Chesapeake Bay Program

Wastewater Treatment Workgroup (WWTWG)
Meeting Summary

Thursday, March 27, 2025
10:00 AM to 11:15 AM
Meeting Materials

Actions and Decisions

Decision: The WWTWG approved the January meeting minutes.
Action: Please provide any additional data to Joseph Delesantro (jdelesantro@chesapeakebay.net), ORISE Fellow/CBPO, on potential test counties to pursue for the Sanitary Sewer Exfiltration methodology.
Action: CSO and SSO/Exfiltration small groups will meet again in April. If you would like to be included in small group discussions moving forward, please contact Caroline Kleis (kleis.caroline@epa.gov), CRC.
Action: Please provide any updates from your jurisdiction on the documentation of state's perspectives for not pursuing the Boat Pump Out BMP to Ivy Ozmon (iozmon@hrpdcva.gov), HRPDC, and Caroline Kleis (Kleis.Caroline@epa.gov), CRC. Additionally, if you have any feedback on the threshold that would require the group to revisit this BMP in the future, please include that in your update to the documentation.
Action: The group will seek a vote on the proposed approach for the use of non-significant WWTP data for Phase 6 scenarios and Phase 7 Development at the April meeting.

Meeting Minutes

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

- **Decision:** The WWTWG approved the January meeting minutes.

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

Small groups met in July and September and provided an update at the October and January meetings. The CSO and Exfiltration/SSO Small Groups met again in February/March to continue these efforts. 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 discussion.

- Exfiltration and SSO data – Jamie & Joseph Delesantro, EPA ORISE
    - Joseph presented on the work done by the SSO/Sanitary Sewer Exfiltration Small Group since the last meeting. This update included an overview of the method that is being tested and the continued methodology development.
        - Joseph reminded the group of the current approach that is being taken to estimate exfiltration. The fraction of exfiltration is multiplied by an annual system treatment volume. In the last small group meeting, the group decided to use a dry weather system volume, and that is multiplied by the geologic coefficient to account for potential effects of groundwater table on exfiltration. Optional (contingent on whether or not states have the data available) inputs or factors that might further reduce or mediate exfiltration include the fraction of the

system network which is gravity line versus forced sewer and the fraction of the system which is new or newly rehabilitated.

- Joseph presented slides showing different stages in the method and how it effects the total exfiltration for a test case scenario.
  - In terms of exfiltration as a percent of treated flow, the small group decided it was best to use dry weather flow. This better accounts for the portion of the flow that is likely to be exfiltrated and helps remove the influences of inflow and infiltration, which might be more variable across systems. The smaller value of the range for Test Case B corresponds to exfiltration as a percentage of the dry weather flow.
  - A change in thinking about the groundwater coefficient was also discussed at the February small group meeting. Initially, Joseph had just taken medians of the groundwater depth across different geobasins. A slightly more sophisticated method was developed where the exceedance for space and time for different groundwater depths in each of the major geologic basins in the Bay watershed was calculated. Joseph believes this is a better representation of the groundwater factors that would be controlling exfiltration, and it also results in a more significant reduction in exfiltration in areas with higher groundwater tables.
  - Joseph also listed the inputs and parameters that will need to be defined in order to continue the development of this method. Joseph presented these in an email to the small group. He mentioned that the accounting for newly built and newly rehabilitated sewers still requires additional work. This is an optional input to the method, and in the testing where Joseph used middle values from the literature range, it came out as having small to moderate impact (~5%) for that test case. While this is optional and may not have a large effect, expert judgement will be required in further developing those inputs and parameters if we want to account for this.

- Clifton Bell asked if we are estimating exfiltration from the sewer or if we are estimating delivery to the stream. Joseph responded that we could position this in CAST so that it is considered a nonpoint source. He mentioned that there are two options for Phase 6 in CAST. One is to have land to water factors which act on that source. These are factors specific to each catchment that would mediate the load between the landscape and the stream. Another option is to define it as what CAST calls a “direct load”. This means that there are still factors that are defining the effects across space on that load, but land to water factors are not being directly applied to mediate that load. Joseph noted that in the literature, the exfiltration estimates are often derived from measurements at the stream and are already accounting for any potential losses that there might be in the ground. Relatedly, the vast majority of total

system volume is very close to streams because the large trunk lines are located with streams. Per his previous research, Joseph also mentioned that over 90% of sanitary sewer system volume was within just a couple of feet of streams meaning that, because of the location of sewers, the mediating effect of soil and groundwater processes might be small in comparison to septic systems.

