

Urban Stormwater Workgroup & Wastewater Treatment Workgroup
Joint Meeting Minutes
Tuesday, May 20th, 2025
10:00 AM – 12:00 PM
[Meeting Materials](#)

Summary of Actions and Decisions

Decision: The USWG approved the [March USWG Meeting Minutes](#).

Action: If you're interested in being more involved with the exfiltration estimation method, or the SSO load method, email Joseph Delesantro (jdelesantro@chesapeakebay.net) and Petra Baldwin (Baldwin.Petra@epa.gov) or attend upcoming [WWTWG](#) meetings if you want to give input before it is presented to the WQGIT.

Action: If you are interested in following the decisions on land use aggregations and loading rates more closely, attend upcoming [Land Use Workgroup](#) and [Watershed Technical Workgroup](#) meetings.

Action: If you are interested in serving as a pilot for the draft vulnerability assessment, reach out to Krista Romita-Grocholski (kristarg@rand.org) and Michelle Miro (michelle_miro@rand.org). You can also help them by providing feedback on existing tools they have built (e.g. IDF Curve Tool and Climate Summaries). Please fill out their feedback survey [here](#).

Action: If you would like to support an effort to obtain dedicated funding for updates to MARISA tools, given the indefinite pause on Atlas 14 Vol 2, reach out to Krista Romita-Grocholski (kristarg@rand.org) and Norm Goulet (NGoulet@novaregion.org).

Action: CWP will continue to refine results from the SWMM model and incorporate feedback from the external review into the BMP Interpretation White Paper for Biochar as an Amendment to Existing Runoff Reduction Practices. The USWG will plan to vote on it in Fall 2025.

10:00 Welcome and Review of March Meeting Minutes.
Norm Goulet, USWG Chair

Decision: The USWG approved the [March USWG Meeting Minutes](#).

10:05 Announcements and Updates
David Wood, USWG Coordinator

- STAC Workshop Proposal
 - STAC did not approve the soil health workshop proposal put forward by CSN and DOEE. The proposal scored highly but did not make the cut. Olivia Devereaux shared that there is a CAST Webinar on a similar topic,

Agricultural BMPs for a Healthy Ecosystem, which can be found under Scenario Analysis [here](#).

- Urban Nutrient Management Panel Update
 - They are well into the literature review, mostly focused on N and P inputs, fate, and transport. Their goal is to have a more detailed summary for the panel by mid-June.
- “Beyond Bean Counting” Goal Implementation Team Funding Project
 - AMT has done a detailed review of each state’s QAPPs to summarize their data flow and processes. The group is working with the steering committee to develop a list of interview questions and priority people to follow up with on questions raised during those QAPP reviews. Interviews will begin in a couple of weeks.

10:15 WWTWG Update on SSO and Exfiltration

Joseph Delesantro, EPA ORISE and Jamie Heisig-Mitchell, HRSD, WWTWG Chair

Joseph gave an update on the development of an estimation method for sanitary sewer exfiltration loads for inclusion in the development of the Phase 7 model. He outlined the estimated method and factors that mediate the effects of groundwater, soils, geology, new or rehabilitated sewer pipes, etc. Joseph walked through what the method would look like for a test case with data from Baltimore City and shared preliminary estimates for sanitary sewer exfiltration loads to streams for a couple areas with data, noting that values are on the conservative end of the literature range as a percent of the urban load. The group discussed how to consider attenuation in soil and groundwater – either as a standard nonpoint source (where it is accounted for with calibrated land-to-water-factors) or as a direct load (where it is defined separately, similar to how septic is now treated). Joseph highlighted the timeline of next steps after that decision, including presenting to the WQGIT this summer and the final deadline of September for inclusion in Phase 7.

Discussion:

Norm Goulet: Did you get a chance to do a comparison between option 1 and option 2?

Joseph Delesantro: No, so that would essentially require us to put these values into CalCAST and run it through. That is, I need to talk to Isabella Bertani about the feasibility of doing that in the time that we have, and that's something that we could try to do. One thing we could do is just look at what is the attenuation -- assuming that the attenuation factors wouldn't change dramatically from Phase 6 to Phase 7 -- we can just look at what are the land-to-water factors, what is their attenuation of, say, urban stormwater or other developed loads from Phase 6. So, that's a value I think with a little bit of help I could pull up and do a quick comparison of.

