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Chesapeake Bay Program
Watershed Technical Workgroup (WTWG)
Meeting Minutes
Thursday, May 2nd, 2024
10:00 AM to 11:20 AM
Meeting Materials

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Summary of Actions and Decisions

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Decision: The WTWG approved the April 2024 meeting minutes.

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Meeting Minutes

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10:00   **Introductions and Announcements** – Cassie Davis, NYS DEC (10 min).
- **Decision requested:** Approval of the April 2024 Meeting minutes.

Decision: The WTWG approved the April 2024 meeting minutes.
- Data Dashboard Release Announcement - Ruth Cassilly, UMD
    - Ruth and Kaylyn presented on the Data Dashboard 2.0 to the WQGIT at their April 2024 Meeting. The presentation from that meeting can be found here.
    - The updated version migrated from Tableau to ESRI software. There are ongoing updates being made. The team appreciates that so many people reached out with comments; they are being incorporated into future improvements.
    - The public release of the Data Dashboard 2.0 will be on **May 9th**.
        - There will be a link on the website to reach out with questions, concerns, or input.
    - Tyler Trostle (in chat): Olivia, apologies if I missed this, but the data dashboard is not to replace the tableau, correct?
    - Olivia Devereux (in chat): No, it is not.
    - Olivia Devereux: The data on Tableau comes from CAST and is put up there for the duration of Progress so that people can see the results as we move along. Once Progress is finalized, the data become public on CAST and all the trends over time, graphing capabilities, etc are publicly available on the CAST homepage. Tableau is a tool to use during the process and the Data Dashboard has a different audience and role. It will be updated at some point with the most recent Progress.
    - Ruth Cassilly: The current version of the Data Dashboard being released uses the 2021 Progress, but we will be updating to 2023 Progress over the summer.

10:10   **NEIEN Update** – Jessica Rigelman, J7 Consulting (5 min)

Jess had no updates to the appendix and said that she hadn't heard anything from the states.

10:15   **BMP Planning and Tracking: Supporting Precision Conservation** – Charlotte Weinstein,
Chesapeake Conservancy and John Dawes, The Commons (60 min)

Note: Katie Walker was unable to attend, so Charlotte Weinstein stood in for her. Charlotte and
John provided an update on research and development for an integrated BMP planning and
tracking system to better tie local implementation efforts to regional goals. They focused on
feature developments within the FieldDoc platform made over the last 6 years, and how these
tie together to create an improved system for shared reporting and easy access across funding
programs.

Discussion:
Cassie Davis: Can you import projects as a point, or does it have to be a polygon/line? I noticed
in all your examples used a polygon shapefile.
John Dawes: With these updates, we've significantly opened up the ability to ingest any kind of
spatial data. We accept points, polygons, lines, and multi features. That's something that our
users brought to our attention, where they were struggling with the specific location
information. In some cases, people might just have point geometries and not necessarily a
polygon or a line. We can accept all of that, and what's nifty is with FieldDoc's import module it
will bring everything in and if you need to change geometry later, it keeps track of all of that. Say
our prescribed grazing was a centroid of a field and down the road we had a polygon for it, we
could import that in and replace this geometry and it would also update the geometry type in
our system. We've moved to a place where we can be much more agnostic and accommodating
of data, because we really underestimated the variety of ways in which people were collecting
this information. We had to make sure the framework was flexible enough to accomodata all of
it, so the answer is yes, we can definitely accommodate a variety of geometries.
Cassie Davis: This is a question for you and jurisdictions that are using FieldDoc right now, I
know you mentioned PA with the CAP program and MD had a grant program. Is the idea that
these would be outside of their traditional reporting to the Bay Program? This would be an
outside database for them to use to collect projects and then they would upload both to
NEIEIN? I was confused on how it would coincide with our state reporting right now.
John Dawes: I'm a very firm proponent of 'if its not broken, don't fix it.' At the same time, for
newly established programs, where you effectively need to cast a wider net and find data that
would otherwise go unreported, FieldDoc is a really good match for that. The other thing I
would say is that I know it can be very challenging for the states to move platforms but if there's
a goal for a newly established program to start diving into this tracking process, it can be a
significant value add. One of the pieces that we've observed in a number of reporting workflows
is that typically all the programs that require practice reporting tend to use a number of
different systems. Practices and projects on the practitioners' side are potentially reporting the
same practice to multiple different platforms. That's challenging because if your practice is the
same and going to different systems, they're going to have different ideas and you're going to
have to do some massaging to reconcile that. By standardizing it in one platform and using a
module like PAX (?) we can relate the same practice to multiple programs and establish that

chain of custody without duplicating the respective practice. It's a gradual thing and I think testing the waters with data that are not already counted by systems is a good way to inch in and gradually expand from there. I know Tyler from PA DEP is on the call and from our efforts with them we started with a subset of data through the CAP program. We're very confident that those are discrete practices that we can isolate and start to use in this tracking. We'll see how that expands, but definitely a good solution for community programs or sets of practice data that aren't already counted.

