

North Fork Catoctin Creek Watershed Project

First Technical Advisory Committee Meeting

August 16, 2018

Meeting Summary

Location: Purcellville Public Library, Robey Room
220 East Main Street, Purcellville, Virginia 20132

Start: 4:00 p.m.

End: 6:00 p.m.

Meeting Attendance:

Sarah Sivers, VA Department of Environmental Quality (DEQ)
Brett Stern, DEQ
Bryant Thomas, DEQ
Karen Kline, Virginia Tech-Biological Systems Engineering (VT-BSE)
Stacie Alter, Town of Purcellville
Dennis Cumbie, Loudoun County-OGS
Phil Daley, Citizen
Ned Douglass, Citizen
Jim Hilleary, VA Cooperative Extension
Kinner Ingram, VA Department of Forestry (DOF)
Tracy Lind, Piedmont Environmental Council
Carol Matheny, Catoctin Scenic River Advisory Committee
Jim McGlone, DOF
David Nelson, Catoctin Scenic River Advisory Committee
Chris Van Vlack, Loudoun SWCD
David Ward, Citizen

Meeting Summary:

Attendees were welcomed and introductions were made of those present at the meeting. Sarah Sivers described the scope of the watershed project, which addresses a benthic impairment to the aquatic life use in the lower segment of the North Fork Catoctin Creek. This project is taking a watershed approach due to the impairment occurring in the downstream reach of the stream, and therefore the Total Maximum Daily Load (TMDL) will be developed at the outlet of the North Fork Catoctin Creek (which flows into Catoctin Creek). Implementation strategies may then occur anywhere within the North Fork Catoctin Creek watershed.

Next, Karen Kline, VT-BSE, presented an overview of the 2015 Stressor Analysis, plans for setting the TMDL for sediment, the Generalized Watershed Loading Function (GWLF) model and a reference watershed approach (AllFORX) using comparison watersheds. Following the presentation, a handout with guiding questions helped to lead discussion that covered the modeling approach, watershed characterization, source assessment and existing best management practices (BMPs) and land protection. The meeting closed with overview of the content and timeline for the next two TAC meetings.

Summarized below is the content of the discussion and comments shared during the meeting:

- Land use types in the watershed and data sources:
 - It was clarified that the data will come from VEGIN, which is the same land use data used in the Chesapeake Bay model. This data has a resolution of 1 meter.
 - A member recommended referring to the Loudoun County online mapping called “Build Out Scenarios” that lists number of existing residential structures and identifies the ultimate buildout planning scenario based upon current zoning to obtain information on potential future growth development. The data is provided in GIS format.
 - Another recommendation to identify current development is to obtain information on approved building permits.
 - A member recommended that the land use data used be reviewed to ensure large lot subdivisions are shown as developed areas.
- Pollutant source assessment:
 - A member commented that sources from crops is minimal due to the current practice being minimal or no till, which is the practice recommended to reduce sedimentation.
 - Silviculture activities within in the North Fork Catoctin Creek watershed are expected to be a minimal source. The activities are select cut/partial cut, which means some trees are left, stumps left and forest floor is not disturbed. In response to question as to how to portray this land use in the model, DOF commented that disturbed forest was not needed but recommended noting any land conversion for those areas that did not return to forest.
 - DOF discussed their requirements for silviculture as it pertains to sedimentation, which are based upon law that states sediment from the activity must not end up in the stream. The DOF has a BMP manual for silviculture. They pointed out that these practices are voluntary outside of Resource Protection Areas (RPA). They mentioned they have 90-95 percent compliance with the requirements. They noted that this activity (versus construction activities) is outcome driven versus practice driven in terms of sediment management.
 - Residential development is occurring in the eastern part of the watershed, mostly comprised of large lot subdivisions. This type of development is not required to have stormwater management BMPs, but despite the large lawns, etc. may still result in a source of sediment.
 - One member commented the number of new wineries/vineyards that are present in the County and questioned if that could be a source. However, based upon information provided by another member on the extent of this activity, approximately 800 acres throughout the County, it does not appear to be a significant source.
- Modeling approach:
 - The modeling approach to model sediment loads based upon site specific data inputs was provided in response to a question on the methodology and if it was better to have more sediment sampling. It was noted that to get a complete picture of the issue caused by sediment to aquatic life would require a variety of sampling, such as of the water column and sediment. Additionally, that there was less concern with the specific loading but the relative loads was needed to gain an understanding of the issue and BMPs needed to address it.

