

Crooked Run, Stony Creek and Pughs Run Community Engagement Meeting

Shenandoah County Public Library, Edinburg, VA: August 19, 2024

Attendees

Vito Gentile (landowner)	Tyler Hinkle (Shenandoah Co)
Nesha McRae (DEQ)	Rob Arner (landowner)
Tara Wyrick (DEQ)	Caitlin Worsham (Alliance for the Shen. Valley)
Karen Andersen (FOSR)	Dan Harshman (Town of Edinburg)
Mark Frondorf (Shenandoah Riverkeeper)	Hilde Knupp (landowner)
Dana Gochenour (LFSWCD)	Justin Bridges (Georges)
Sabrina Hetzel (LFSWCD)	Phil Daley (landowner)
Patrick Felling (Shenandoah County)	Joan Comanor (LFSWCD)
Jeff Dalke (Landowner)	

Meeting Summary

Nesha McRae (DEQ) began the meeting with introductions and a re-cap of information that was shared at the kick off meeting for the project in June 2024. Nesha discussed the biological impairments present in Crooked Run, Stony Creek and Pughs Run and reviewed the Total Maximum Daily Load (TMDL) process that will be used to address the impairments. The role of participants in community engagement meetings was discussed in addition to the results of the benthic stressor analysis. This report is available on the DEQ webpage and provides a summary of evidence for sediment as the primary stressor to aquatic life in the three streams. Nesha reviewed some of this evidence with the group.

A participant asked whether DEQ is conducting additional monitoring closer to the watershed outlet on Stony Creek. Nesha reviewed the locations of ambient and biological monitoring stations in the watershed, noting that DEQ has an ambient monitoring station located in close proximity to the watershed outlet. Nesha described the process DEQ uses to determine how far upstream or downstream an impairment should extend. Assessment units are delineated based on watershed characteristics and the location on monitoring stations, and DEQ assessment staff carefully evaluates monitoring data to ensure that impairments are appropriately designated.

Participants reviewed 2016 land cover data (VGIN, 2016) for each of the impaired watersheds. Nesha explained how these data were used to develop non point source sediment loading estimates in the handout and asked for feedback on current estimates. One participant suggested checking with Shenandoah County to see if they have done any sort of GIS update to land cover data for the county. Representatives from the county noted that they have been using new Chesapeake Bay Program land cover data, but that it does not include cropland estimates and might not be as useful for this project. Nesha noted that cropland (high till and low till) contributes a considerable amount of sediment to the streams, so it will be important to get these estimates right. Lord Fairfax SWCD has an SL-1 practice (converting cropland to hay and pasture), this would be a good figure to look at to help determine if there has been any sort of shift with respect to agricultural land use in the area, but these figures will only reflect land use changes for practices

done through SWCD programs. Farm Service Agency (FSA) would be good to check with on the general extent of cropland conversion. They track what crops people are growing as well, a lot of this land is moving to vineyards. Some vineyard owners are interested in planting grass in between rows of grapevines. This is difficult for the SWCD to work with them on since they are supposed to focus on annual practices. They have to demonstrate erosion is happening in order to provide assistance.

Lord Fairfax SWCD did a tillage survey back in 2017 they can share. A participant suggested checking with the agricultural census since it shows changes in agricultural land use since 2017. This would be a good source for checking land cover data since 2022 Census just came out. A participant noted that some people think these numbers aren't accurate. The group discussed the different classes of pasture included in the land cover data set (good, fair and poor). Nesha asked for feedback on the ratio of the different types listed for each watershed. A participant asked how these are determined. Nesha explained that they are based on aerial imagery. The FSA would also be a good resource to check with on these values. A participant asked whether manure and poultry litter are accounted for in the TMDL. Nesha explained that these can be sources of nutrient and bacteria runoff but that they would not be considered a significant source of sediment. The presence of livestock in the watersheds is accounted for in terms of grazing and sediment contributions to the streams. There has been a lot of stream exclusion installed in Pughs Run in partnership with the Lord Fairfax SWCD, they have a handful of landowners they work with a lot.

The group discussed development trends in the area. Some have noticed increases in the number of new homes being built. There is a subdivision ordinance in the county that says that you are only able to subdivide your land every 3 years with a density rule of 10 acres. Land 100 feet from a stream and/or in a floodplain is protected from development. As a result of these county ordinances, there are not a lot large subdivisions going in, usually just single family homes. Requirements to connect to water and sewer also help to reduce the rate and extent of development in rural areas in Shenandoah County. Participants agreed that the county has a strong Erosion and Sediment (E&S) Control program. Bryce Resort and Sky Bryce are larger developments within the project area. Sky Bryce was originally platted in 2700 plats/1000 homes. The parcels that are adjacent to the stream are having the most impact. The Bryce Resort property is recreational, some is impervious and may be contributing stormwater to the stream.

