Integrated Trends Analysis Team (ITAT)
Meeting

Wednesday, October 27 2021
10:00 AM – 12:00 PM

Meeting Materials: Link

This meeting was recorded for internal use to assure the accuracy of meeting notes.

Action Items

- ✓ **Get exact dates and times for CERF presentations from Qian, Robert, and Mike to share with the larger group.**
- ✓ **Determine which groups have received the Potomac StoryMap and share with groups that have yet to view it.**
- ✓ **Contact Gary Shenk and Lew Linker about expectations for the tributary summaries small group timeline.**
- ✓ **Rebecca Murphy and/or Breck Sullivan will reach out to Efeturi Oghenekaro about building DC data and capacity into the tributary summaries process.**
- ✓ **Breck Sullivan and Vanessa Van Note will reach out to their managers to get more specific feedback on how critical the "Insights on Change" section is to the tributary summaries.**
- ✓ **Mike Lane will present at a future ITAT meeting on the Rappahannock tributary summary.**

AGENDA

10:00 – 10:05 **Welcome – Vanessa Van Note** (EPA) and **Breck Sullivan** (USGS)

Announcements -

- CERF Conference – Identify members serving as presenters. Share dates and times of session with the group in follow up
- Chesapeake Community Research Symposium - June 6-8, 2022, Annapolis, MD. (Hybrid: virtual and in-person. Subscribe here for updates.) Session proposals due December 1, 2021.

Summary

The meeting began with members briefly introducing themselves. Vanessa Van Note asked for members presenting at CERF briefly describe when and what their presentations are about. Rebecca Murphy shared that she will be presenting on General Additive Model (GAM) development for analyzing tidal trends and applications for San Francisco and matching the watershed loads to nutrient concentrations (November 9). Qian Zhang shared that he is collaborating with Isabella Bertani on an insights into data workshop which is spread out over three days (November 8-10). Roberto Llanso added that he is presenting with Mike Lane on the value of long-term monitoring at CERF.

For the Chesapeake Community Research Symposium, Qian Zhang, Isabella Bertani, and John Clune plan on submitting a proposal, but they are still in the early stages of development.

10:05 – 11:00 Update from WQGIT Monitoring Meeting

The CBP monitoring team and USGS presented monitoring findings, and discussed with the jurisdictions and other CBP partners, opportunities to apply the monitoring results and modeling tools for water-quality decision making at a recent WQGIT meeting. Breck Sullivan provided feedback received from participants and went over responses to the JamBoard where stakeholders commented how they want to work with the team to further apply and interpret the monitoring results.

Summary

Breck Sullivan gave an overview of the Water Quality Goal Implementation Team (GIT) Monitoring Meeting, briefly summarizing the presentations that Rebecca Murphy and Qian Zhang gave. Rebecca added that the tributary summaries are all available for download on the CAST website.

Breck then began reviewing the Case Studies: Using Results from the Tributary Summaries JamBoard from the Water Quality GIT meeting. For the first question, Breck and Rebecca went over responses, commenting that the Choptank and the Eastern Shore received lots of interest. Breck then asked ITAT members for their input on determining if there is a particular tributary summary that should be focused on going forward, or if more input should be solicited from the Scientific and Technical Advisory Committee (STAC). Carl Friedrichs suggested the York River due to the long-term availability of 15-minute data and the mystery over why the river has been less responsive to watershed load trends. Qian added that a watershed comparison between the two tributaries of the York River would be an interesting area of focus because of their different trends. Rebecca agreed with these comments and also suggested the James River. Breck and Rebecca stated that at some point there needs to be a transition from asking for feedback to determining which tributaries to focus on. Rebecca then asked for the input of the Virginia Department of Environmental Quality. Roger Stewart, Jimmy Webber, and Amanda Shaver indicated that the York River is an area of interest as well, especially around Harmful Algal Blooms. Breck suggested that we should look into previous work on the York. Rebecca, Breck, and Jimmy suggested looking at the Eastern Shore, potentially identifying a shortlist for STAC. Elgin Perry commented that to compare with the York, a tributary summary should be compiled for a river that does have a strong response in terms of controlling chlorophyll and oxygen. He mentioned that the Patuxent could be considered here, but it gets a lot of attention already, so it would be good to perhaps focus on a different tributary.

