

Cunningham Creek Technical Advisory Committee Meeting

Fluvanna County Library

May 1, 2017

Attendees

Dana Bayless (NRCS)	James Newman (Fluvanna County)
Roger Black (Fluvanna County)	Chuck Wright (VADOF)
Craig Lott (VADEQ)	Brain Benham (VATech)
Tom Pratley (TJSWCD)	Gene Yagow (VATech)
Robbi Savage (RCA)	Jessica Dodds (RCA)
Brian Walton (TJSWCD)	Ida Swenson (RCA)
Tara Sieber (VADEQ)	Nesha McRae (VADEQ)

Summary

Tara Sieber (DEQ) welcomed the committee and explained that her responsibilities have shifted at DEQ now that she has assumed the position of Water Monitoring and Assessments Manager. Nesha McRae will be stepping in to coordinate the remainder of TMDL development in the Cunningham Creek watershed as the new TMDL Coordinator in the Valley Regional Office. Nesha provided the group with a brief summary of the commitments made by DEQ regarding water quality monitoring since the last TAC meeting, which included benthic and bacteria monitoring, diurnal dissolved oxygen monitoring, and relative bed stability monitoring for the watershed. In addition, the Rivanna Conservation Alliance committed to conducting benthic and bacteria monitoring at three sites in the watershed. Nesha moved on to provide the group with the updated water quality data collected by DEQ over the project hiatus. Diurnal dissolved oxygen data was collected for the South Fork watershed over a three day period in July of 2016. The data did not indicate any issues with DO, with no samples exceeding the 4 mg DO/L minimum or the 5 mg DO/L daily average criterion.

Relative bed stability was also assessed in all four of the watersheds. This is a measure of the stability of a stream with respect to erosion and sediment transport. The particle size distribution of the bottom substrate observed in a stream is compared to what would be expected in such a stream, and this relationship is then used to assess the impact of excess sedimentation on the stream and overall stability of the channel. The scores all suggested relatively stable conditions, though it was noted that this metric may not be particularly informative for Cunningham Creek since it is a naturally sandy-bottom stream.

Benthic monitoring was conducted by DEQ biologists in the spring and fall of 2016 in the North Fork watershed and on the mainstem of Cunningham Creek. Nesha explained that in order to remove the benthic impairment listings, the Stream Condition Index (SCI) scores for the most recent spring and fall sampling in the same year would have to both be above 60. Based on this criterion, both watersheds are still not supporting the benthic standard and will remain on the impaired waters list. It was noted

that if RCA data indicates no impairment within a watershed, DEQ must still designate the streams as impaired if their data indicates such a condition exists.

E. coli data collection occurred monthly beginning in 2016, and will continue through 2017. Nesha shared the cumulative violation rates of the E. coli water quality standard for each monitoring station. In order to be removed from the impaired waters list, a station could not violate this standard more than 10.5% of the time. Nesha also shared violation rates for each station that will be used in DEQ's next water quality assessment (2018). Nesha explained that this assessment will not include the 2017 data collected at the stations, only the 2016 data based on the assessment window (2011-2016) that will be used. Based on these data, it is possible that the mainstem of Cunningham Creek could be de-listed. While the 2017 data will not be used to make this decision, the water quality assessor will look at the data in order to determine if the stream is likely to jump back on the impaired waters list in the next assessment (2020). If this is the case, the stream may remain designated as impaired. While the South Fork will not be listed as impaired in the 2018 assessment, data trends are suggesting that it may be listed in the 2020 assessment. In summary, it looks like some of the impairments for bacteria may shift around, bouncing on or off the impaired waters list in the coming years. It was noted that no data was shown for the North Fork watershed. It seems likely that the North Fork is influencing the station on the mainstem just downstream of the confluence, which had a violation rate of 31.25% for the sampling period as a whole. Nesha was unsure as to why additional monitoring data was not collected or was not shown on the map. Nesha followed up on this issue the day after the meeting and learned that the data had been omitted from the map, many apologies! Additional E. coli data was collected at two stations on the North Fork, one below the Ruritan dam (river mile 4.34) and one just above the Route 619 bridge (river mile 1.31). The station below the dam has a violation rate of 0% for both 2016 and what has been collected to date for 2017. The Route 619 station has a violation rate of 0% for 2016, but an overall violation rate of 12.5% for 2016-April 2017. This suggests a minor impairment on the North Fork, but it seems unlikely that land uses upstream of this station are the source of the impairment on the mainstem since the violation rate at this downstream station is much higher despite a greater volume of water. Consequently, it is likely that any E.coli making its way from the North Fork down to the mainstem is coming from below the monitoring station at the Route 619 bridge. It was noted that there is a large farm with livestock access directly below the 619 Bridge that could be impacting the mainstem. Nesha followed up on this suggestion using aerial imagery of the watershed and was able to identify the areas of livestock access directly downstream of the monitoring station. This appears to be the only likely input from the North Fork since land use downstream of the farm is largely forested. The group discussed the potential for implementing livestock exclusion fencing and riparian buffers on this operation. The landowner has expressed an interest in signing up for BMP cost share through the Thomas Jefferson SWCD; however, the nature of the property and the presence of wetlands makes an exclusion project challenging. NRCS has potential programs that address wetlands including the Wetlands Reserve Program, which offers payments for placement of easements on wetlands.

