

Crooked, Stephens and West Runs and Willow Brook Water Quality Improvement Plan

First Community Meeting: Lord Fairfax Community College

January 28, 2016

PARTICIPANTS

Dan Murray	Richard Hoover	Wayne Webb
Tim Stowe	Sandra Ritenour	Larry Stacy
Mack McComas	Katie Shoemaker	Larry Atkinson
Janice Atkinson	David Nichols	Bud Nagelvoort
David Beahm	Phil VanAlsborg	Tom Sayre
James Pinsky (LFSWCD)	C William Staples	H.B. Simpson
Joe Lehnem (DOF)	D. Stanley	Don Kain (DEQ)
Nesha McRae (DEQ)	Tara Sieber (DEQ)	Matt Wolanski (DOF)

MEETING SUMMARY

The meeting began with a welcome from Nesha McRae, from the Virginia Department of Environmental Quality (VADEQ). Nesha provided an overview of the water quality problems observed in Crooked, Stephens and West Runs and Willow Brook. Monitoring conducted by VADEQ has shown that the creeks are violating the state's water quality standard for *E. coli*, which Nesha explained is a human health concern when people have primary contact with the water. A TMDL study was completed for the creeks in 2014. The results of this study were shared with attendees including a "de-listing" reduction scenario. Nesha explained that as part of the study, an assessment of all of the sources of *E. coli* in the watershed was completed, and then reduction scenarios were developed for the different sources outlining what would be needed in order to meet the water quality standard. Nesha outlined the process that will be used to develop the water quality improvement plan and stressed the importance of public involvement. Implementation of the plan will be conducted on a voluntary basis, so local support is very critical to the overall success of this effort.

One participant at the meeting asked how this effort related to the Chesapeake Bay restoration effort. DEQ staff explained that this is a local effort that is specifically targeted at the bacteria impairment on the streams, while the Chesapeake Bay restoration efforts are focused on nutrients and sediment. However, there are definitely areas of considerable overlap between what needs to be done to address bacteria pollution in these streams and what needs to be done to improve water quality in the Chesapeake Bay. The participant noted that he would like to see representation from the federal government at the meeting, and that farmers were poorly represented at the meeting that night. DEQ staff explained that multiple outreach efforts had been made including a large mailing notifying local residents of the meeting.

Another participant asked DEQ staff to explain where Stephens Run starts and what it actually considered Crooked Run. The group revisited the project area map which shows both Stephens and Crooked Runs. Stephens is a tributary of Crooked Run, and has been called Crooked Run by some local residents, creating some confusion.

The group discussed the bacteria load that has been attributed to forest after a participant asked what the source of that bacteria would be. DEQ staff explained that this is bacteria from wildlife. The load is very small since very little runoff occurs from forested areas. Another participant asked about the load from wildlife that is directly deposited into streams. He explained that he has a number of beavers on his property that spend a lot of time in the stream. It was explained that this direct load of bacteria has a greater impact on the stream since bacteria deposited on the land requires rain to carry it to the stream, and some of it dies off on the way there.

One participant asked about the maintenance requirements for livestock exclusion practices and noted that 100% cost share had been made available to farmers for these practice recently. However, he explained that the maintenance requirements of livestock exclusion fencing are very involved and expensive. DEQ staff explained that the typical BMP cost share contract for fencing is a 10 year agreement during which the farmer is responsible for maintaining the fence. They could reapply to the Soil and Water Conservation District if the fence is washed out. They may or may not receive additional funding to repair the fencing depending on how their application ranks against others and how much funding the Soil and Water Conservation District has available. The participant asked about other requirements of these contracts including buffer width and maintenance. DEQ staff explained that requirements depend on the type of practice the participant signs up for. Some programs allow the fence to be put 10 feet back from the stream, others require 35 foot setbacks, while others provide additional incentives for even wider buffers. Some programs require that trees be planted in the buffer, while others allow farmers to bush-hog the buffer area during certain times of the year. There is considerable flexibility available to farmers through all of the different program options that are out there.

