

Chickahominy River and Tributaries - Bacteria TMDL Implementation Plan Development
Agriculture Work Group – Final Meeting Minutes
June 26, 2012
2:00 pm – 4:00 pm

In Attendance:

May Sligh (DCR – meeting scribe), Margaret Smigo (DEQ – meeting facilitator), Ram Gupta (DCR), James Beckley (citizen), Barbara McGarry (Henricopolis SWCD), Kemper Marable (Henricopolis SWCD), Sharon Conner (Hanover – Caroline SWCD), Marian Moody (Hanover – Caroline SWCD), Patricia Edwards (Citizen, tree-farm owner)

Meeting convened at 2:05 pm. Margaret began the meeting with a brief overview of the meeting goals and agenda followed by member introductions.

Margaret noted that the results from the homework assigned at the first Public Meeting would be assembled into a list that will be given to the Steering Committee. She asked if anyone would like to discuss constrains/solutions.

Attendees identified constraints/solutions regarding ways to identify stakeholders in the watershed by utilizing: biosolids permit info because each permitted farm must have a NMP for the application, tax-map data for localities using Ag-zoned properties to contact land owners, homeland security (some chemicals of certain quantity in ag-application are tracked and this could be a resource), slaughter houses could share information on their clients, work with districts using GIS Arial photography and infrared layers to correct land uses and identify potential areas where we'd want to contact land-owners to participate in BMPs (search for pasture areas, fencing/lack of fencing, chicken/hog houses, etc.). Additionally, stream walks could identify BMP opportunities. James discussed a project he was involved with as a citizen volunteer working with a Soil and Water Conservation District where volunteers walked teams and documented issues with photography (could also take lat and long with readily available technology).

The group discussed how we might reach the audience, especially horse owners as there are a lot of horses in the watershed but most don't qualify for cost-share and the experience of SWCDs is that the horse community is not interested in participating in cost-share program. It was suggested that we work through farriers, horse clubs, and veterinarians to get the word out.

In the watershed, there has been an increase of "homesteads" or small farms where folks will get a few chickens and goats and they multiply – in Hanover overall beef populations are downward trending. SWCDs stated that they've participated at many different events but they've not been successful at getting anyone to sign on to any particular practice at the event. With regard to alternative funding sources, James mentioned his idea of the counties setting aside a portion of ag-zoned property taxes to help farmers with their portion of cost-share – when their portion is too much for them to afford. An example of this was that Hanover-Caroline said the average grazing system costs around \$50K, and the farmer portion would be \$12500K – which is discouraging to a lot of farmers. Henricopolis mentioned they don't have the

same needs for stream fencing in their portion of the watershed and haven't had a single stream exclusion system installed as far as they were aware.

Margaret asked if there was any type of special "fencing funds" perhaps through the counties. To everyone's knowledge, the localities do not currently have any special fence-funding program.

Barbara mentioned in Henricopolis, they won't be getting any TMDL costshare dollars at least until 2014. Margaret said this is important to note in the IP.

There was a brief discussion about fencing estimates regarding the fact that the Land Use used to indicate "Pasture" is from 2006 – the most recent available. Henricopolis felt there was a lot of pasture indicated on the maps that may actually be developed areas and overall the estimated fencing in their district was overestimated. Margaret gave the maps out in the beginning of the meeting and there were a lot of questions and concerns. Margaret asked the group to hold off on that discussion until she gave a little more background regarding assumptions and details on how the maps were derived (in second half of meeting) and asked the group to first finish discussing items/questions on the bottom of the first page of handout, their input on these bullets will be beneficial to the overall IP development.

Margaret asked the groups what the education needs were in the watershed. The group returned to the issue of reaching the horse enthusiasts. The SWCDs have held "horse extravaganza" type events but little success with sign-up of BMPs. James suggested working through farriers or veterinarians/trainers. One problem seemed to be that there was only one BMP available for horse owners – for waste storage, and horse operations don't currently qualify for other cost-share BMPs. It might be beneficial to consider including voluntary BMPs for horse owners in the IP, should funding be made available, especially since they are so prevalent in the watershed.

Margaret gave an overview of the TMDL conclusions in the pamphlet (Tables 1 – 2b). Table 1 shows the subsheds that had impairment for bacteria and were being evaluated for different types of source reductions (where sources are direct and indirect bacteria sources from wildlife, livestock, humans, and pets over different types of land uses). Table 2a describes the scenarios by which allocation of the streams in Table 1 were evaluated, where scenario 8 was the final TMDL scenario. Margaret spoke a little bit about the rationale the modeler uses when going through each scenario, for example, typically right off the start, the modeler will reduce 100% of human sources first because there should not be any human waste being discharged into the watershed (it's illegal). Margaret also explained that in a watershed approach, allocation is done to the impaired watersheds to identify what scenario gets us to a 0% violation rate, then that scenario of reductions for each source type is applied to each subwatershed. Depending on what is actually in each subwatershed (looking to our population estimates) it may be that for some source reductions, we are already done. Margaret asked the group to turn their attention to Table 2b which gives the detailed evaluation, which involves reducing different source types

within watersheds in order to see what effect it has on % violation of the water quality standard. She explained what each column represented with regard to source types. The table is useful because you can see where some reductions were more successful for some more than other source types. This would indicate where some BMPs may be more beneficial than others, and can guide us during Implementation Planning.

