Benthic TMDL Study on Deep Run, Dover Creek, & Upham Brook Watersheds Located in Henrico & Goochland Counties & the City of Richmond

Community Engagement Meeting #1 Summary

July 10, 2023 @ 2:00 PM
DEQ-PRO
4949-A Cox Rd.
Glen Allen, VA 23060

Attendees: 24

Commonwealth Commercial, 4800 Thalboro LLC	Allyson	Rider
Commonwealth Commercial, 4800 Thalboro LLC	Carl	Blackwell
DEQ	Denise	Moyer
DEQ	Jennifer	Palmore
DEQ	Mike	Shaver
Goochland County - Env't & Land Development Review	Emily	Langridge
Henrico County - MS4	Deana	Williams
Henrico County - Resource Protection Areas	Matthew	Batdorf
James Madison University	Dr. Robert	Brent
James River Association	Nathan	Thomson
James River Association	Tom	Dunlap
Sabot Hill Owners Association (Dover Creek)	William	McGuire
Schnabel Engineering	Andrew	Harrbon
Schnabel Engineering	Emily	Seamster
Stantec on behalf of VDOT	Ashley	Hall
SWCD-Henricopolis	Charles	Lively
SWCD-Henricopolis / Resident	Stacey	Sovick
SWCD-Monacan	Jonathan	Lyle
SWCD-Monacan	Keith	Burgess
VDOF	Amanda	DuBour
VDOT - MS4	Joseph	Parfitt
Vulcan Materials	Mac	Nzombola
Wetlands Studies & Solutions (WSSI)	Katie	Shoemaker
Williams Mullen	Speaker	Pollard

Meeting Summary

Staff members and project partners were introduced.

Community members went around the room and introduced themselves.

Section 1. A brief recap on the TMDL development process was given and a request for input from the community was made.

Section 2. An introduction to the multi-metric benthic invertebrate stressor analysis approach was presented. This approach uses a weight of evidence approach which evaluates all available information on potential candidate stressors. The TMDL is then developed to target pollutants that are identified as probable stressors.

Section 3. The stressor analysis findings determined that sediment was a probable stressor in each of the impaired streams. Phosphorus was a probable stressor in Dover Creek, Stony Run, and Upham Brook. Dissolved oxygen, pH, and organic matter were additional probable stressors in North Run due to natural wetland conditions.

Section 3.1. Lines of evidence supporting sediment as a probable stressor were presented. These included habitat scores and instream habitat metrics that are lower than the nearby reference stream. Total suspended solids and turbidity were significantly higher in some of the impaired streams than in the reference stream. Shifts in taxonomic community structure and functional feeding groups were also presented which indicated sediment as a stressor. Lastly, relative bed stability showed the streams exhibited significant embeddedness.

Section 3.2. Lines of evidence in support of phosphorus as a probable stressor in Dover Creek, Stony Run, and Upham Brook were presented in conjunction with low dissolved oxygen and large diurnal swings.

Section 3.3. Some lines of evidence supported pH, dissolved oxygen, and organic matter as probable stressors under natural conditions in North Run. These stressors are typical of natural wetlands.

Section 4. Landcover data from the Virginia Geographic Information Network (VGIN) 2016 Virginia Land Cover Database (VLCD) was presented for Dover Creek, Deep Run, and Upham Brook watersheds. Sediment and phosphorus loading rates will be applied to each landcover category to estimate the amount of pollutants originating from the watershed.

Section 5. The meeting concluded with the project timeline indicating there will be three community engagement meetings with the next CEM2 held in the fall of 2023. The final public meeting for the TMDL project should occur in the summer of 2024. The TMDL will then go to EPA and the SWCB for review and approval.

Discussion topics for the meeting

Section 3. There was some discussion about whether implementation of the TMDL will be mandatory. It was discussed that parts of a TMDL are included in the permitting requirements while others are voluntary non-point source best management practices.

There was a question raised about whether these TMDL requirements are in addition to the Chesapeake Bay reductions. It was discussed that while these impairments obviously impact the Bay, TMDL reductions for this project will focus on meeting local water quality goals.

There was discussion on how the sampling stations were chosen. The stations are a mixture of probabilistic monitoring, trend stations, periodic ambient monitoring stations, special study targeted stations, and/or publicly accessible stations. For example, Dover Creek is a probabilistic monitoring station, Stony Run is a targeted special study from the pipeline incident, and Deep Run is a targeted publicly accessible station.

There was discussion about different aspects and details of the stressor analysis. It was clarified that the threshold for determining a probable stressor was a causal analysis score greater than three. Group members asked about stressors from vehicles, and it was explained that those pollutants would fall in the sediment toxicity category. Questions were asked about dissolved oxygen data being used to support two different stressors. It was explained that low dissolved oxygen in combination with large diurnal swings indicates a nutrient stressor while low dissolved oxygen in combination with low gradient/low flow, low pH and high organic content points to natural wetland conditions. There was further discussion on the ability to dis-entangle the effects of multiple stressors. It is hard to look at just one stressor because of complex relationships so we use a system that includes multiple lines of evidence to help with the assessment.

There were questions about the number of sampling events and if sampling includes storm events. The amount of data available for different stations varies, but this information is presented in the full benthic stressor analysis report. For routine sampling, no specific weather conditions are targeted, so it is assumed

that over time samples will represent the natural range of flow conditions. For continuous monitoring, a week or more is targeted, so any storms during that week are fully captured in the monitoring. As requested, the entire draft benthic stressor analysis will be sent to participants for further review.

There was discussion on the sediment stressor findings and how far upstream the source would have to be to alter the monitoring site. It was noted that sediment is less site specific and more of a watershed issue coming from throughout the watershed. Group members asked if phosphorus in Dover Creek could be from historic sources since most livestock is fenced out. It is not likely historic phosphorus because the levels are consistently high (similar to below a sewage treatment plant point source). There was mention of farm pond overflow, dairy and horse farms, biosolid application, and failing septic systems as possible sources of nutrients. Other possible sources mentioned were phosphorus bound to sediment particles, till vs no till practices, and the possibility that phosphorus can run off in solution even with no till best management practices being incorporated.

There was mention of two golf courses on North Run and if they would be an influence on water quality. Golf courses could be a source of nutrients too.

Section 4. Discussion ensued that the current land cover database uses 2016 data. Therefore, we are looking for any updated land cover data since 2016. There was clarification on the definition of turf grass (which is maintained grass), pasture (which includes a subcategory of hay), and barren (which is bare earth modeled with a high sediment load). It was discussed that barren areas shown in the Stoney Run and Deep Run watersheds may be construction that has since been completed. Inputs on land cover labeled as cropland on North Run were identified as a hay field in one area and a construction site for a small subdivision in another area. WSSI will investigate each of these instances and request further input if needed.

There was mention that redevelopment of the Jordans Branch watershed north of Route 33 and Route 250 might lower stormwater runoff due to improved stormwater technology being employed.

There was mention that Jordans Branch passes through Libby Mill which has the highest amount of imperviousness but there appears to be no difference in metals as compared to Dover Creek. It was discussed that toxicity problems that are chronic are usually seen in the sediments and are usually from industrial sources not urban. Based on the standards and toxicity dependance on hardness, no metals were identified as probable stressors. This does not mean, however, that they are not contributing to the overall stress of the benthic community. Other stressors, like sediment and phosphorus are just more impactful.

Everyone was thanked for attending the meeting, and the meeting was adjourned.