- Jamie asked Joseph if he was able to get any other data and test subjects. Joseph mentioned that he received responses from a party saying they are working on collection additional data, but he hasn't received anything other than publicly available data and the data provided by Jamie for Hampton Roads.
- Jamie gave an update on SSOs.
    - Jamie mentioned that she sent out an email to small group members to see what reporting data is available and if members have the ability to look through and identify chronic points of SSO loads. Jamie received information from Bel (MD), and the group will continue discussions at the next SSO/Sanitary Sewer Exfiltration to figure out how to incorporate these loads in the model.

- CSO data – Justin & Ed Cronin, Brown & Caldwell
    - Justin gave an update on the work done by the CSO Small Group since the January meeting.
        - The small group has the Virginia and DC data needed for updates. Delaware no longer has a CSO load and Dave Montali is continuing to work on the data for West Virginia. The group is looking for Maryland data from Shannon McKenrick, MDE, and Zach Steckler, PA DEP, is working on providing Pennsylvania data. Justin and Ed are researching the best way to get data for New York state.
    - Dave mentioned that he asked the question in the small group of whether the wasteload allocations in Appendix Q of the TMDL represent the baseline load from 1990-2000 or the load with some prescribed reduction. Dave suggested we might need to reach out to EPA about how that TMDL was done because when he looks at the loads in Appendix Q, they look more like the baseline loads than a reduction. If you look edge-of-stream for some of the West Virginia ones, the progress is an order of magnitude lower than those values, suggesting that progress represents an 85% reduction as we report, but the allocation is the base condition. If we are trying to understand how to merge CSO and WWTP wasteload allocations, the group needs input on EPA about how those allocations were derived. Were they universally set at the base condition for everybody, or was that just the case for some jurisdictions? Additionally, Dave mentioned that when we did Phase 6 climate change adjustments, we changed those actual loads, and if it's a merger of CSO loads and WWTP loads, it's not a modeling issue, it's more of a TMDL policy issue.
    - Olivia Devereux noted that she can provide documentation if there are questions about industrial wastewater and where that ended up in the TMDL.

- Jeff Sweeney informed the group that in the TMDL published in 2010, the wasteload allocations for all significant and non-significant facilities were established by the state, not EPA, as a part of the WIPs. The states set both loads and concentrations that they wanted to have in their WIPs.
- Olivia mentioned that it has always been an issue as to whether they used permitted cap loads or anticipated actual loads. Jeff said it was up to the states how they want to address it and agreed that it was not consistent among the jurisdictions.
- Dave mentioned that for West Virginia, the reduced loads that they are reporting are well below the allocated loads. Justin asked Dave if he had a summary of that data/reductions over the baseline. Dave responded that they have 1 facility that is at 100% or doesn't have any CSOs, 3 facilities reporting at 85% reduction, and one small facility with a unique situation where there are allocations mixed between West Virginia and Maryland.
- Ed Cronin described the transfer process between model inputs. Ed mentioned that what the group is looking for in the TMDL is an updated status of where some of these communities are to make sure that the allocations are either moving to MS4 or moving to the treatment plant.
    - The approach taken so far was to look at the allocations in Appendix Q in the TMDL and utilize model documentation to discern what the states selected as their base conditions. States either did the baseline condition or they did the condition that was after implementation of the long-term control plan.
    - West Virginia and Virginia's were based off the current condition, and the group is still working with Pennsylvania and Maryland to find out where their baselines were. Justin mentioned that DC Water's condition represents what they would have achieved by implementing their long-term control plan. Additionally, Alexandria represents the baseline condition whereas DC represents the controlled condition. So, each jurisdiction is a bit different.
    - Once the group gets an answer to that question, annual CSO reports will be used to better understand and make suggestions for allocation adjustments.
    - Ed mentioned that in the Virginia WIP, they aggregated all the combined sewer flows, whether it was combined sewer overflows or combined sewer capture. As they implemented their CSO program, it was just a matter of shifting allocations from a CSO outfall to the treatment plants.
    - Dave asked if the "CSO delivered" is actually using the delivery factors of the watershed model and noted that there were changes between 5 and 6 in the Model. Ed mentioned that he knew the delivery factors would change, but the edge-of-stream will matter the most to the community.
- Boat pump-outs – Ivy Ozmon, HRPDC

- Ivy reminded the group that it was previously decided there were too many issues with the existing boater pump out expert panel report methodology that gave many different members concerns about the accuracy of the loads, leading the group to decide not to introduce that level of error into the model for pump-out loads. Instead, documentation was created to capture why each state felt the adoption of the pump-out or additional method to developing the methodology wasn't worth pursuing. Additionally, it was previously discussed that the group would consider a threshold that would require revisiting this BMP in the future, but it was unclear how to proceed with documenting these concerns. While Ivy received feedback from some jurisdictions, others still need to provide updates to the documentation.