DEQ staff noted that water quality in all of the creeks except for West Run has been improving over the past three to five years. In addition, a large amount of work as already been done by the agricultural community to fence livestock out of the creeks and prevent runoff from crop and pasture land.

The group dismissed for a five minute break after which attendees reconvened in two breakout sessions: an agricultural and a residential working group. Nesha explained that the agricultural working group will discuss the best ways to reach out to farmers in the watershed, appropriate best management practices to address bacteria coming from agricultural land in the watershed, and obstacles to implementation of these practices. The residential working group will discuss ways to locate straight pipes in the watersheds, how to educate homeowners about septic system maintenance, and suitable ways to address runoff of bacteria from pet waste.

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Residential Working Group Meeting: Lord Fairfax Community College

January 28, 2016

PARTICIPANTS

Joe Lehnen (DOF)
James Pinsky (LFSWCD)
Dan Murray
HB Simpson (TJSWCD)
Larry Atkinson

Terry Lay (FOSR)
Larry Stacy
Tom Sayre
Janice Atkinson

Katie Shoemaker (EEE Consulting)
Phil VanAlsbury
Tara Sieber (VADEQ)
Tim Stowe

MEETING SUMMARY

Tara Sieber, from the Virginia Department of Environmental Quality (VADEQ) provided an overview of the role of the residential working group in the planning process. She explained that the group is typically made up of local residential property owners, local Health Department staff, and representatives from other interested citizens groups in the region. The group moved on to discuss septic system maintenance needs and the degree of awareness in the area regarding what is involved in maintaining these systems. The group agreed that there is a considerable lack of awareness of septic system maintenance requirements. Participants thought that education on septic systems and alternative waste treatment systems could be targeted towards realtors and homebuilders in addition to homeowners in the watershed.

The group discussed alternative waste treatment systems. It was noted that independent verification of designs should be required and that architects should not be allowed to just sign off on system designs. One participant suggested that the VA Department of Health should work with local realtors to require the inclusion of the capacity of septic systems in real estate transactions. The Friends of the Shenandoah River has worked with homeowners on septic tank pumpout programs in the past, which provided assistance with the cost of pumpouts. It was noted that there are many challenges associated with working in karst/shale topography with respect to septic systems and alternative waste treatment systems. The percentage of alternative systems is higher than average in the watersheds because this topography makes it difficult to install a conventional drainfield. One participant asked whether peat moss systems could be considered alternative waste treatment systems. If the system is approved as designed by the Health Department, then homeowners can install it, this includes peat moss systems. Participants estimated that the cost of an alternative system can be as high as \$35,000 while conventional systems are usually around \$8000. It costs \$300 to inspect a septic system and pumpouts are typically around \$300.

The group moved on to discuss straight pipes and failing septic systems. Participants wanted to know where people are allowed to walk when walking the stream. DEQ staff explained that the "ordinary high water mark," which is where water usually flows in a streambed is generally considered property of the Commonwealth. However, there are areas where Kings Grants exist and landowners actually own the stream bottom. A lot depends on individual property owners. A few participants identified fear as an important barrier to participation in assistance or education programs. Any sort of outreach should

emphasize the voluntary nature of the program. A participant asked if a visible plume is created in a stream as a result of a straight pipe discharge. It was noted that there could be excess algal growth due to high nutrient levels around the pipe. Another participant suggested using aerial thermal imagery to determine where straight pipes are located since the discharge will probably be warmer than the stream water. Another barrier to participation in assistance programs will be the cost of hooking up to public sewer. In Frederick County, this is around \$25,000 plus the cost of labor and materials to connect to the sewer line. Homeowners associations and public service boards hold public meetings every so often, which could be a good opportunity for outreach.

The group discussed potential partner organizations for rain garden installations in the watersheds including Front Royal Tree Stewards and the Garden Club of Warren County. Master Naturalists/Gardeners would probably not be the best partner for this particular implementation piece, but they could help with some residential education.