Jessica Dodds (RCA) shared the benthic monitoring data collected by RCA in spring and fall of 2017, along with annual bacteria, nitrogen and phosphorous monitoring at three sites in the watershed (one site on the South Fork, one on a tributary of the South Fork, and one on the North Fork). Both spring

and fall monitoring benthic data collected from each of the sites suggested that stream health was good to very good. Bacteria monitoring on the tributary of the South Fork showed a high concentration of E. coli in the stream. Jessica noted that they could see livestock in the stream just upstream of their monitoring location when the sample was collected, so it was likely that this was impacting water quality at the monitoring site downstream. Nutrient sampling did not suggest N or P issues in the streams, though it was noted that most of the nitrogen in the streams is organic, suggesting that the source is most likely manure. RCA benthic data is considered Level 3 data by DEQ, meaning that it can be used in listing and de-listing impaired waters. Some of the earlier data collected by RCA in the Cunningham Creek watershed was considered Level 2 data; however, we are still using it to inform the planning process in the watershed. Gene Yagow (VATech) noted that DEQ collected benthic data in 2015 from several locations in the watershed that we not shown in the graph Nesha shared earlier. Nesha offered to follow up on this and share the data with the group.

The group moved on to discuss next steps. Participants agreed that they would like to move forward with a restoration effort in the watershed, though it would not necessarily need to be in the form of a TMDL. Participants did not like the idea of taking another hiatus to collect more monitoring data and felt that sufficient information was available to move forward with the project. Since the bacteria impairments appear to be shifting, with the mainstem of Cunningham Creek improving to the point of a potential de-listing, and a potential listing of the South Fork in the 2020 assessment, a TMDL might not be the best use of time and resources. In addition, the RCA benthic data does not indicate a benthic impairment on the North Fork Cunningham Creek, while the DEQ benthic data suggests a minor impairment on the mainstem and the North Fork. Based on input from the committee, it is clear that there are a few farms in the watershed with livestock access to the stream that are likely to be the source of the bacteria issues. In addition, the benthic impairment due to excess sediment may be attributed to a few large sources including the Ruritan dam, with is scheduled for rehabilitation in the coming years (Tara is checking on the timeline for this effort). Consequently, the group agreed that a watershed plan could be the best route to take. This plan would include a targeted outreach effort to farmers in the watershed. The group had some concerns about the potential for failing septic systems in the watershed, with participants discussing how E. coli from septic systems could be differentiated from livestock. There has been considerable research in this field, and samples can be analyzed to determine likely sources.

A series of follow up items were identified by the committee:

1. Investigate lack of E. coli monitoring data from the North Fork (Nesha)
 - Data omitted from presentation, it has been added in to the presentation, which will be distributed to participants with the meeting summary
2. Include additional 2015 benthic monitoring data in graph shown in powerpoint presentation (Nesha)
 - Data has been added in to the presentation, which will be distributed to participants with the meeting summary
3. Follow up on timeline for rehabilitation of the Ruritan dam (Tara)

- An email requesting additional information on the project timeline has been sent to the Department of Game and Inland Fisheries
4. Investigate contract status with VA Tech to determine if sufficient funding is available to extend their contract to complete a watershed plan for Cunningham Creek (Nesha)
 - A conference call has been scheduled for Monday, May 8th with DEQ and VA Tech staff to discuss planning and contract options

The group agreed that once follow up items have been addressed, we will convene for another meeting to plan for next steps.