Norm Goulet: Given that we're moving towards CalCAST, I'm just wondering for uniformity if we should move in that direction. I'd have to talk to her also in terms of CalCAST and what potential issues there might be.

Joseph Delesantro: The main thing is that is going to apply factors that are going to be common to all nonpoint sources in those model units. So, effectively it's going to treat the

attenuation of atmospheric deposition, fertilizer, and stormwater all the same as the attenuation of sanitary sewer exfiltration. That's the way those land-to-water factors work. So, that would essentially be the big difference, whereas doing a direct load would allow us to do something that was more specific to the pathways of sanitary sewer exfiltration.

Peter Claggett: Jackie Pickford on our group is remapping septs based on parcels for Phase 7. Then you have, for example, a parcel centroid or the building centroid on a parcel that is on an individual on-site septic system. Then, we've got kind of three different resolution stream datasets. For Phase 7, we're basically using 100K streams and for impervious land use connectivity we're using the 100K streams and Michelle Katoski is doing her connectivity approach. I'm just wondering how you're planning to do distance to streams and what scale stream dataset are you considering for that?

Joseph Delesantro: So, essentially I am just using the values that came out of my previous work from North Carolina, from the Haw and the Upper Neuse where we had sewer line mapping provided by all the utilities in the area as well as a couple of different ways to get at septic mapping. We do not have sewer line mapping for the entire Chesapeake Bay watershed. So, we're not going to be able to replicate that distance to stream for septic versus sanitary sewers for the Chesapeake Bay watershed. I did it for two HUC-8s in North Carolina. I don't know how many HUC-8s are in the Chesapeake Bay watershed off the top of my head, it's a lot more than two. The process of integrating and cleaning all of that data would be a lot, and it would be something that we would need to update. So effectively, my proposal here is simply to use that 36% difference that came from my work in North Carolina in the Haw and in the Upper Neuse to apply that differential to the values that we use for wastewater to sanitary sewer exfiltration. The stream mapping that I used in North Carolina came from a North Carolina-specific data set called Atlas or Hydro Atlas, I think, and I do not know what that corresponds to in terms of one to 100,000 or 20,000 or whatnot, but that is probably something I could find out. It is finer than the standard NHDPlus mapping hydro lines that we had, though.

Dave Montali: It seems like your end result was back to the first desire to be conservative. So, I forget all the numbers, but I think we were talking about 6% of the urban load for this test case in contrast to an average of 18%, so I think what you've done is good. We could test CalCAST, but this load doesn't act like normal nonpoint sources. It's not flowing across the surface, so no matter what the numbers come out there, it just seems like your approach is more thoughtful on where these things are and how the actual load gets to streams. So, I kind of like where you're at now. My only worry is it seems like the attenuation of nitrogen in the soil and groundwater may be more significant than what your caveat suggests. They're deeper than septic systems and the lines are much closer to streams. So, my only worry I have is maybe we're giving too much credit, but that again goes back to if we want to make a mistake then we want to be on the conservative side. Just my two cents.

Joseph Delesantro: I have the same takeaway that it might be too conservative, as well. I'm happy to discuss modifying those values. But, in complete agreement, Dave.

Norm Goulet: Yeah, I would agree with Dave. I think we're in the right area. And, like everything else we do in the Bay Program, it's always subject to updates. We may not have the polished product this time around, but as we go and gather more information, we can make requirements to it further down the road. I just want to make sure that whatever you're doing, Joseph, we're trying to get to the deadline that we have for the modeling work to get this stuff

in. The other thing I want to make sure we get on the record, and I know this is a concern from Jamie, is that this is not intended to be anything regulatory whatsoever. This is simply an attempt to look at what kind of loads we're now looking at that are on the edges that need to be accounted for in the modeling framework for the Bay. It's not a regulatory thing. This is not an I&I program. It's nothing like that whatsoever. A lot of this stuff is based on literature values and certainly we do not have anything along the lines to be able to move this into a regulatory program. So, I want to make sure that that is on the record for this 'cause I know this has been a concern that Jamie and some of the other wastewater folks have.