Scott Heidel (in chat): Are you limited to multiyear BMPs or could annual BMPs like cover crops be entered as well? How would overlapping BMPs be tracked such as Ag Erosion and Sediment Plans that cover the farm?

John Dawes: For annual BMPs we do have coverage there and they are handled the same as others. For the footprint, users are typically uploading the farm boundary. With that practice, implementation is occuring over a year, and so if there is a new practice on the same field, you can effectively copy the practice and specify the year its being applied to. That's typically how we handle BMPs like cover crops to some degree. For Erosion and Sediment plans, those are a little bit broader. With each of our practices, we have an 'extent' field that specifies the area covered by that respective plan, and the footprint would likely be the area of the farm that's under the plan. That can be customized, and it gets down to the key elements of those overlapping practices that you want to document. If there is a goal of reporting that through our NEIEN module, we would make sure that that practice has the necessary measurement components. Your geography could be flexible, represented by the area or centroid of the farm. What's really important is making sure we have the BMP names and the measurement names and units that are tied to that discrete practice. That is something that can be supported but we would need to get all the details to make sure we're meeting all the respective requirements.

Bill Keeling: This prioritization depends on what? An estimate of what the BMPs will do and where you're going to do them? What is that based on?

John Dawes: The underlying nutrient and sediment load reduction estimate we're using is based on the CAST Isolation Scenario Tables and that gives us a general idea of what that loading rate would be. I can walk you through what the process looks like.

Bill Keeling: We have not found those values to be very representative of what we actually see or what CAST will ultimately predict. The Isolation Scenario Tables are not something we typically use.

John Dawes: We are working to establish a standard, based on our partners at the Bay Program, we've tried to adhere to a specific standard. That being said, our modeling framework in FieldDoc is fairly agnostic. We have been exploring a number of models that are pretty effective in localized nutrient and sediment load reductions. Typically for each of these practices we have a set of algorithms we're running that are based on the site. As an example, to speak to this, and I'm a little bit over my skis because this is Ali, Scott, and Drexel's wheelhouse, but I can give you a general overview of how this works and if you need more information, I can connect you to Scott and Ali. Effectively, the service that's established on the FieldDoc side, what we're collecting from the user is the location and practice type on entry. From there, those data are sent to Drexel's BMP API and we're able to search based on the location, the land river segment,

and the loading rate for that land river segment. From there, we utilize Drexel's watershed delineation API and zonal statistics to get at the contributing area for that practice and calculate land use distribution within that contributing area. For each of the pollutants, we have their respective efficiencies, and are reducing out the area that's treated for that specific practice. The important thing to note is that we're using the land use efficiencies that are in CAST to be aligned as closely as possible and ensure coverage.

Barry Evans: Briefly, the difference is that we compare the reduction you get with CAST with another calculation. A good example is forest buffer; with CAST every acre of forest buffer can either treat two to four acres of upland ag land. What we do is look at the area that's draining to the buffer, which could be much bigger than two to four acres, and they might have more or less ag land than you think. We're saying that if you are treating more land, you have a good chance of reducing at least your CAST output if not more. We're comparing the two and telling you what's likely or less likely to occur. In this case, since you've got a bigger area draining to a buffer, you're going to reduce more pollution and we tell you that specifically with the metric.

Bill Keeling: So, when CAST changes, all this changes in your system? The most typical buffer we get is 35 foot, not 100 foot. Can this be scaled down for that?

Barry Evans: Yes.

John Dawes: My understanding is that watershed delineation is based on that practice footprint size. I would think that would absolutely scale down if you are doing a smaller buffer. It would scale based on the respective footprint.

Bill Keeling: But the opportunity calculations were based on 100 foot, not 35 foot, right?

Barry Evans: You depict the buffer as you see on the screen. You can define a width and length for a buffer by drawing a polygon to whichever dimensions. It's up to the user to define the polygon.

Bill Keeling: I understand the implementation, but what I'm talking about is your factors used for assuming a 100 foot buffer to set the stage of where to target. If you reduce to 35 foot it would affect your opportunity areas.