DEQ staff asked participants about opportunities for pet waste stations in the watersheds. Lake Frederick already has pet waste stations set up in the surrounding area, and some Homeowners Associations include pet waste disposal in their covenants/agreements. Warren County will be opening a dog park in 2018 (Rockland Park). It was noted that peer pressure is a critical component in getting pet owners to pick up after their pets.

Participants discussed other outreach opportunities regarding septic systems and pet waste. A local newspaper education campaign was suggested. The campaign could make the connection between groundwater science, septic system maintenance and financial cost share. Coliscan monitoring was suggested as a good tool for making upstream downstream comparisons to convince landowners to exclude their livestock. Friends of the Shenandoah River is already doing some bacteria testing in West Virginia. They already have an excellent monitoring network that they are willing and able to expand. McKay Springs was identified as a particular location the needs some additional monitoring. Another participant suggested launching a drinking water campaign. "Taste of the Shenandoah" could work with participating businesses and local Chambers of Commerce to stress local resources, health and taking care of our children by caring for our water. Local schools could also be involved in monitoring and outreach. They could play an important role in recruiting local service organizations such as Boy Scouts and Girl Scouts. Envirothon could be another tool to reach out to the local community. It was noted that the Army Corps of Engineers has a station in Winchester and might be able to provide assistance with labor to install septic systems at a reduced price, the National Guard was suggested as another potential source of assistance with labor.

It was noted that there is a need for sanitary facilities at Lake Frederick for fishermen after peak fishing season. Currently facilities are not available year round.

The group reviewed overall residential priorities and ranked them with one being the highest priority:

1. Straight Pipes and Failing Septics
2. Homeowner Education
3. Connection to public sewer

The group discussed future meetings and suggested avoiding Tuesday nights since they are Board of Supervisors meetings. An earlier time of 5-6 p.m. works well for people, or after 6:30 so that commuters can return home. Sunflower Cottage was noted as a good meeting location. Tara thanked participants and the meeting was adjourned.

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Agricultural Working Group Meeting: Lord Fairfax Community College

January 28, 2016

PARTICIPANTS

Sandra Ritenour
Wayne Webb
Billy Staples
David Nichols
Nesha McRae (DEQ)

David Beahm
Greg Huffman
Debbie Staples
Dick Hoover
Don Kain (DEQ)

Matt Wolanski
Mac McComas
Doug Stanley
Bud Nagelvoort

MEETING SUMMARY

Nesha McRae, from the Virginia Department of Environmental Quality (VADEQ) provided an overview of the role of the agricultural working group in the planning process. She explained that the group is typically made up of local farmers, Soil and Water Conservation District and Natural Resources Conservation District staff, along with representatives from other organizations that work in agricultural conservation in the region. The group moved on to discuss the general status of agriculture in the Crooked, Stephens and West Runs and Willow Brook watersheds today. Suburban encroachment was identified as a real problem in the area. One participant stated that he thought that farming in the region would soon be a thing of the past due to an influx of people from the D.C. metro area. Another participant responded that he thought this view was too pessimistic and that Clarke County had implemented a number of planning and zoning ordinances and programs to protect local agriculture. Another participant stated that he thought that the Willow Brook watershed has been subject to far less development pressure than the other watersheds and that it was more likely to stay in agricultural land use. It was also noted that the Friends of the Shenandoah River received a grant to implement BMPs and do water quality monitoring in the Willow Brook watershed. The report that was produced as part of this project might be helpful in developing the implementation plan. DEQ staff explained that it makes sense to focus BMP implementation in areas that are more likely to remain in agricultural since those practices are more likely to stay in place beyond the typical ten year contract period.

Representatives from the Lord Fairfax SWCD noted that they have been working to develop an urban BMP program in order to address stormwater pollution resulting from increased urban and residential development in the region.

