Nontidal Network Workgroup Monthly meeting

Wednesday, June 21st, 2023
1:00PM – 2:00PM
Meeting Materials: **Link**
This meeting was recorded for internal use to assure the accuracy of meeting notes.

Action items:

- ✓ Let Tammy Zimmerman (USGS) know if you would like to attend the September 19th Streamside Demo in York County, PA (she will also remind the group closer to the date).
- ✓ Tom Parham (MD DNR) will assist Mark Nardi (USGS) in resolving a permitting issue for the Patuxent at Bowie River Input Monitoring (RIM) continuous monitoring (con-mon) site in Anne Arundel County.
- ✓ In the future (post-July 2023), James Colgin and Nieko Santoro (USGS) will come to the Data Integrity Workgroup and request feedback on their reconstructed historical and current database; specifically, they will seek their guidance on the best way to aggregate individual constituents to get to Total Nitrogen (TN) and Total Phosphorous (TP). They'll also seek guidance on which constituent is the best for each jurisdiction.
- ✓ All future NTN meetings will include time to check in on the work to reconstruct the historical and data sets.

Minutes:

1:00 PM **Welcome and announcements**

- Mid-Atlantic Volunteer Monitoring Conference – June 29-30, 2023, Dickinson College, Carlisle, PA.
- Chesapeake Studies Conference – September 15-16, 2023, Salisbury University, Salisbury, MD.
- Potomac Conference – September 21, 2023, Lorton, VA.
- Virginia Water Monitoring Conference – September 26, 2023, Henrico, VA.
- Chesapeake Watershed Forum – November 3-5, 2023, Shepherdstown, VA. Session proposals were due June 11. Poster proposals are due July 28.
- CERF 2023 Conference: Resilience & Recovery – November 12-16, 2023, Portland, Oregon. Abstracts were due May 10, 2023.
- National Conference on Ecosystem Restoration – April 14-19, 2024, Albuquerque, New Mexico. Abstracts are due September 1, 2023.

- Chris Mason (USGS): The River Input Monitoring (RIM) 2022 loads and trends have been published. Links:
  - Chesapeake Bay Water Quality Loads and Trends

    - Nitrogen, phosphorus, and suspended-sediment loads and trends measured at the Chesapeake Bay River Input Monitoring stations: Water years 1985-2022
    - Breck Sullivan (USGS) in the chat: @Chris, is there a link we should be going to from your link to see a visual of the trends? Just seeing links to the data.
    - Chris in the chat: PDF summary of RIM results.
- Chris in the chat: The 5th option of the header scroll bar from the water quality website.... not ideal, but the best work-around we get with the new Drupal framework.
- Peter Tango (USGS): The job announcement for the CBP Office, Partnerships and Accountability branch chief (Carin Bisland's former position) went out. It is a GS-15 position.
- Tammy Zimmerman (USGS): Each year since we started working with York County, PA, we have had 6 different super gauges. 3 are nontidal network stations, and 3 are in smaller watersheds. Each year, they hold a "Watershed Week". This is a streamside demo going over all the instrumentation at a site, and this year it will take place on September 19th at one of the smaller watershed sites. The gauge at this site measures real time water temperature, specific conductance, pH, turbidity and nitrate. We run it like a nontidal network site, even though it's not, with monthly discrete water quality sampling, 8 storms annually, and development of real time loads for suspended sediment and nutrients. Send me a note if you're interested in joining the Watershed Week streamside demo.
- Mike Mallonee (ICPRB): I sent the Water Year (WY) 2022 NTN data set to USGS last week. I also created my WY events statistics spreadsheet. This spreadsheet has been posted to the calendar page if anyone's interested. It contains the station breakdown of different event types per station and total event types per year.
- RIM continuous monitoring (con-mon) deployments updates:
    - There are efforts to have one con-mon on each of the 9 major river systems. There are some new ones down in VA that have been placed.
    - Doug Moyer: For the VA sites at the Mattaponi, we have them outfitted and we just received the Submersible Underwater Nutrient Analyzer (SUNA) instrumentation. Two continuous nitrate instruments are deployed at the Appomattox and the Mattaponi. For the 5 VA tributaries, the only gap is continuous nitrate at the Rappahannock. Otherwise, all are instrumented.
    - Mark Nardi: There is an issue with the site for Patuxent at Bowie. We are having trouble getting permits from Anne Arundel County and are even looking for alternate sites.
    - Tom Parham: What exactly is the permit issue?

