

South River Science Team, December 11, 2018

Meeting Notes

Attending in Person: AECOM: Cameron Dixon, Josh Collins, Andrew Miano, Ceil Mancini, Scott Gregory. DuPont: Mike Liberati, Ralph Stahl, Nancy Grosso. DEQ: Kurt Kochan, Calvin Jordan, Tara Wyrick. JMU: Robert Brent, Tom Benzing. VDGI: Brad Fink, Paul Bugas. City of Waynesboro: Luke Juday, Trafford McCrae. Other: Anne Condon (Fish & Wildlife), Doug Wolfe (August County), Don Kain (retired)

WebEx: Will Clements (Colorado State), Rachel Ellick (VDH), Reed Harris (consultant), Ralph Turner (expert panel). HDR: Patrick Blandford, Phil Werner. DuPont: Kathy Adams, Tim Bingman. AECOM: Bill Reese, Ron Wesley, Sagar Thakali, J.R. Flanders, Dana McCue

The following represent notes from discussions and questions during the sessions. The presentations are available at: <http://southriverscienceteam.org/programs/>

Monitoring: Andrew Miano (AECOM)

- Some discussion about integrating the statistical model based on monitoring results with Reed Harris' mechanistic model. The models won't be integrated, but the hope is that there will be a convergence of results.
- Question about normalizing results for YOY. Maybe in future there will be enough data to use regression analysis.
- Will Clements asked if bank remediation was a variable in the analysis. It was explained that "year" helped explain that, given that remediation occurred in particular years.
- Dave Hirschman asked how historical flows compare with methylation.
- There was some discussion about data variability between wet and dry years and effects on Hg (e.g., methylation).

Pilots: Bill Reese; Josh Collins (AECOM)

- For surface water pilot, low contact time could explain negligible reductions, but it was pointed out that THg did adsorb to the biochar. There was more adsorption to the outer edges of biochar sleeves compared to the core.
- Calvin Jordan suggested considering using floodplain amendments for City projects, since there are additional benefits to biochar, e.g., stormwater, absorbing water. The City has interest in issue besides Hg, such as dealing with compacted soil and stormwater.
- For Knotweed pilot, Josh Collins explained that there is a hazard of overspraying, as some of the planted material would be impacted. He also explained that the injection method is very labor intensive and might not be practical for larger areas. Also, injection method requires stems to be at least $\frac{3}{4}$ " in diameter, and by that time, the plants are rather tall and shading out the planted material. The basic recommendation is repeated treatments over 2-3 years. Biological controls (introduced beetles) may be coming on as a new approach. Waynesboro is also doing knotweed control along the greenway, so there is an opportunity to coordinate.

Channel Bed Recovery: Nancy Grosso (DuPont)

- Nancy Grosso explained that 35% of Hg in surface water is derived from fine-grained sediments. Residence time for sediment to a depth of 25cm is about 36 years.
- Dr. Jim Pizzuto has provided a proposal to look at the turnover for the top 10cm of sediment.
- Calvin said that anecdotal evidence indicates that the river has changed in the last 6 months with all the high-water events, and that baseflows are generally clearer and higher/deeper. An example is along the pilot bank, where a long channel has formed.
- Robert Brent said it is important to look at the longitudinal effect of sediment being scoured and deposited. This is equally important as residence time of sediment in the system at any one place. Some discussion on effects seen sooner near banks, but questions how and when this may be translated downstream.
- Will Clements said that most recent General Climate Models (GCM) suggest big events are likely responsible for most of the sediment movement. Asked if the new work will account for more frequent/larger storms due to climate change?

Remedial Designs AECOM: Cameron Dixon

- There was a discussion about the differences between the launchable stone toe used at Constitution Park and City Shops versus the dug-in stone toe used at Allied. Cameron explained the pros and cons of each approach.
- A question was asked about whether Constitution Park or City Shops experienced any damage from the recent hurricane or big storms. Cameron said there was minor issues, but these may have been more long-term than due to a particular storm event. In general, the banks held up well.
- There seems to have been a lot of damage (downed trees) to non-remediated banks between Allied and Basic Park.

Future of SRST

The group broke into 5 small groups to discuss the issues highlighted in the PowerPoint presentation by Mike and Dave. The presentation addressed the history of the SRST, possible future directions, and a recap of issues that surfaced from meetings with various regional and local organizations. Note that Group 4 notes will be added at a later time.

Group #1

In general, we all thought the idea of a watershed focused group was a good idea, acknowledging that there are a number of these types of organizations already in the Shenandoah watershed.

We felt the greatest benefit of this organization would be networking and collaboration.

The organization needs to be focused on one thing, such as water quality, and should include the entire South River watershed.

Meetings should be held once a year and should be modeled after the Shenandoah Summit. The organization itself should be modeled after the Pure Water forum consisting of a Coordinator and Board of Directors. The Coordinator should be paid and funding should come from a secure source so that the

Coordinator doesn't spend their time searching for funding to pay for his/her position. The Board of Directors should be volunteers.

The annual meeting should consist of reports from various organizations that work in the watershed on what work they have done or plan to do in the watershed. Examples would be The Headwaters SWCD reporting on BMPs implemented in the watershed; TU and water quality/habitat improvement work done in the watershed, etc. Also, any research being conducted in the watershed or research that has relevance to the watershed should be included. Invitees and presenters to the meeting should include groups representing all interest in the watershed including advocacy, government, education/research and industry.

Group 2

- Keep a local focus (on South River) on water quality
- Facilitate sharing/archiving of technical information so that it can be shared with other organizations and landowners (farmers) as they come on-board to land management changes
- Provide guidance/administrative assistance to landowners for grants, program applications (e.g. CREP) etc.
- Engage other groups – businesses, municipalities (i.e. Stuarts draft), etc.

Group 3

- Suggest a sort of central 'Board or Team' to 'manage' the South River Watershed Assn., with committees reporting /updating as appropriate
- One overall goal for the Association would be something like:
 - Stream Health
 - Hg: RCRA
 - Fish: TU; DGIF
 - Recreational
 - Agricultural Community
- Focus on South River Watershed only, but be aware and network with others
- One event/summit per year with Hg issue reported on
- Separate Hg Committee (driven by DuPont) to have its own focused meeting on technical aspects of ongoing remediation and studies

Group 4

- Friends of the Middle River serves as a good example, engages a large population, river events
- The Greenway is a unique feature of the SR and can be used to focus activities
- Need to reach out to non-traditional participants
- Keep the focus on the SR watershed, don't expand to other watersheds
- Should have at least one annual meeting to discuss Hg monitoring results
- Bring in the Chesapeake Bay programs and the potential impact from the SR
- The existing talent in the SRST can benefit citizen science efforts

Group 5

- SRST is a long-lived organization with a proven track record of collaboration and applied research.
- Money is guaranteed through DuPont/Corteva with no end date in sight. SRST support is built into the NRDC/Sierra Club Settlement and at its core is reliant on DuPont coordination. However, this means it may be a good idea to expand the mission of future organizations.
- Co-Benefits is an important part of the future on any organization. NRDA remedy was focused on ONE issue but could expand into other pollutant reduction benefits.
- What is the niche for SRST? So many groups already in the Water Quality/Watershed/Land conservation local nexus.
- POSSIBLE NICHE: Knowledge transfer and applied research