It was noted that more small organic farms are coming into the region, but that start up costs for larger operations are cost prohibitive. The Jet Farm, a 500-acre farm on Crooked Run has been for sale for the past 10 years. Many farms in the area are leased (at least 50%). Many of the landowners in the region are older and no longer farm their own land. It was noted that it's hard to even find land to lease in the region, and that it's very competitive when property comes up to lease. The group agreed that long term leases are much better for farmers than short term (1 year agreements), 5-10 years was noted as ideal. There are a number of absentee landowners in the area as well. DEQ staff explained that work has been underway in Augusta and Rockingham Counties to help farmers negotiate better lease agreements. Typically, these agreements are only for one year, making a farmer who is leasing land

reluctant to pay for any sort of management infrastructure on the property. If a longer lease agreement can be reached, the farmer may be more interested in implementing BMPs such as livestock exclusion systems. It was also noted that there has been an increase in the use of poultry litter in the watershed on both crop and hay land.

DEQ staff asked participants about potential partners for outreach activities. Participants suggested VA Cooperative Extension along with the local Farm Bureaus. It was noted that DEQ staff had reached out to local Farm Bureau leaders, but they were not in attendance. Participants agreed that phone calls were necessary in order to get better participation in meetings. Several participants offered to assist DEQ staff in identifying and contacting key farmers in the region for the next working group meeting. If the group was successful in getting more farmers to the table for the meeting, some additional background information like what was shared at the public meeting could be reviewed at the next working group meeting as well. Nesha agreed to work with David Beahm (Warren County Administrator) to follow up with farmers for the next meeting. Letters to landowners can also be effective, but some may require follow up correspondence in order to really get involved. It was also noted that door to door outreach efforts from NRCS had proved successful in the region. DEQ staff asked the group about local interest in conducting citizen monitoring for *E. coli* bacteria. This has proven to be a good way to get the community involved and keep people informed in other regions.

In order to gage local interest in different BMP options and identify the most suitable livestock exclusion fencing systems for inclusion in the plan, a survey was distributed to meeting participants. Everyone was asked to rank a series of BMPs along with a series of obstacles to livestock exclusion. The results are summarized in the two tables below:

Table 1. Potential best management practices for consideration. Average rankings are shown below (7 total) with 1 being the highest priority practice and 7 being the very lowest priority.

Best management practice	Description	Rank (1-7)
Streamside livestock exclusion fencing	Excluding livestock from streams with fencing, providing alternative water sources or limited access points to the stream	1
Rotational grazing	Establishing a series of grazing paddocks with cross fencing and rotating livestock to maximize forage production while preventing overgrazing	5
Forested streamside buffers	Planting trees and shrubs in strips (35 foot minimum) along streams adjacent to pasture and cropland	2
Grassed streamside buffers	Planting grasses in strips (35 foot minimum) along streams adjacent to pasture and cropland)	3
Forestation of crop, pasture or hayland	Convert existing pasture, crop or hayland to forest (hardwood or conifers,	4
Continuous no-till	Cropland is planted and maintained using no-till methods, only effective in reducing bacteria for cropland receiving manure applications (not commercial fertilizer)	5
Manure	Construction of planned system designed to manage	6

composting/storage facilities (equine)	solid equine waste from areas where horses are concentrated either through composting or storage	
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Table 2. Obstacles to streamside livestock exclusion. Average rankings are shown below (5 total) with 1 being the most common obstacle to address and 5 being the least common obstacle.

Obstacle	Rank (1-5)
The cost of installing fencing and off stream water is too high, even with cost share assistance from federal and state programs	1
Cannot afford to give up the land for a 35 foot buffer	3
General maintenance of fencing is time consuming and expensive	2
Grazing land is rented with short term leases and landowners are not interested in installing and/or maintaining streamside fencing and off stream water	4
People do not trust the government and do not want to work through state and federal cost share programs to installing fencing systems	3

Nesha asked the group about other potential meeting locations in the watershed for the future and meeting times. Participants suggested having the meetings as early in March as possible since farmers will be getting busy in mid March. The group agreed that 6:30 p.m. was a good time for a meeting.