Urban Stormwater Workgroup (USWG)
Meeting Minutes

Tuesday, January 17, 2023
10:00 AM to 12:00 PM
Meeting Materials

Summary of Actions and Decisions

Decision: The USWG approved the September Meeting Minutes.

Action: Once the Urban Stream Restoration Protocol 3 Memo is finalized, David Wood, CSN, will distribute it to the USWG for a month-long review period. Following the review period and response to comments, a decision will be requested at a USWG meeting (March 2023 at the earliest) for approval of the proposed revision.

Action: The urban fertilizer ad-hoc committee will review the two proposed fertilizer application methods presented at this meeting and develop a recommendation for the USWG to vote on at the February meeting.

Action: Jeff Sweeney, EPA, will follow up with Alex Foraste (and any other interested parties) regarding the data showing the effect of removing outliers for the urban fertilizer application methods.

Meeting Minutes

10:00 Welcome and Review of September Meeting Minutes.
Norm Goulet, Chair. Attach A.

10:05 Announcements and Updates

- 2023 BUBBAs are now open
- CAST/Program Updates
  - PSC, MB, and WQGIT are still discussing the release of CAST-2021.
- Others
  - CAST Webinar on Thursday (1/19) at 12PM. Topic: Regenerative Stormwater Conveyance and other urban BMPs.

10:15 Evaluating Water-Quality Drivers in Streams of Fairfax County, Virginia. Jimmy Webber, USGS.

Jimmy presented findings from a new USGS report on water-quality conditions in Fairfax County, VA which contained findings about urban stormwater and response to management actions.

Discussion

Norm Goulet: Question about septic systems and density. Have you identified a threshold where the increase in N concentrations start to kick in?
Jimmy Webber: I don't think statistically we have a threshold where negative impacts occur, but in general around 300-500 septic tanks per square mile is where we start to see effects.
Norm Goulet: Nothing in the block for precipitation for suspended sediment. That's surprising.
Jimmy Webber: These don't capture storm impacted responses. We're looking at more stable base flow effects, which could be one reason why precipitation doesn't show up in that model.
Jeff Sweeney: Most of these watersheds don't have wastewater treatment discharge facilities? The focus was on septic?
Jimmy Webber: Our monitoring network does not represent any permitted point source discharges.
Jeff Sweeney: Do any of these stations go longer than the 10 year period?
Jimmy Webber: All are still actively monitored today. Up to 15 years of data in this monitoring network. Station at Difficult Run has nutrient data from back to 1985 and that's the largest watershed in Fairfax County.
Norm Goulet: Wastewater collection in Fairfax is significant. Probably more wastewater than septic systems.
Karl Berger: The question will be how representative is this data? We need more information like this. Also - P on turf grass values surprised me. I thought the amount of P fertilizer has gone down over that time period. Do you have data on if increasing P concentrations are associated with the amount of residual P from prior turf grass applications or pre-development conditions?
Jimmy Webber: Agreed, it doesn't necessarily mean patterns we have identified are related to contemporary changes in management. Legacy inputs can definitely affect these trends. Other research from urban areas starting to show dissolved P concentrations are showing in urban environments and desire to figure out why that's happening. Some relation to soil depth. Some links to increasing salinity. Lots to explore moving forward.
Karl Berger: If that research comes through, potential for an EP panel.
Norm Goulet: Yes, we'll have to talk about that research when it comes to light. During the Phase 5 and 6 model calibration we talked about phosphorus and soil and how we have information about this on the agricultural side but not as much on the urban side. Need to address this somehow.
Jeremy Hanson: The BMP implementation information is the implementation data reported in the CBP progress runs or straight from the state/county?
Jimmy Webber: It's the county records directly, but they reported all of that to the CBP, so should be some overlap.
Sam Camfield: What do you do to preprocess the data? Incredible amount of covariance.
Jimmy Webber: That's a challenge. In this report, we evaluated the relations between the responses and those predictors. Many of these variables are strongly related to each other. Before going into the mixed effect framework, we reduced the list to be more manageable using best professional judgment, so the model only considered 5-6 variables.
Matt Meyers: Just wanted to highlight that there are so many septics in that watershed because it was a land use decision to not have urban sprawl into the Vienna/Reston area. Wanted to leave green space to protect stream valley near Difficult Run.
Fernando Pasquel (in chat): Do you see any impacts of phosphorus ban on fertilizers?
Jimmy Webber: CBP data don't reflect the P ban. The data we considered wasn't able to demonstrate that.
Ken Bawer (in chat): Be good to also monitor in-stream biology.
Jennifer Walls (in chat): Regarding septic systems - With increasing nitrogen trends - did you consider age of communities/septic systems? Are there local requirements for septic inspections/pumpouts?

Jimmy Webber: Yes, accessed through Fairfax County. It's challenging to model hundreds of these variables, so we decided to just focus on the location of the systems themselves. A subsequent investigation of those variables would be useful.
Cecilia Lane (in chat): Soil depth, like loss of topsoil from land reduces depth and increases P outputs?
Jimmy Webber: I think of it more like soil depth affecting the amount of soil matrix where the amount of anions and cations can bond. More shallow areas there is less retention capability of P.
Norm Goulet: Number of different variables are at play here. some covariables could be extremely important but just aren't showing up - salinity, for example.
Matt Meyers (in chat): https://www.fairfaxcounty.gov/health/sewage-and-water
Ken Bawer (in chat): Will you consider monitoring in-stream biology?
Matt Meyers: Yes, biological monitoring is ongoing in Fairfax County with USGS.
Jimmy Webber (in chat): Ken, the upcoming report will also discuss how benthic IBI scores have changed throughout the monitoring network and the drivers of those changes. I didn't have time to include those stories in this presentation.