Olivia Devereux: I want to thank Jamie, Norm, and Joseph for bringing this forward. I'm excited that we can account for a load explicitly that's really always been there. Joseph, I'm approaching this from the perspective of having to explain this to CAST users and they're going to ask 'Well, how is this calculated?' And one of the questions I see coming up is that we don't have a spatially explicit model and we don't know where the sewer pipes are. So, if you don't know where the sewer pipes are and you don't know where the streams are in relation to everything else, how are we calculating this? That's the part that I'm struggling to figure out how we're going to explain. I've done hydrologic management models before that have explicitly the number of miles of sewer pipe. I guess I can't quite get my head around how you're doing the calculation without knowing the miles of sewer pipe and where those are.

Joseph Delesantro: Yeah, so there's a long answer to that and maybe we can have another conversation about that. I'm just going to try to give you the short answer right now. We decided rather than use the length of sewer pipes and their specific distance from the stream, we decided to use data that was already available, which is essentially the dry weather flow for each of these treatment facilities times this literature value that expresses sort of an initial or default exfiltration as a percentage of that dry weather flow (that 2.4%). So, we know for each facility we have its service boundary and then we can take its dry weather flow for each year and then we multiply that by that 2.4. That's how we get to that initial starting value, which for Baltimore came out to like 18%, and then we go through all those mediating and attenuation factors that got down to a number of 6%.

Olivia Devereux: Thanks. It is that 2.4% that I think is the part that's going to be harder to explain rather than all of the attenuation factors.

Joseph Delesantro: Okay, thank. I'll work on that narrative.

Norm Goulet: I assume we'll have one more look at this before it gets to the WQGIT?

Joseph Delesantro: Yeah, I'd like to be doing more work on this offline. There's lots of people on the WWTWG who are a part of that. If you'd like to be a part of that, send me an email and I can make sure you're CC'd on any emails we have on this. Happy to bring it back to any of the workgroups.

Norm Goulet: It might be easier just to jump on one of the WWTWG meetings.

Jamie Heisig-Mitchell: Yeah, I was just going to offer that. I know the agenda item also included SSOs. Just so you know we're really just starting to delve into that. We've been spending a lot of time on exfiltration, and so now we're really going to turn our heads, with an eye towards that September deadline, to be able to figure out how to get SSO loads into the model in a reasonably accurate way.

Action: If you're interested in being more involved with the exfiltration estimation method, or the SSO load method, email Joseph Delesantro (jdelesantro@chesapeakebay.net) and Petra Baldwin (Baldwin.Petra@epa.gov) or attend upcoming [WWTWG](#) meetings if you want to give input before it is presented to the WQGIT.

10:45 Barren/Construction Land Use

Peter Claggett, USGS

Peter provided an update on the methods for how high-resolution land use (LULC) is being aggregated into the Phase 7 model. He highlighted the accuracies of different classes, noting an overall 95% accuracy for static land cover and 86% accuracy for land cover change, but barren is the least accurate of all the classes. There are 56 mapped high-resolution LULC classes that will be aggregated into 16 classes for Phase 7, which will then be incorporated with other data for the CAST land uses. Peter noted some of the changes from Phase 6 classes, including Compacted Pervious, and gave a more detailed look at the Construction class. He outlined two options for how to determine what is counted as construction – reporting by states from permitted disturbed area or remote sensing data – and the differences and challenges associated with each method. Next steps include comparing additional remotely-sensed data to reported construction data from jurisdictions, refining mapping barren vs. construction areas, and considering changes to loading rates for compacted pervious and construction associated with infill and redevelopment vs. greenfield development.

Action: If you are interested in following the decisions on land use aggregations and loading rates more closely, attend upcoming [Land Use Workgroup](#) and [Watershed Technical Workgroup](#) meetings.