The group discussed the primary sources of sediment in the watersheds. Nesha pointed out that preliminary estimates of sediment coming in to Stony Creek are relatively high. She asked participants if they have observed significant streambank erosion in the creek. Bryce Resort pulls from Lake Laura to make snow and water golf courses. They have had issues with sediment in the lake. Water withdrawals appear to be affecting lake levels. There have been concerns from the community about drawing lake levels down. The developed impervious acreage estimate presented for Stony Creek seems a little low, it could be contributing to erosion. Lord Fairfax SWCD does not have any practices in life span for streambank stabilization in the Stony Creek watershed. It was suggested that Nesha check with Seth Coffman about bank erosion on Stony Creek, he used to live on Stony Creek. A participant noted that he had made some observations of islands forming in the stream, then eventually washing away over the years in the Wakemans Grove area. Participants noted that there is a lot of debris piling up under bridges at Columbia Furnace. A participant added that photos of what bank erosion actually looks like would be helpful to see. On

Little Stony, all of the dead hemlocks and ash trees are leading to an increase in erosion from previously forested areas. A participant noted that they are also seeing a lot of red oak and white oak dying. This could be due to the drought and high temperatures. Participants said that they did not see a lot of impact from Hurricane Debbie in terms of turbid water, which could also be due to the drought. In addition, spongy caterpillars (aka gypsy moths) have denuded a lot of forested area on Three Mile Mountain.

A participant asked why the study does not focus more on the areas in each watershed draining directly to the impaired segments, particularly in Stony Creek. He felt that the focus should be on the areas that need to greatest degree of sediment reductions, rather than looking at the watershed as a whole. He argued that by looking at the upper portion of the Stony Creek watershed, the study is watering down the extent of sediment reductions that are needed. Nesha explained that the TMDL process looks at watersheds as a whole and considers all sources of sediment in a stream including those upstream. Sometimes downstream impairments benefit from cleaner water coming from upstream, and this needs to be accounted for in the study when determining the reductions in sediment needed.

The group moved on to discuss point sources of sediment in the watersheds. Nesha explained that DEQ administers a number of different types of permits to discharge in Virginia. Typically, these permits are accounted for in TMDLs based upon their permitted discharge concentration of the target pollutant along with their discharge rate. The group reviewed a table showing single family home domestic sewage permits in the watersheds. There are a total of 45 permits. A participant asked whether this value represented the number of alternative waste treatment systems in the watersheds. Nesha responded that these are alternative systems that have a discharge, which is estimated at 1,000 gpd. It is unlikely that these systems are discharging at this high of a rate, and often times system owners say that they have never observed the discharge. Nesha explained that the TMDL process uses a conservative approach to ensure protection of water quality, which is why the higher discharge rate is used to estimate the load.

Nesha described the nature of industrial stormwater permits, noting one facility in the Stony Creek watershed and the estimated sediment load that the facility is contributing to the stream. Nesha pointed out the difference in the existing load for the Edinburg Water Treatment Plan (640 lb/yr) compared to the permitted load that is based on the design flow for the facility (1,462 lbs/yr). Sediment loads from development were estimated by reviewing construction sites covered under a Virginia Stormwater Management Program (VSMP) permit over a 10 year window of time. This allows us to develop an estimated annual average acreage that is under construction. Nesha noted that there have been no permits issued for construction in the Crooked Run watershed through this program within the past 10 years. Therefore, an area adjustment factor was applied to the average disturbed area in Stony Creek and Pughs Run to develop an annual estimate for Crooked Run. Sediment loads for construction are estimated based on sediment reduction efficiencies associated with erosion and sediment control practices. Since participants agreed that the county's E&S program is very well run, the estimates will be based on the assumption that E&S practices are in compliance with all standards and specifications.

The group reviewed estimated sediment loads from Individual VA Pollution Discharge Elimination System (VPDES) permits in the project area. These permits are issued to larger facilities and have

specific limits based on facility designs and discharge. There are three of these permits in the project area, all of which are in the Stony Creek watershed. The group discussed the existing and permitted loads shown in the table. Nesha explained that DEQ typically develops pollutant allocations for permitted facilities based on their design flow and permitted pollutant discharge concentration. If allocations were to be developed using flow rates below the facility design flow, this could have significant impacts on the ability of localities to grow, and for businesses to follow established timelines for expansion. As a result, reductions from permitted sources are usually only called for in situations where reductions are critical in meeting the TMDL.

The group discussed next steps for the project. The county can pull data on single family home construction in the area, which should help in developing estimates of land use conversion. It was suggested that Nesha check with Bobby Clark on land use practices along with Rodney McClain (V Rural Water) familiar with Stony Creek, he can provide some historical information. A participant asked when antidegradation rules come into play? Isn't this after a TMDL has been developed? Tara Wyrick (DEQ) explained the role that anti degradation rules play in protecting water quality. She noted that it is part of Virginia's commitment to clean waters to prevent degradation of surface water quality and is included in every water permit written by the agency. Nesha asked participants if the library was still a good meeting place, they responded yes. The next meeting will be held in a few months, during which we will review the process used to estimated sediment endpoints for the streams. Nesha thanked participants for attended and the meeting was adjourned.