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10:40 **Incorporation of Non-Significant WWTPs into CAST-** Gary Shenk, USGS (30 mins (15 min presentation, 15 min discussion)

Gary Shenk, USGS, gave a presentation on how new data on non-significant facilities should be incorporated into CAST for Phase 6 scenarios and for Phase 7 development. Gary also presented decisional language for the group to vote on at a subsequent meeting.

Discussion:

Olivia Devereux (in chat): Here is the application that the states use to report annually. It is required by the EPA grant guidance associated with the Chesapeake Bay RAP grants. https://pointsource.chesapeakebay.net/
Olivia Devereux: Auston, does this match what your understanding is for annual progress reporting for wastewater?
Auston Smith: Thanks a lot, Olivia. Yes, that is what we are trying to move forward with communicating on. Gary, sorry if I missed this, but when we are using this average of possibly annually monitored data, it's not just for this year or next year, we would use that going back in the history of submissions for as long as you had that annual monitored data, correct?
Gary Shenk: Yes, and if you just start monitoring, it doesn't mean that something changed in that year. It would be not only the history of monitored data, but the entire history of the model. So, when the point source started or 1985 and use it for the entire history.
Auston Smith: Thank you, Gary. So, yes, that is what we are trying to communicate and flesh out as we approach a Phase 7 model update.
Dave Montali: When we started all of this, there were concentrations for N and P for wastewater that were 18N and 3P. The mindset in our state was that we are not expecting pollutant reductions

from the little guys. So, the allocations that were in the TMDL and our progress for every year since has been design flow x the default conditions x 365. We thought that a) we are not expecting reductions and b) the monitoring we are expecting of these is nowhere near capable of reporting loads from 95+ percent of these facilities. They don't have flow measurement; they may have twice a year grab sampling of their effluent. Going along with the idea that they don't have enhanced treatment and if they grow to the point where they need an upgrade, then they get kicked into the mode of operation for the significant facilities. They have to have flow measurement. They've got to have sophisticated monitoring to allow load reporting. That's kind of worked well for us. I'm not sure why this drive is going on because if you adhere to the principles, there's been no change in treatment, and there's been no change in flow for these facilities. What's the value of taking 10 grab samples over the time since '85 and saying instead of 18N, it should be 14N? There just doesn't seem to be a lot of value behind that.

Gary Shenk: That's exactly the thinking behind not using it in Phase 6, but I think what you are pointing out is that maybe it doesn't make sense to use it in Phase 7 in West Virginia.

Jess Rigelman: That is true in West Virginia in how they report the data, but some states are getting monitored data and reporting monitored data in Phase 6 and it's causing lots of variability of which aren't real changes on the ground. So, this proposal is because we want monitored data when we have monitored data, and we'd like to collect it, but we need to have a consistent way of feeding that into CAST so that it doesn't cause these large spikes up and down. If you don't have the monitored data or your approach makes sense then, yes, continue to report those defaults. Other states are using a different approach and actually reporting that data, and it's causing great variability in Phase 6.

Dave Montali: I think the monitored data, you just can't use that term. There are differences in monitored data. What is expected of our significance is relatively intense- weekly flow composite sampling, average value, reporting a total monthly flow. There's a pretty good basis for coming up with the loads. That's contrasted by indiscriminate, very infrequent grab sampling that you might call monitoring.

Olivia Devereux: Thank you, Jessica, for clarifying. Dave, I believe you are speaking just for West Virginia because I know that general permits in other states have different requirements for facilities with different flows. The term "non-significant" is a Bay Program word, and it has a definition for flow, but I know that in the state's general permits for wastewater, it depends on the amount of flow. People are on the call from Virginia, but I remember there being many different classes, not just significant and non-significant, that dictate the sampling frequency of wastewater treatment plants. It may be a different situation in every state with how they define it as opposed to Dave's experience with West Virginia which, perhaps, doesn't have as many classes for a sampling frequency requirements.