The group next discussed Table 3, which were the existing BMPs from the DCR Ag-database. Kemper asked if these could be filter by county, others thought so and that there should be enough information to identify to subwatershed level. Kemper suggested that the tables include a column for county which would make it easier for SWCDs to determine which of these practices were in their districts.

Margaret explained how the maps for stream fencing were generated (text on page 6 of handout) and asked group if they thought Option 1 or 2 was more accurate estimate on amount of stream fencing needed. Where option 1 only included named, perennial streams, option 2 (which is in addition to option 1 lines) included the un-named perennial and intermittent streams. The two lines together (orange and pink) equal the stream fencing values in option 2 (Table 4). The more streams you include and depending on their proximity to 'Pasture', the higher your estimated stream fencing will be. She said that it's possible to do an additional scenario where we get in between these numbers (taking out "intermittent" for example, from option 2, would reduce the stream fencing needed). Sharon mentioned they do cost-share on intermittent so she thought it only made sense to include those streams for fencing. Patricia didn't understand why it would matter if you removed one over the other. Margaret stated these estimates are a starting point only – and DEQ didn't expect the number generated for stream fencing to be perfect because it's not feasible to ground-truth every "pasture" acreage identified in the maps. She thought as a start, SWCDs might first to be to look in areas in the maps where you expect higher densities of developed lands and make a judgement call as to whether or not the amount of "pasture" in the maps was accurate. If you are reasonably certain it isn't there – nix it and call it "developed" or "residential", etc., whatever you think is most correct for that location. It would be helpful to the modeler, to tell him if what we think the land use is, if we don't think it is pasture. Ultimately, changing land use in the model will change the types of bacteria that are applied to different land uses, and therefore change the types of BMPs needed in the IP. Margaret volunteered to help SWCDs look at aerial photography as well to do these land use adjustments. She made it clear that it was not her or DEQ's expectation for anyone to have to do watershed surveys to correct these estimates. That would be too costly in terms of time and resources, and getting the number exact was unnecessary.

There seemed to be an agreement that stream fencing would be necessary for horses, not just cattle and perhaps it would be necessary to quantify estimates for each type, since horse fencing would not qualify for cost-share.

There was a question about placing fencing on intermittent streams and whether this would conflict with cost-share or if we didn't put in enough stream fencing, whether that would

prevent SWCDs from obtaining funding. For example, if IP said we only need 100' of fencing, and they really need 1000', would this actually be a hindrance for the SWCD? Margaret said she didn't think so, but it was more likely that we would overestimate the number needed because the TMDL was conservative.

Henricopolis asked that DEQ/Maptech include columns for "county" on all tables – again it would help them decipher between districts easier.

There was confusion in Table 4 about what "Cost Share Fence Installed (ft)" represented. If this represented existing stream exclusion, it was not included in Table 3. Margaret said she would rectify this with the modeler, but couldn't say for sure at the time whether it was left out of Table 3, or whether it was an error in Table 4. She will get back to the group on this question. Henricopolis already mentioned they had not done any stream exclusion in their district, and Hanover-Caroline didn't say if that number looked right for existing stream exclusion.

Henricopolis mentioned the maps provided were too small for them to work with. Margaret said she pulled them out of the booklets to make them bigger, but it wasn't necessarily the intention for them to only work with these maps. She would like to share with them the shapefiles if they'd like to work with them in GIS – they all agreed this would be best. Margaret would ask the modeler to make them available and provide to the districts.

In a follow-up email, the modeler provided 'pasture' and proposed 'fencing' shapefiles. The shapefiles shared were a more simplified version of what was shared in the handouts. The explanation of how the shapefiles were simplified and how this affected pasture and stream fencing, is explained here (from Mohammad Al-smadi, modeler, Maptech-Inc):

"I went over the aerial photos of the watershed and adjusted the fencing based on what I thought was or was not pasture. In some instances, GIS generated fencing was removed and in other, more fencing was added. All in all, the proposed fencing length after this work is a total of 128,000 linear feet. This is over double the initial estimate when only the named perennial streams were used but about half of that when all streams were used."

At the time these minutes were finalized, DEQ and the modeler were continuing to work with the districts to arrive at the best estimates possible for stream fencing.

Regarding the questions on page 8, the group didn't feel comfortable commenting on whether option 1 or option 2 was better, and didn't say whether an intermediate (i.e. - remove "un-named perennial" or "intermittent") would be helpful. Ultimately, an answer will be needed from the group regarding how much stream fencing is needed for the project, otherwise DEQ/modeler/DCR would have to make a judgement call on an appropriate number. Margaret said the group has time to work on this and we can discuss more during 2nd WG meeting, however, we shouldn't be waiting until this meeting – we need to be actively discussing/working toward a better number between meetings.