For the second question, feedback revolved around how to communicate the information contained in the tributary summaries. Breck reviewed the different options that WQGIT members were polled on, with A (More StoryMap Type polished summaries) and C (Small group, tributary focused meetings to explore results) being the top choices, which aligned with current efforts. Rebecca described the Potomac Tributary summary StoryMap and its uses. Qian commented that Mark Nardi might have been involved in the development/sharing of the Potomac Tributary StoryMap. For Option B (Presentation template designed so one can use any Tributary Summary's graphics and tables for each meetings), Breck commented this might not be able to be completed given current capacity, so perhaps using GIT funding to contract this work out might be the best option. Given the higher level of effort required for StoryMaps, some paths to complete this task might come down to Staffers or C-StREAM interns. For Option C on the small groups, Vanessa asked what this would look like, and which GITs and individuals would attend. Rebecca and Breck responded that there could be multiple interpretations, but they agreed with Vanessa that inviting more than the Water Quality GIT members was ideal.

For the third question, feedback centered on long-term needs post 2025. Breck reviewed the question and responses, indicating that the impact of water quality on living resources is of particular note and

could be linked to the tributary summaries. Elgin asked about one of the comments that was about non-tidal waters, to which Rebecca responded that because there is less focus at the Water Quality GIT on the tidal areas, they may have taken that non-tidal approach. Elgin asked for clarification about mitigation banks and Vanessa responded that they refer to stream restoration or other similar projects.

11:00 – 11:50 Discussion on small group activities for Tributary Summaries

Stakeholders are interested in utilizing JamBoard and continuing small group discussions on how to incorporate "insights on change" into the other tributary summaries. The ITAT Co-Coordinators heard from the workgroup on how the Potomac small group operated, lessons learned from the effort, and feedback on how to move forward. Some questions considered included:

- What should these small groups look like?
- What type of expertise is needed in these groups?
- Where should they happen with stakeholders?
- How do we improve capacity for these summaries?
- What information do we want to include in the Insights in Change section?

Summary

Vanessa reviewed the work completed for the Potomac Tributary summary, specifically Rebecca's literature review and the other brainstorming and work required. Vanessa added that there was a Potomac focused ITAT meeting in September 2018, which lead to the insights on change summary found in that report. Rebecca added that there were preliminary tidal insights from Renee Karrh and her team at Maryland's Department of Natural Resources (MD DNR). Vanessa stated that the goal for this meeting is to develop a strategy today about approaching these tributary summaries. Breck commented that Mike Lane has been working on the Rappahannock tributary summary and plans on presenting his updates at a future ITAT meeting.

Questions and Responses on the JamBoard: Link

For question 1 (What should these small groups look like?), Rebecca mentioned these small groups can include changes from the original Potomac Tributary summary, such as other datasets like adding submerged aquatic vegetation (SAV) data and data from the District of Colombia (DC). Rebecca added that there hasn't been DC data in the past because they weren't a part of the process previously. Efeturi Oghenekaro added that DC would be very interested in participating but hasn't in the past because of a lack of capacity with data analytics. Rebecca offered a training session with DC on how to use Baytrends on the Chesapeake Assessment Scenario Tool (CAST). Roger Stewart added that we should include individuals from publicly owned treatment plants, possibly Hampton Roads, in these small groups because of their work to reduce loads and monitoring data. Vanessa and Mike Lane agreed, with Mike stating that smaller tributaries in particular are significantly affected by issues surrounding wastewater. Everyone agreed there was not a need for a separate meeting and these small groups could take place during part of the normal ITAT meeting time. Mike Lane said that the Elizabeth River comes to mind given the plentiful data, its status as a small, industrialized tributary, and Margie Mulholland's work with phytoplankton. Given this discussion, the major changes discussed for the small groups would be the data being used and the representation on the small groups.

Elgin Perry commented that we should start with a conceptual model of the tributary with important factors, like nutrients and temperature, and then acquire experts for each factor, plus data analysts and modelers to understand what is going on. Mike Lane said he thinks Elgin has a good point here. Carl Friedrichs responded saying that if the resources are available, he would like to do what Elgin is suggesting, but if not then follow the format used for the Potomac tributary summary. Breck added that