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- Question was asked how precipitation is taken into consideration into the model. Historical data from the past 20 years is used.
 - It was noted hydrology data is used in the model. A member recommended use of the USGS gage at Taylorsville (on Catoctin) as it correlates well with the USGS gages on the North Fork Catoctin and South Fork Catoctin, both of which have fewer years of data.
 - A member questioned if the GWLF model takes into consideration sediment reductions from implemented BMPs, which it was confirmed it does.
 - Discussion as to how best to model the North Fork Catoctin Creek watershed took place due to the presence of an inline pond located between the middle and upper segments. It was noted that this pond, known as the Virts Pond, is privately owned and was not built for stormwater management purposes. The members discussed the history of the pond as being built in the late 1930s or early 1940s and then the dam was damaged during the 1970s due to rain event from a hurricane. After that time, it was not much of a pond feature until the dam and pond were restored between 2005 and 2006. The TAC advised DEQ to model the watershed as if no pond is present due to the feature being privately owned and not designed to act as a sediment detention basin. It was also noted that more of the sediment sources appear to be in the middle to lower parts of the watershed, which is downstream of the pond and closer to the impaired stream reach, making this approach reasonable. Therefore, the TMDL endpoint will be developed based the assumption the pond is not present. However, the model will be segmented to reflect the current situation of the presence of an in-line pond to help with development of implementation strategies.
 - An overview of the ALLFORX approach was provided in response to questions on it. It was noted that this approach stems from that used by Maryland to develop sediment loads, which are modeled loads based upon local data inputs. Ms. Kline noted the approach uses local information to obtain local results, but she was not sure exactly how the approach differs from the Maryland version but she could find out more information.
 - Follow-up provided post-meeting: both Maryland and Virginia use simulated sediment loads from comparison watersheds whose monitoring stations report healthy biological conditions to set the TMDL endpoint. Sediment loads are simulated for current conditions and all forested conditions, and a multiplier (current sediment load / all forested sediment load) is calculated for each comparison watershed. In Maryland, the median value of all the comparison watershed multipliers is used to set the TMDL endpoint. In Virginia, a regression is developed between the comparison watershed multipliers plus the impaired watershed multiplier, and the average VSCI (Virginia Stream Condition Index) scores at the watersheds' biological monitoring stations. The value along the regression line that corresponds with the biological threshold (VSCI=60) is used to set the TMDL endpoint. This method links the sediment loads with the health of the benthic community.
 - Comparison watershed discussion:
 - A member recommended using sites identified in the Goose Creek watershed only if those are on portions of the stream that are similar in size to the TMDL watershed.
 - A member asked the timeframe used to select the biological data of potential comparison watersheds. Benthic macroinvertebrate and habitat data collected in the last 10 years were used to limit the degree of changes that occur in watersheds over time. One member commented there has been a downward trend in the habitat data recorded by DEQ scores

- over the last 10 years. A member recommended using only the last 5 years of data or to weigh that data more heavily might be better.
- A member questioned if the upper part of North Fork Catoctin could be used as a reference watershed, specifically the area upstream of the “notch” west of the Town of Hillsboro. It was noted that the most upstream monitoring station was located within the impaired upper reach and data from an impaired reach could not be used as a reference site. Therefore, while this suggestion will be considered, it did not look to be a viable option for this project.
 - BMPs and related:
 - A member noted that there was a stream restoration project near Routes 9 and 287 that appears to have been proposed but not pursued and questioned the status of that project. DEQ staff did not know at that time but said they will look into it. Note: The member later identified the site as the Daley Farm Site based upon information from the U.S. Army Corps of Engineers RIBITS data.
 - A member mentioned the floodplain issue that has significantly complicated riparian buffer planting. The issue pertains to restrictions on activities in the floodplain due to causing changes in the flood elevation and this interpretation has been extended to tree planting activities in Loudoun County. Representatives from DOF voiced concern due to the commitments Virginia has put forth for planting riparian buffers as part of the Chesapeake Bay cleanup effort.
 - In response to DEQ’s question regarding scheduling the next TAC meeting, members recommended DEQ use a doodle poll or similar to identify suitable date and time. One member asked that September 26th be avoided.