11:15 Climate Vulnerability Assessment Progress Update

Krista Romita-Grocholski, RAND

Krista gave an overview of the current progress on the Tools to Support Climate Resilient Communities project working to build out integrated toolkit to reference for climate considerations in stormwater planning and design. Krista shared an update on the Vulnerability Assessment Tool, the first part of the project, working to create step-by-step guidance to implement vulnerability assessment approaches specifically for the Chesapeake Bay watershed community. So far, they have completed a literature review of other vulnerability assessments and done extensive interviews with stakeholders for their needs and challenges. Responses included common challenges like data and modeling gaps, technical needs, regulatory barriers, capacity gaps, funding, and communication issues. Krista walked through a few case studies that helped define how foundational (e.g. Baltimore's and Hampton Roads's Hazard Mitigation Plans) vs. advanced (e.g. Boston's Vulnerability Assessments) the tool should be. Their next step will be to draft the tool and then pilot it with a local stormwater agency, with the final

tool to be completed in November 2025. The draft tool will include what a vulnerability assessment is, why they are useful, main approaches, how to select the right approach, and how to carry it out.

- Norm mentioned that NOAA has put the Atlas 15 Volume 2 on indefinite pause. As such, he is investigating whether there are any funds to update the IDF Tool once Atlas 15 Volume 1 is released. Krista responded that MARISA has been trying to figure out whether they could update their tool with some of their existing funds, with a goal to complete something by the end of this summer into the fall. They are also exploring setting up a framework to be able to do consistent updates going forward. Additional funding would be helpful to throw more resource at it, so if people have thoughts about that, please reach out to Krista since they're still defining exactly how they're doing that. Norm and Krista discussed the possibility of pulling in some states to contribute.

Action: If you are interested in serving as a pilot for the draft vulnerability assessment, reach out to Krista Romita-Grocholski (kristarg@rand.org) and Michelle Miro (michelle_miro@rand.org). You can also help them by providing feedback on existing tools they have built (e.g. IDF Curve Tool and Climate Summaries). Please fill out their feedback survey [here](#).

Action: If you would like to support an effort to obtain dedicated funding for updates to MARISA tools, given the indefinite pause on Atlas 14 Vol 2, reach out to Krista Romita-Grocholski (kristarg@rand.org) and Norm Goulet (NGoulet@novaregion.org).

11:45 BMP Interpretation White Paper: Biochar as an Amendment to Existing Runoff Reduction Practices

David Wood, CSN, USWG Coordinator

David shared the feedback provided by the external review team on the BMP Interpretation White Paper to consider biochar-amended bioretention practices for additional nutrient and sediment reductions under the TMDL framework. This external review team examined the White Paper to ensure that the pollutant load reductions and accompanying implementation and maintenance guidelines were appropriate and scientifically defensible. David gave an overview of the three experts on the review team and a summary of their feedback. Most of the feedback focused on providing more explanation on certain aspects including the range of modeling results from the SWMM analysis, precision around design specifications, potential unintended consequences of pesticide and herbicide applications, considerations around compaction concerns when retrofitting existing bioretention, and the mechanism through which biochar improves runoff reduction. David asked members to give input on the external review feedback and whether they are comfortable moving ahead with the range of outcomes from the SWMM model. The workgroup decided to push the

vote on the white paper to later in the year in order to allow CWP more time to refine the SWMM model results.

Discussion:

Lisa Fraley-McNeal: I think the comments are good and most of them will be pretty easy to address and will just help to strengthen the proposal. I think the one that would take a bit more time that we'd like to pursue is the comments related to the SWMM modeling. We'd like to take some more time looking at those model results and doing a little bit more modeling to try to tighten the results in a little bit.

Gillian Adkins: I'll speak for MDE and say that we would probably prefer if we take that little bit of extra time and make this a really tight white paper and reconvene in the fall rather than trying to push forward.

Norm Goulet: What is our deadline for getting this into Phase 7?