There was no comment on the # of systems needed each for SL-6, LE-1T, LE-2T, or WP-2T, and the group was unsure if the 7% maintenance reserve for stream fencing was adequate.

Margaret asked the group to look at page 9 in order to discuss the preliminary estimates of BMPs needed, based on the TMDL in order to meet 0% violation of the water quality standard. The model generated conservative estimates; therefore it is unlikely that all BMPs included in the plan will need to be implemented to meet water quality standards. A phased approach will be used to implement BMPs, and generally, the timeline for Implementation includes the more desirable/cost effective BMPs initiated first, and those more difficult or costly to implement later on. This is particularly important with regard to retention ponds – which everyone agrees would not be a desirable BMP to implement. Margaret also mentioned that it's likely if we increase the numbers of more desirable BMPs, as well as update the land use (Pasture), we may need fewer of the less desirable BMPs to meet water quality standards in the model. Margaret mentioned ultimately, it's not the TMDL or IP that tells us we've done our job and restored water quality, it will be the water monitoring we perform. If we meet the water quality standard in-stream, then the stream can be delisted and technically, are not required to do any additional work.

The group evaluated Table 7, and Ram mentioned that what is on Table 3 and missing from Table 7 was FR-1 practices, and that we should add those to Table 7. May followed up later in an email with Margaret that in the recent Upper York IP, they focused on 3 cropland practices which were appropriate in their benefit towards reducing bacteria: permanent vegetative cover on cropland and FR-1.

Sharon said we should include cover crops, if it is allowed.

Barbara said a better cost estimate for both types of retention ponds in Table 7 would be \$8-10K.

Sharon, in a follow-up email to the meeting, mentioned that average costs of grazing systems in Hanover-Caroline SWCD were \$23,155.00 for 26 SL-6 grazing systems over the last 10 years in Hanover and Caroline Counties, which is approx. \$6.40 linear foot of exclusion with grazing land management. These numbers were based on smaller systems with approximately 3, 625 linear feet per system.

SWCDs mentioned they prefer seeing prices in "feet" as opposed to "systems" for the unit. Margaret mentioned that for the reader, it is probably easier to see in terms of systems, because that would indicate how many farmers you would need to approach to install these complete systems – versus putting something like 45,000', which is kind of abstract in a large watershed. She would ask the modeler if both estimates – systems and feet, could be included in the tables.

Sharon questioned whether farmers who applied for conservation tillage – cropland, had to also have an animal operation affiliated in order to qualify. We were unable to answer this during the meeting, but in a follow-up, Ram provided that yes, they would still qualify. The remaining

question was whether or not this practice – if not affiliated with an animal operation, would be beneficial at reducing bacteria. If not, then it doesn't seem practical to increase the number of these systems in the plan, although, they would be beneficial at reducing sediment and nutrients. At the time these minutes were drafted, the modeler had not yet responded.

Margaret explained that in the original iteration of the Government WG handout – which was sent to the SWCD folks a week prior, contained an error regarding the number of units necessary for the “vegetative buffer”, for both the residential and agriculture tables in the worksheet. This was later clarified and the worksheets (including the current Ag WG handout) have been updated. In the residential table, the preliminary estimates are based on assuming that ¼ of the 8000' of streams would need vegetative buffers resulting in 1.4 acres. In the agriculture table 7, she asked the modeler what the total footage was for vegetative buffers on pasture. At the time these minutes were drafted, the modeler had not yet responded, however, in the meeting, Margaret said that he assumed 5000' would need vegetative buffers, resulting in 3.4 acres, therefore, that 5000' is most likely a 1/3 or some portion of the total available stream footage available for vegetative buffers on pasture land. The modeler will provide a mechanism to help WG members see which subwatershed might most benefit from vegetative buffers.

Margaret explained that in the preliminary BMP estimates the vegetative buffers are assumed to be 30' wide. The preliminary estimates were kept low, because efficiency-wise they aren't the most effective BMP at reducing bacteria although they are very beneficial to the watershed at reducing nutrients and sediment (multiple benefits which the model is not able to capture). The Working Groups/Steering Committee may increase the number of units if they so choose.

Sharon asked if the 10' buffers could be used in these areas (Bay Act).

The group indicated they preferred including buffers as a part of stream fencing (LE-1T).

Margaret explained the schedule for upcoming meetings (general timeframe), and a doodle poll would be sent to set up the next set of meetings. If anyone prefers to just let Margaret know when they cannot attend, they could skip the doodle poll. Margaret explained that if you go to the doodle poll and NOT select any dates/times that will incorrectly tell her you can't attend any meetings. If you do the doodle poll, you should select the times you can attend. The doodle poll is expected to be out by July 9th or that week for end of July or first part of August.

The meeting concluded around 4:45pm.