

North Fork Catoctin Creek Watershed Project

Second Technical Advisory Committee Meeting

October 2, 2018

Meeting Summary

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

Start: 10:00 a.m.

End: 12:00 p.m.

Meeting Attendance:

Sarah Sivers, VA Department of Environmental Quality (DEQ)

Brett Stern, DEQ

Karen Kline, Virginia Tech-Biological Systems Engineering (VT-BSE)

Stacie Alter, Town of Purcellville

Dennis Cumbie, Loudoun County-DGS

Ned Douglass, Citizen

Jim McGlone, DOF

Meeting Summary:

To begin the meeting, Sarah Sivers provided an overview of the meeting's agenda and handout. Next, Karen Kline, VT-BSE, presented an overview the Generalized Watershed Loading Function (GWLF) model and a reference watershed approach (AllForX) using comparison watersheds. Ms. Kline then described how the Total Maximum Daily Load (TMDL) endpoint was established using the "all forested multiplier" (AllForX) approach. The meeting then moved into an open discussion of the information presented, using the handout with guiding questions to lead discussion. The meeting closed with overview of the content and timeline for the next TAC meeting.

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

- Ms. Kline noted that the hydrology for the model was calibrated for a 5-year period (2009 – 2013) to the USGS flow gage on the North Fork Catoctin (01638420) after a review of the closest gauges (other two gages are located on Catoctin Creek and South Fork Catoctin) showed a close correlation. Because the selected gage did not have data prior to 2001, 20 years of daily flow measurements, from 1998 – 2017, at the USGS gage on Catoctin Creek (01638480) were used to select the 5-year modeling period (2009 – 2013) that best represents the long-term flow.
- During the course of conversation on land use, it was noted that the data was obtained from VGIN, which has a resolution of 1 meter. As a result, the higher resolution results in more acres of a land use than anticipated, such as forested, as any grouping of trees is counted as that land use.
- Future Growth
 - Future growth land use change (from other land uses into developed land use) estimate of 18% was determined using a rough assessment of 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. An attendee noted that the data can be requested from the County in GIS format to obtain a more accurate evaluation.

- The 18% change in land use was taken from a mix of agriculture uses (66%) and forest (33%).
- After further review and consideration of the concerns voiced by attendees and comparison with percent of future growth associated with other TMDL projects, it was decided to move forward based upon the rough assessment, but to increase it by 2% to 20%, to account for a level of uncertainty in the rough assessment.
- Developed Land Use
 - It was noted that the sediment load associated with developed land uses are lower than pasture/hay land use. It was discussed that the developed condition typically is more stable than pasture/hay, but it's the transitional phase when land is being developed that there is more potential for excess sedimentation to occur. Attendees voiced concern for this period of time, which is not captured in the model. It was noted that the transitional period is addressed in stormwater construction permits by having an increase in frequency of monitoring.
 - Concern was voiced that developed areas result in more runoff, which can cause an increase to stream erosion. While it was noted that channel erosion is identified as an instream source (where as developed category is overland sediment source), it was felt that the amount of sediment from that source could be higher than identified in the model results due to anticipated higher storm flows when more development occurs. Additionally, most of the residential construction in that area consists of large lots that are not subject to post stormwater management best management practice (BMP) requirements.
 - Attendees recommend reviewing modeling scenarios that placed more emphasis on development and runoff as source (or cause for increased) sedimentation.
- Setting the TMDL endpoint
 - The AllForX multiplier provides a comparison of the existing sediment load to an all forested condition for the watershed.
 - A regression of the AllForX values for the comparison watersheds and the TMDL watershed identified one outlier, Beaverdam Creek. Removing that one watershed results in a regression line that fits. The value where the line crosses the Virginia Stream Condition Index (VSCI) score of 60 is 8.16. The attendees had no comments or concerns of the proposed AllForX value of 8.16.
 - The selected comparison watersheds used to develop the AllForX are also evaluated by comparing habitat metrics with the AllForX to provide a rough verification. There were no outliers.
 - One attendee questioned why South Fork Catoctin has a lower sediment load than the North Fork Catoctin, thinking that the development from the Town of Purcellville has an impact. It was noted that the watershed for the South Fork that was being considered is upstream of the selected monitoring station, which is just upstream of the Town and is highly forested in that part. This station on the South Fork was selected because it was unimpaired for benthics and the lowest VSCI score was above 55.
 - The margin of safety (MOS) is included in the TMDL equation to account for any uncertainty in the modeling approach. It can be calculated either using a confidence

- interval or an explicit 10%. For this watershed, 10.2% was calculated using the confidence interval approach. Attendees discussed the purpose of including the MOS and how it can be calculated. It was decided to use 10%.
- Future growth was included in the waste load allocation (WLA), accounting for 2% of the TMDL. This is the standard percent used and through discussion, the attendees agreed it was reasonable for this watershed.
 - It was discussed there is a proposed future condition, to account for changes in land use anticipated over 10-15 year, which takes into account more developed lands. It was noted that it could remain with the existing condition, which would remain more conservative should the anticipated development not occur. The resulting decision was to use the projected future condition to address concerns regarding increase in runoff that is associated with more impervious areas, by looking closer at developed lands and runoff as sources.
 - It was noted the existing load does not take into consideration existing BMPs.
 - BMPs and related:
 - One member recommended that the education portion of implementation include recommendation to not mow the riparian buffer area, to let remain undisturbed.
 - Some strategies to consider are stream restoration and riparian buffer planting. An attendee noted there was a hurdle due to restrictions in Loudoun County on activities in floodplains that may result in an increase in the flood elevation. Another attendee clarified this only applies to major floodplains, not minor floodplains.
 - Dept. of Forestry staff noted that their agency has come out with their report on statewide BMPs, which showed a high compliance rate.
 - DEQ closed the meeting with schedule moving forward. Additional input on the TMDL equation from the TAC may be sought through email correspondence. Following finalizing the TMDL, DEQ will coordinate with EPA for their preliminary review prior to moving into developing implementation strategies. The next TAC meeting that will focus on implementation strategies is anticipated for the beginning of December, which will be scheduled shortly to try to get full attendance. If delays are encountered that result in DEQ not being at a point to discuss implementation strategies at this last TAC meeting, DEQ will postpone that meeting.