11:30 Proposed Fix to Stream Restoration Protocol 3. David Wood, CSN.

In 2020, the Water Quality Goal Implementation Team approved a series of updated recommendations for how to track and credit Stream Restoration practices. Since the new Protocol 3 was approved, practitioners who helped develop the protocol have discovered a series of issues related to its inability to properly "scale" the credit to account for more or less extensive floodplain restoration projects (whether by length or acres of reconnected floodplain). Over the past year, the group has reconvened several times to review the issues and propose a solution.

David introduced the issue and proposed solution, and discussed the review process and timeline for the USWG:

- CSN will incorporate final data from Chesapeake Delaware Floodplain Network (CDFN) and Big Spring Run. Memo will be updated and reviewed by Group 4 members.
- Memo will be sent to USWG for a 30-day review period.
- Following the review period there will be a response to comments.
- March/April 2023: USWG Decision requested on acceptance of proposed revision.
- Original Protocol 3 report will be revised to reflect changes.

Discussion
Matthew English (in chat): Measuring accretion of 0.3 inch sounds tiny/hard to measure.
David Wood: The 0.3 inch value is almost exactly the same rate as the Big Spring Run data and others in North Carolina. We will have more details and references in the revised memo.

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10:45 Turfgrass Fertilizer Application Method for CAST-21. Jeff Sweeney, EPA and David Wood, CSN.

At their August 29th meeting, the Bay Program's Principals Staff Committee tasked the Bay Program with convening a committee to develop interim solutions for short-term data fixes so we can move CAST-21 forward. The ad hoc team, convened in October, has met twice and developed two proposed alternatives to the USWG's current method. Jeff reviewed the two approaches and how they impact nutrient loads for each jurisdiction.

Discussion

Dave Montali: Both of these methods address the illogical results we saw. Also, everything is on the table for Phase 7 so nothing we're doing here to fix this dictates what we do for that model.
Alana Hartman: Did the ad-hoc get to see the last step you added or was that added post-meeting?
Jeff Sweeney: They have not seen the product of that. You are the first ones to see that.
KC Filippino: What happens next process-wise? USWG votes and then it goes up the chain to the WQGIT?
Norm Goulet: Yes, the USWG will take a vote on this and then it will go to WQGIT for a recommendation, who will probably pass it up to the MB and the PSC, given that the directive for this came originally from the PSC level.
Jeff Sweeney: Any concerns with the proposed methods here? Anything that would make you vote "stop" or "hold"? Not voting now but just curious.
No concerns raised.
Christina Lyerly: Will this information be sent out to the ad-hoc committee? Will they have another meeting before we revisit it at the USWG?
David Wood: After this call I will send an email to the ad-hoc committee to make sure everyone has the information/data they need to make this decision, get their comments/feedback, and then get a recommendation together to bring back to the USWG.
Norm Goulet: Let's have a short February meeting to discuss this and potentially take a vote.
Alex Foraste: Roughly how many records are we looking at for both state and county?
Jeff Sweeney: There are four years of data (2013-2016) for both phosphorus and nitrogen, and for each county that has some portion in the watershed. There are also different steps that change the data set, like removing outliers and performing a linear regression. So it's a considerable amount of data, but I couldn't tell you off the top of my head.
Alex Foraste: Does removing the outliers significantly affect smaller states since they have a smaller sample size?
Jeff Sweeney: I can provide you with the outcome of removing the outliers.
Olivia Devereux: When you're removing outliers, is it the sum of all records for the county in that year? Or is it all the records within that county?
Jeff Sweeney: There are two methods for removing outliers. For the one new proposal, it's to add all counties up with some portion in the watershed to create a state scale. In that method, we would smooth outliers at the state scale. The second proposal is to do everything at the county level, so you'd remove outliers at the county scale looking at each county over the entire period of record.
Olivia Devereux: West VA has known data errors - for example, data from a non-Chesapeake Bay county was reported by accident. At what point did we decide not to correct the source/input data instead of control for those known data errors after the fact?
Jeff Sweeney: Ideally states would go back and correct the input data/record. But I'm unsure if AAPFCO changes any of their history once they receive information from the states.

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12:00 Adjourn

Acronym List

AAPFCO: Association of American Plant Food Control Officials
BUBBA: Best Urban BMP in the Bay Award
CAST: Chesapeake Assessment Scenario Tool
CSN: Chesapeake Stormwater Network
EPA: Environmental Protection Agency
EP: Expert Panel
IBI: Index of Biological Integrity
MB: Management Board
N: Nitrogen
P: Phosphorus
PSC: Principals Staff Committee
USGS: United States Geological Survey
USWG: Urban Stormwater Workgroup
WQGIT: Water Quality Goal Implementation Team

Participants

Jackie Pickford, CRC
David Wood, CSN
Norm Goulet, NVRC
Jimmy Webber, USGS
Olivia Devereux, Devereux Consulting
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Aileen Craig, The Nature Conservancy
Richard Starr - Ecosystem Planning and Restoration
Ken Bawer, concerned citizen, Montgomery Co, MD
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