- Mark: Not exactly sure, would need to talk to Chuck Walker. Could you assist us with the issue?
- Tom: Yes. We can talk offline. Please keep me involved in this.
- Mark: Otherwise, there are some supply chain issues, but working through it.
    - For the Patuxent site: to run the SUNA it takes a little more infrastructure build out. That could be the issue. We have some fabrication done that needs to be bolted to existing infrastructure.
- Moving sites is not to be taken lightly. 1/3-mile move (as considered if permitting issue not resolved) is not too bad, but it's important to consider potential site moves carefully.

- Update on Avian Influenza impact on field monitoring protocols.
    - Are there updated protocols regarding safety procedures to avoid contamination and carry Avian Influenza into other areas?
    - There were no comments on this topic, but Peter said people may share protocols offline.

1:20 PM **Update on Nontidal Network Funding Sources – *Mark Nardi (USGS)***

- Mark: Thank you to Renee Karrh for helping with this effort in MD.
- We created some methods to join USGS and state data to understand where funding is coming from. We wrapped up with MD and hope to talk to PA next, then VA. The basis of this is to understand path of least cost from EPA to monitoring on the ground, and how the funding sources interplay.
- There are a lot of "quiet dollars" not accounted for dollars that go into these. How do we account for those? Do we need to? Kaylyn and I will have a conversation with Lee once we have MD straightened out and how we want to represent this.
- Something that's come out of discussions with Renee is a better understanding of what DNR has to do to make it work. It's not simple. I think our biggest challenge is how to describe all the nuances and what they bring to the partnership.
- Peter: Going back to 2009 MRAT there was a need for a number on the value of the program. It had the number we know plus additional things we weren't necessarily capturing that made the program worth twice the value. You're addressing those less clear things that add value to the program.

1:25 PM **Update on Small Agricultural Watershed Monitoring Network Sites – *Mark Nardi (USGS)***

- Reminder of background/purpose – this effort comes out of a cooperative effort between EPA and NRCS to understand changes in water quality that may be impacted

by Best Management Practices (BMPs) or other conservation practices. In their budget last year, EPA included money to USGS to purchase equipment as well as some Operations & Maintenance (O&M) funds. Due to cost increases, however the O&M wasn't enough to run the network so we've been talking to partners, mostly agricultural partners, for additional funding sources. In DE, we talked to NRCS, DNREC and DE Department of Agriculture. We sat down with the secretaries of those agencies. However, nobody had the money to help.

- We were able to set in motion a 5-year Interagency Agreement (IA) between the USGS MD-DE-DC science center and DE NRCS moving forward.
- We intend to reconvene a group for site selection including NRCS, DE Department of Agriculture and DE DNREC. We will also bring in local conservation districts, who have the best on the ground understanding.
- In MD, we talked to MD NRCS and MDA. They are both very supportive. MD NRCS can potentially put it into their budget cycle this year, or if not this year, next year. I created a Statement of Work (SOW). I'm making these asks late in the funding cycle of NRCS which is a challenge so if it doesn't work for this year, it should work for next year. Thankfully, we have enough money to run 5 stations for a year, so it gives us time to find additional funding.
- In PA, John Clune is talking to PA DEP. The SRBC work on Hammer Creek is a potential site. USDA ARS are interested in collocating these sites with existing infrastructure.
- Tammy Zimmerman: They were interested in Little Conewago and Conewago Creek at Bellaire, PA which is a watershed with 2 NTN sites (the upstream site is at Bellaire and the downstream site is at Falmouth). We're already measuring streamflow, doing 20 discrete samples per year, and continuous turbidity, specific conductance and temperature at that site.
- In VA, Jimmy Webber is working with NRCS and VA DEQ and has had some challenges.
- Mark Nardi: EPA has provide O&M dollars and if we can find enough money from DE and PA to support VA, we are seeing this as one large effort, it doesn't matter as long as network gets established and running. We can move that money around.
- Peter: The 5 stations was an ask but not an upper bound – as those sites get developed maybe there is opportunity to include WV, NY, DC.
    - Mark: DC may be tough because a requirement of the sites is to be agricultural sites.

