome. We were pretty happy with our WV, DE, and MD data sets. We are just struggling a little bit more with VA and PA right now.

**Dave Montali:** Ok, so maybe not a great need for WV, but what you just said doesn't ring true either. I know most of our biosolids in the Bay do not go on crop lands. It would be on the pasture and hay stuff as a rule. We could be a lot more precise than a universal downscaling method.

**Emily Majcher:** I will follow up with you about that. Thank you.

**George Onyullo:** There was a time that, with the biosolids from Blue Plains, we had a pretty good idea where the biosolids were land applied. As you know, I had a break, and I don't know whether you had any contact from anybody from Blue Plains. If not, you and I need to have a discussion on the side and see how we can get things going on that front.

**Emily Majcher:** At this time, I have not spoken to any providers directly. I have only talked with state contacts and Olivia and Jessica and their group.

**George Onyullo:** I will try to get in touch with you so we can work out something. We had pretty good data on where the biosolids from Blue Plains was applied, mostly in Virginia. Let's take it up on the side and see how go with it.

**Jessica Rigelman:** I wanted to comment on Dave's comment that in WV biosolids are applied on croplands. In CAST, we have specific biosolid curves that determine where those biosolids go which include hay, crop, pasture. So, if that is the data you are using for where things are distributed, there's a set of rules in place in CAST as far as where it's applied, and it may not obviously match up with where the states are applying their biosolids.

**Jeremy Hanson:** Thanks, Jess. It sounds like Emily can have different rules for her own analysis.

**Jamie Mitchell:** I can tell you what I found when I spoke with Neil Zahradka. He's our biosolids manager in the state of Virginia for DEQ. They do have the data you need available, so I can put you in touch. The challenge they were having was placing it in a different format than how they collect it. So, they didn't really have the resources to change formats to a specific need, but they are happy to provide data they have available to you. That would include any Bloom from DC water that might be applied within the state of Virginia. In case anyone is wondering, there isn't as much Bloom applied in the state of Virginia as there used to be. So, very little comes to Virginia now. I will also point out that for the state of VA, biosolids were land applied on only 37,000 acres across the state. But, he'll have all of the data needed. I will connect you two so that you can get that information. Once you do gather that information, if we could have an opportunity to look at it and make sure it seems like it's matching where we think the biosolids

are being applied, that would be helpful, because there are going to be some generators who are involved in biosolids land application in this workgroup. That will give us an opportunity to take a look and go back to our colleagues and validate some of that information that you might have, so we can help you get the best information that you need.

**Moussa Wone:** This is Moussa Wone with DC Water. Send me your contact information, and I will put you in contact with Chris Peot who is managing our Bloom.

**Emily Majcher (in chat):** [emajcher@usgs.gov](mailto:emajcher@usgs.gov)

**Action:** Members with any information or points of contacts for biosolids work should email Emily ([emajcher@usgs.gov](mailto:emajcher@usgs.gov)).

**Action:** Once Emily compiles available information, she will bring it back to the group to see if it matches where workgroup members would expect biosolids to be applied.

10:55 **Recap of Actions and Decisions (5 min).**

11:00 **Adjourned**