John Dawes: That's correct. The opportunity layers that I was showing earlier, those are based off 150 foot. Those are not related to the confidence index, which is just a prioritization exercise that VEE has undertaken to identify where to work. They're two separate analytics where one is showing opportunities based on buffer size and this is focused on the nutrient and sediment load reductions relative to what's being implemented on the ground. The other component to emphasize is that these are just guiding analytics. We can effectively establish modeling approaches that run based off the assumptions of what each of these discrete programs need, but these are not reported nutrient values. When we're in the NEIEN module submitting practice type names the true value or load reduction is really coming from the Bay Program since they're the authority for tracking. This is set up to guide folks and give them a general idea or understanding of what could happen as a result of implementation. We'll continue to refine that with user feedback, so it's helpful to know where you're coming from Bill, with scaled down practices, being from the 35 foot area that makes a lot of sense.

Bill Keeling: Is this based on CAST-19 or 23 or 21?

John Dawes: I believe we've just updated to the latest version of CAST, and we will continue to update that. Olivia has been awesome to work with and help us make sure we have all of the data we need from the isolation scenario tables and these different components to keep this stuff up to date. We plan to continue making updates and try to stay as closely aligned to CAST as possible.

Olivia Devereux: Right now, John is running CAST-19 and we will provide the isolation scenario data, which does have its drawbacks, I agree, but when CAST-23 is released, we will provide that. As a note, CAST-23 is tentatively scheduled for release in celebration of Bill Keeling's birthday, so it will be in the next few weeks. The replacement of CAST-19 with CAST-23 should be pretty smooth and simple.

John Dawes: Really appreciate the great discussion. To wrap up, with FieldDoc if you're a practitioner or want to kick the tires you can sign up for an account. If you're interested in exploring data management and leveraging this system for tracking BMPs for your own program, please reach out, we can provide support. We're really excited to grow the number of programs in the system. Currently we have roughly 23 programs tracking practices in the system and we're always looking for new ones to add and partnerships on that front.

Scott Heidel (in chat): The addition of 303(d) impaired and attaining stream layers as well as healthy watersheds layers would be beneficial for cross GIT planning between Healthy Watershed and Water Quality.

Next Meeting: **Thursday, June 6th, 2024**, from 10:00 AM – 12:00 PM.

Participants

Alana Hartman, WV DEP	Holly Walker, DE DNREC
Alicia Ritzenthaler, DC DOEE	Jackie Pickford, CRC
Arianna Johns, VA DEQ	Jeff Sweeney, EPA
Ashley Hullinger, PA DEP	Jessica Rigelman, J7 Consulting
Ashley Kelly, DoD	Jillian Seagraves, MD DNR
Barry Evans, Drexel University	Jim Spatz, PA DEP
Bill Keeling, VA DEQ	John Dawes, The Commons
Caitlin Bolton, MWCOG	Joshua Glace, Larson Design Group
Carl Friedrichs, VIMS	Katie Brownson, USFS
Cassie Davis, NYS DEC	Kendrick Flowers, USDA NRCS
Charlotte Weinstein, Chesapeake Conservancy	Kimberly Dagen, SRBC
Chris Brosch, DDA	Matthew Kofroth, LCCD
Christina Lyerly, MDE	Nicole Christ, MDE
Clint Gill, DDA	Normand Goulet, NVRC
Dave Montali, Tetra Tech WV	Olivia Devereux, Devereux Consulting
Dylan Burgevin, MDE	Ruth Cassilly, UMD
Elizabeth Hoffman, MDA	Samuel Canfield, WV DEP
Erin Penzelik, PA DEP	Sushanth Gupta, CRC
Eugenia Hart, Tetra Tech	Todd Deroba
Gregorio Sandi, MDE	Tyler Trostle, PA DEP
Helen Golimowski, Devereux Consulting	

Acronym List

API: Application Programming Interface
BMP: Best Management Practice
CAP: Countywide Action Plan
CAST: Chesapeake Assessment Scenario Tool
CRC: Chesapeake Research Consortium
DDA: Delaware Department of Agriculture
DEC: [NY State] Department of Environmental Conservation
DEP: [PA] or [WV] Department of Environmental Protection
DEQ: [VA] Department of Environmental Quality
DNR: [MD] Department of Natural Resources
DNREC: [DE] Department of Natural Resources and Environmental Control
DoD: [U.S.] Department of Defense
EPA: [U.S.] Environmental Protection Agency
ESRI: Environmental Systems Research Institute, Inc.
GIT: [Chesapeake Bay Program's] Goal Implementation Team
LCCD: Lancaster County Conservation District
MDA: Maryland Department of Agriculture
MDE: Maryland Department of the Environment
MWCOG: Metropolitan Washington Council of Governments
NEIEN: National Environmental Information Exchange Network
NRCS: [USDA] Natural Resources Conservation Service
NVRC: Northern Virginia Regional Commission
SRBC: Susquehanna River Basin Commission
UMD: University of Maryland
USDA: United States Department of Agriculture
USFS: United States Forest Service
VIMS: Virginia Institute of Marine Science
WTWG: Watershed Technical Workgroup