1:30 PM **Continuation of QA and database discussion** – *All*

- Doug Moyer (USGS): This effort is underway. The leads are James Colgin and Nieko Santoro. They are looking at what will it take to reconstruct historical and current data sets with what we have from the Bay community. What data from the data hub can cover WRTDS, NTN data sets. For current data through 2010, it covers it well because everyone has transmitted that to DUET. The issue is it's more hit or miss before 2010

especially for the 1980s, 90s, early 2000s. The water quality portal may serve as a great platform. James and Nieko have built scripts to scrape data from those sources and compare to what we have thus far. Chris Mason is also involved. The deadline for having the raw data reconstructed in a single database is by end of July.

- Then, they'll work on parsing out the NTN sites for each jurisdiction and sending the data to each jurisdiction to help perform quality assurance (QA) on those data points. We want to ensure that ultimate decisions around any suspect data points are made by data providers. All jurisdictions will have a major role in reviewing and approving the data for this NTN database reconstruction.
- Then, they'll take this reconstructed and improved data set to the Data Integrity Workgroup and seek guidance from labs analyzing these data. They will seek their guidance on the best way to aggregate individual constituents to get to TN and TP and come up with decision rules for that. They'll also seek guidance on, if directly measured, which one in our hierarchy of constituents is the best for each jurisdiction. Right now, we have a one size fits all method. We want guidance from labs on decision tree to come up with TN and TP and in cases where multiple constituents representing single constituent (ie lab filtered, field filtered for nitrate). Right now, James and Nieko are working on seeing how complete the data are and filling data gaps consulting originators of the data. Hopefully between the data hub and water quality portal, we'll be able to recreate everything.
- Peter: If we're already producing trends and the data that we do have goes back to the 1980s, is the best available data we have what we're trying to verify?
- Doug: The goal of the effort is to ensure the database we constructed for the NTN - and some sites go back to the 80s - to make sure we can reproduce it on the fly. Right now we're not sure if we could reconstruct it. In the past, it was piecemealed together as the data network grew. Now, we want to make sure we have a solid foundation of the data we're using, and if we're ever questioned, we can point to exactly where we're getting it and recreate it without a concern.
- Peter: If this is successful, would this be published with an explanation of all the data sources?
- Doug: Part of the deliverables coming out of this effort is that James and Nieko will prepare a data release (USGS product) with raw data considered/available for all NTN sites from 1985-present. Then, there will be a publication describing the process for constructing this database and decisions made to create the WRTDS input files as well. As normal, Chris Mason will lead the effort working with James and Nieko on how we incorporate those WRTDS files into the analysis for loads and trends. That will be part of the NTN data release for load and trend analysis. These efforts will help fulfil QA and QAPP requirements for jurisdictions and USGS on data handling from transmission to EPA, and review process for load and trend analysis.
- Mark Nardi: Thank you, this will add a lot of value and confidence in the data.

- Doug Moyer: Let's have this topic as a placeholder in each NTN meeting.

2:00 PM Adjourn

Participants:

August Goldfischer (CRC), Breck Sullivan (USGS), Chris Mason (USGS), Cindy Johnson (VA DEQ), Doug Chambers (USGS), Doug Moyer (USGS), Durga Ghosh (USGS), Jamie Shallenberger (SRBC), John Clune (USGS), Kristen Heyer (MD DNR), Lori Brown (DE DNREC), Mark Brickner (PA DEP), Mark Nardi (USGS), Meighan Wisswell (VA DEQ), Mike Mallonee (ICPRB), Peter Tango (USGS), Tammy Zimmerman (USGS), Tom Parham (MD DNR), Tyler Shenk (SRBC), Nieko Santoro (USGS)