a consideration should include reproducibility as we want to do one every few years with updates. Rebecca mentioned that these are all in a range of possibilities, and that we should understand how important this is to our stakeholders. Vanessa and Breck stated that they will reach out to their managers about the insights on change and how valuable a conceptual model might be. Rebecca provided two general conclusions at the WQGIT monitoring meeting: local action makes a difference at the local scale and that reductions in the watershed can be seen everywhere. Rebecca said we should try to provide a few conclusions in the tributary summaries to provide insight. Vanessa said we need some more feedback to ensure people are tuned in and we can give more targeted feedback on the insights on change section. Elgin clarified that there are two parts to the tributary summaries: the facts gathered about each tributary summary and then the interpretation/conclusions. Vanessa responded that the purpose of the tributary summary small groups would be to bring in experts to speak about on-going research. She also added that it is about addressing a disconnect in understanding if the work going on land is making a difference in the tidal waters. Rebecca said she likes this portrayal of the purpose of the tributary summary small groups and that most of the tributary summaries is comprised of images of the GAM results and graphs. Rebecca stated that insights on change is where we are trying to bring in the why and how work in the watershed comes into play. Elgin responded that the new CAST data about below the fall line could come into play. Vanessa suggested that the next step is understanding insights on change and where we want the small groups to be used, then bring in the experts at a later stage. Qian Zhang commented in the chat that the small groups can help improve the conceptual model for a specific tributaries by incorporating knowledge of the participants, wastewater treatment plants, and other factors. Rebecca agreed with this and said this would build on the last ITAT meeting where cluster results were presented. Rebecca said maybe the next meeting should include the key questions we want to create moving forward. Breck asked a follow up about the time of the next tributary summary and literature review time constraints. Mike and Rebecca both said that literature reviews are time intensive. Breck suggested maybe using the small groups to pool knowledge more efficiently relative to individuals performing literature reviews.

For question 5 (How do we improve capacity for these summaries?), Rebecca added that it would take a lot of effort and time to pull together the literature review of the tributary summaries. She said that she is able to pull together tidal trends graphs and changes pretty quickly as it is automated, but it takes a while to change the text around it. Qian said the typical breakdown of the work might include Qian working on the loads and Olivia working on the BMPs and land use, with word processing formatting necessary to bring it together at the end. Qian and Rebecca agreed that the heaviest aspect of the work includes the insights on change section. Elgin suggested cycling through the more intensive parts of the tributaries every few years, if it's not possible to increase automation. Mike said in the chat that it would be very difficult to get groups of investigators to do all tributaries every year. Rebecca stated the goal is to update the trends and loads every two years, but that does not have to include the insights on change sections. Vanessa asked if there are resources available to do it every two years, but members stated that is currently unknown by them and it does not appear that many resources are readily available.

For question 4 (What information do we want to include in the Insights on Change section?), Vanessa asked what else should be included in that section. Suggestions included SAV data (which is updated annually by the Virginia Institute for Marine Sciences (VIMS)), continuous monitoring data (oxygen, chlorophyll, parameters in shallow waters), and DC monitoring data (includes nutrient monitoring). Carl Friedrichs provided information on the limitations and uses of the continuous monitoring data. Elgin mentioned that a question to consider is how to help meet standards and how to better communicate with farmers, specifically the message that use less nutrients is not the message, just don't let them

seep into the river. Vanessa asked if it would be helpful to link water quality to the source in the insights on change section. Rebecca said making this linkage has been very difficult, except for linking wastewater treatment. Vanessa stated her concern about how to appropriately draw conclusions given the less explicit linkages, sometimes caused by factors like lag time. Qian commented that the insights on change section is predominantly about the tidal waters and that maybe the PowerPoint that Jimmy Webber recently produced could be leveraged for answering these types of questions. Mike commented in the chat that one may be able to differentiate in the Insights on Change section between, known stressors that appear to fit the conceptual models, trends that do not fit conceptual models and have no clear explanation, and speculative explanations that account for non-fit trends and/or that one should be watching out for in the data.

11:50 – 12:00 Rescheduling Discussion for the November ITAT Meeting

Summary

Given that the usual ITAT meeting time would fall very close to the Thanksgiving holiday, it was decided that Alex will send out a poll to determine the best time to meet in November.

12:00 Adjourn

Participants:

Jon Harcum, Breck Sullivan, Rebecca Murphy, Amanda Shaver, Vanessa Van Note, Andrew Keppel, Carl Friedrichs, Carol Cain, Cindy Johnson, Efeturi Oghenekaro, Elgin Perry, Erik Leppo, Jimmy Webber, Mike Lane, Qian Zhang, Renee Karrh, RIkke Jepsen, Roger Stewart, Roberto Llanso