Olivia Devereux: I think we have plenty of time for that. We're working towards a fall deadline for approval of methods and everything, but for BMP change I don't know that that is a Phase-specific item. Instead, I think it would go into the next version of CAST, which would be the Phase 7 version, but it is not part of the Phase 7 development. If you were able to provide clarity that would inform how these BMPs are used that would be helpful, but we can get it in next time we come around. So, there is no soon deadline for this one. They wouldn't go in until 2028 either way.

Action: CWP will continue to refine results from the SWMM model and incorporate feedback from the external review into the BMP Interpretation White Paper for Biochar as an Amendment to Existing Runoff Reduction Practices. The USWG will plan to vote on it in Fall 2025.

12:00 Adjourn

Next Meeting: Urban Stormwater Workgroup: [June 17, 2025](#)
Wastewater Treatment Workgroup: [June 26, 2025](#)

Participants

Norm Goulet, NVRC (USWG Chair)
David Wood, CSN (USWG Coordinator)
Jamie Heisig-Mitchell, HRSD (WWTWG Co-Chair)
Justin Carl, AlexRenew (WWTWG Co-Chair)
Joseph Delesantro, EPA/ORISE
Petra Baldwin, CRC
Olivia Devereux, Devereux Consulting/CBPO
Matthew Williard, PA DEP
Samuel Canfield, WVDEP
Kevin Du Bois, DoD CBP

Andrea Krug, DC DOEE
Mia Rogers, MoCo DEP
Bob Buglass, WSSC
Megan Thyng, EPA
Gillian Adkins, MDE
Amanda Obosenko, Nature Conservancy
Bel Martinez da Matta, MDE
Cassie Davis, NYDEC
Krista Romita Grocholski, RAND
Eugenia Hart, Tetra Tech DE

Auston Smith, EPA/CBPO
Joe Parfitt, VDOT
Tim Williamson, MoCo DEP
Tyler Trostle, PA DEP
Dave Montali, Tetra Tech/WVDEP
Dylan Burgevin, MDE
Steve Bieber, MWCOG
Lisa Fraley-McNeal, CWP
Taylor Woods, USGS EESC
Angela Jones, DoD CBP
Bonnie Arvay, DE DNREC
Allie Wagner, MVRC
Mark Symborski, M-NCPPC
Jill Sunderland, HRPSC
Doug Austin, EPA
Michele Berry, CSN
Shana Stephens, EPA Region 3
Adrienne Kotula, CBC
James Grandstaff, Henrico Water Reclamation Facility
Helen Golimowski, Devereux Consulting/CBPO
Peter Claggett, USGS
Charles Hegberg, Resource Environmental Solutions

Monique Dykman, Londonderry TWP
Alicia Ritzenthaler, DC DOEE
Clifton Bell, Brown and Caldwell
Ivy Ozmon, HRPDC
Greg Hoffman, CWP
Brenda Morgan
Rebecca Winer-Skonovd, Biohabitats
Ellen Egen, Aqua Law
Jessica Rigelman, CBPO
Ginny Snead, AMT
Kelly Yachera, EPA Region 3
Martin Hurd, Fairfax County
Camille Liebnitzky, City of Alexandria
Elizabeth Ottinger
Jamie Eberl, PA DEP
Heather Gewandter, City of Rockville
Alexandria Wilkins, CWP
Devon Kosisky, MDE
Sadie Drescher, CBT
Jeff Sweeney, EPA
Bailey Robertory, MD DNR
Elaine Webb, DNREC

Acronym List

AMT: Agriculture Modeling Team
BMP: Best Management Practice
CAST: Chesapeake Assessment Scenario Tool
CWP: Center for Watershed Protection
IDF: Intensity Duration Frequency
LULC: High resolution land use land cover
MARISA: Mid-Atlantic Regional Integrated Sciences and Assessments
QAPP: Quality Assurance Project Plan
SSO: Sanitary Sewer Overflow
STAC: Science and Technical Advisory Committee
SWMM: Storm Water Management Model
LUWG: Land Use Workgroup
TMDL: Total Maximum Daily Load
UNM: Urban Nutrient Management
USWG: Urban Stormwater Workgroup
WQGIT: Water Quality Goal Implementation Team
WWTWG: Wastewater Treatment Workgroup