Dave Montali: Yes, I was speaking only for West Virginia.

Jamie Mitchell: I can speak to Virginia. Existing facilities over a certain flow tier get coverage under the general permit. Olivia is exactly right that there are different flow tiers within those that are covered under the general permit that dictate different sampling frequency. There are still small facilities that were existing as of the date of the TMDL that, if they were small enough, they do not need coverage under the general permit. I think there's more limited monitoring data. I think HRSD may have one of those facilities perhaps, but I can't recall. I can pull up that specific information if it's of interest or value.

Olivia Devereux: I don't think we are talking about the summer camp that has three months of flow and that's it. That gets averaged across 12 years and throws all the numbers off, and it's over

estimated because they assume those three months represent 12 months. I don't think we are talking about those. It may just be that the wording is confusing and because every state has different requirements. So, just want to be cautious that what this group finally comes up with will work for all the states and all the permits that they are working under.
Auston Smith (in chat): To Dave's point, as an adjusted term for this request for monitored data for non-significant facilities, maybe specifying "non-significant monitored data" would be useful in the QAPP and verification discussions in the summer/fall. Let me know your thoughts, but we were not trying to gloss over the difference in these efforts between significant and nonsignificant monitoring efforts.
Jamie Mitchell: As I mentioned, I think HRSD has one very small facility that was existing that didn't get covered under the general permit, and we did do some monitoring at that facility at DEQ's request. We are going to shut that facility down. So, I wonder with these small facilities, some of them get pulled into a regional facility in flows. It's an inter basin transfer, so that allocation doesn't move at least in the state of Virginia. I don't know if that's different for other states. I'm just curious how that would be handled, and maybe that's way too in the weeds for this purpose, but just curious.
Gary Shenk: There's a stop date for facilities. So, that small facility's loads would go to zero when the facility went to zero, if I am understanding you correctly.
Dave Montali: In West Virginia, we do the default reporting on quality, but we keep track of start and stop dates. So, if a small package plant was assimilated by a POTW, our progress reporting would stop reporting on that small guy and transfer the allocation the small guy had, whatever their flow was times 18 and 3, to the bigger guy. The limit would come out as an edge-of-stream load, but we would judge the effects of that sewage moving to a different location.
Auston Smith: To elaborate further on Dave's point, during the annual verification calls if we have non significants that are maybe assimilated or fall out of service entirely, reported flows go down to zero, we try and reach out to that jurisdiction to confirm what we are seeing. We ensure that there is no missing data, and that that is called out in the QAPPs if it is a significant facility. If it's several non significants that are being assimilated in one progress year, that is also called out in that specific year.
Jamie Mitchell: Gary, when do you need us to make a final recommendation?
Gary Shenk: I think it makes sense to me to come back next month. It seems like the understanding is pretty good. If we come back next month and say, yes, don't use these values in Phase 6, it seems to me like different jurisdictions would have different recommendations about how to use measured values. The initial recommendation for Phase 7 was to use the average measured value. I think Dave has made it clear that West Virginia would like to not do that. So, I think what we are saying is that it would be up to the jurisdictions whether to use an average of those measured values over time or to use the defaults. If we came back at the next meeting and were able to make that decision, that would settle it.
Dave Montali: The expectation should be to create the total history and base your decision on change in that history only upon a change in management or an expansion of a facility that changed flow.
Gary Shenk: Yes, absolutely. That's the principle behind it. To your point, that could be accomplished by using only the defaults for the entire history, or the stop to start time, or it could be accomplished by using an average if a state felt like their monitoring were of high enough quality. So, we can revise that language and get that language out for a potential decision next time.

Action: The group will seek a vote on the proposed approach for the use of non-significant WWTP data for Phase 6 scenarios and Phase 7 Development at the April meeting.

11:10 **Recap of Actions and Decisions** (5 min).

11:15 **Adjourn**

Acronym List

BMP: Best Management Practice
CBP: Chesapeake Bay Program
CSO: Combined Sewer Overflow
HRSD: Hampton Roads Sanitation District
EPA: [U.S] Environmental Protection Agency
ORISE: Oak Ridge Institute for Science and Education
WWTWG: Wastewater Treatment Workgroup