

Chickahominy River Implementation Plan Development
Steering committee meeting – FINAL Minutes
Meeting: 11/27/12 @ 2 pm Minutes finalized: 12/17/12
Follow-ups to meeting questions or clarifications are addressed in italics

In Attendance: May Sligh (DCR), Megan Sommers (DCR), Ram Gupta (DCR), James Beckley (Board – SWCDs, Citizen), Olivia Hall (Henrico Co.), Christine Beish (Citizen), Jody Bryant (Citizen), Margaret Smigo (DEQ - facilitating), Kelley West (DEQ - scribe)

Following introductions, Margaret explained the meeting objective were to review the revised BMP estimates, BMP efficiencies, and draft public meeting presentation. Margaret provided the group with three handouts; a spreadsheet of the BMPs by program types within two main categories of residential vs. agriculture BMPs to show the breakdown of unit estimates and costs, a sheet of the bacteria efficiencies by BMP, and a printout of the slides which show the same type of information as the spreadsheet does which are slides included in the presentation.

Margaret stated that often, a summary of the previous minutes are sometimes compiled and the group will go over those, however she felt that the existing minutes available for each meeting are available if we need to return to them. If there are any questions about how we arrived at any figure within the worksheet, she's happy to go over that if need be and the group was encouraged to ask questions.

Spreadsheet review:

Pet Waste:

May said that in order to establish pet waste stations you must work through the locality to make sure they are going to maintain the trash pickup of the trash from the pet waste stations. To assure that maintenance will occur, there should be included in the write up a blurb that the localities working or HOA's maintaining them, as long as there is a responsible party identified. *This can be accommodated in the IP document.*

Household mailings:

Ram asked if the educational mailings per household? *Mailings are based on the number of households within the Chickahominy watershed.*

James suggested for mailings, Henrico and Hanover and includes the language in a water bill or annual water quality report and you will be getting out to the majority of people and save money on postage and envelopes. Christine said Hanover has already worked with her on a neighborhood program so they probably will work with us on such projects as this. *This can be a recommendation in the IP document to increase efficiency and save money.*

Olivia asked when stage 1 starts during this process or if it's after the IP has been approved? Henrico has already applied for grant money for some of the things on the list and want them to count if they put them in which is anticipated for 2013. *BMPs implemented at the beginning of 2012 and forward count*

towards implemented BMPs for this project. This is because the “existing condition” was modeled at the end of 2011, so all BMPs implemented after that day would be counted toward the total goal.

Christine asked what was the number from the draft last time for the composters? Margaret said the last handout contained an estimate of 16,500. Based on feedback, those have been reduced to 2510 in our current worksheet. James said there may be more benefit to put in pet waste stations instead of in pet waste composters, 20 will not stretch very far. Christine agreed, but felt we should not remove the composters completely. *The number of pet waste stations have been more than doubled (went from 20 to 50 watershed-wide) and the number of pet waste composters have been left as-is (2510 assuming 2 dogs per household). Reducing pet waste composter numbers would dramatically increase the quantity of other BMPs needed to reach the goal of attainment in the model. Pet waste composters are in stage II of the project, and hopefully the number actually needed, will be far less than what is called for in the model.*

James suggested we break up the numbers of pet waste stations per phases and making sure we break them up during phases. Advertise for people to adopt a station. Margaret said right now, 75% of the stations would be installed during stage I and 25% in stage II. Olivia said Henrico has already decided to put 5 pet waste stations in public area for 2013. May was thinking that at her neighborhood only put in the bag stations without the trash receptacle. There was a concern that the receptacle would not be maintained. However, Olivia said in Henrico, they had an issue in one area where when no receptacle was provided, people were tossing baggies in the storm sewer. *As mentioned in the previous page under pet-waste, verbiage suggesting that groups address maintenance of pet-waste stations prior to implementation can be accommodated in the IP document.*

Septics:

Ram asked do the counties have hookups included in their comp plans over the next 5 years? Margaret stated Maptech used the county layers to see the area they can hook up, given the number of homes in the area it's a reasonable amount of homes given the failure rate. Olivia said we have so many requests per year of people that want to hook up and public works would have this number

Ram clarified that there must be the ability within the treatment system/system capacity for that many homes to be connected. The counties should confirm whether or not they can connect that many homes, or else the BMP is unachievable and we should reduce the sewer connections, and replace with alternative systems. *Maptech provided the break-out of sewer connections by locality, Hanover 160 and Henrico 90. The failing septic systems were estimated as a fixed percentage in the TMDL, and Hanover and Henrico were the two localities with the the potential for sewer connections (New Kent and Charles City do not have this potential to our knowledge). There is no way of pinpointing where the failing systems are within either locality but both localities have knowledge of existing septic system parcels and can prioritize areas based on cost or areas known to have a high percentage of septic failures. The cost estimate for septic failures was provided by Hanover County (\$32,000 per home connected to sewer) which included all infrastructure needs. Mr. Dieter, by email, also confirmed that capacity (160 homes estimated for connection) would not be an issue. Marchelle Sossong with Henrico County, responded*

that the capacity would not be an issue (about 90 homes estimated for connection) but they are not certain about whether the cost estimate provided by Hanover Co. would be an appropriate estimate for Henrico. Margaret provided a map of known septic parcels within Henrico within the Chickahominy watershed to assist them in determining an appropriate estimate. Henrico hopes to have a cost estimate response by next week (week of Dec 17th). Therefore, to answer Ram's question- no, capacity is not expected to be not an issue for the stage I of implementation. The cost estimate for Henrico's sewer connections may change.

OTHER RESIDENTIAL

Margaret stated that retention basins are a last resort BMP since sometimes permitting can be involved.

James and Margaret discussed that the way rain gardens are displayed in the table (per acre) it's difficult to see the actual number of raingardens which would need to be installed. If using a 200sq' raingarden as a default, they discussed the calculation. *The calculations performed on the fly to estimate the number of raingardens needed in the meeting were off by quite a bit. We are now using the same cost estimates that were used in the Richmond IP which were \$19000 per treated pervious acre and \$94000 per treated impervious acre. The original estimate was \$19,000 per acres treated by raingarden. The total acreage of developed areas treated by rain gardens was reduced by half and now stands at 500 acres. The 500 acres are split into 150 impervious acres at \$94000 an acre and 350 pervious acres at \$19000 an acre for a total of \$20.75 Million.. There was a request to increase the percentage implementation in stage I to 50%, which has been accommodated.*

Margaret mentioned that for bioretention basins, they treat parking lots, roof tops into a larger type of rain garden. She said Hanover provided cost estimates from Hanover as they had some projects completed and sent us acres treated and cost. *The cost estimates and number of bioretention ponds will be updated in similar fashion as raingardens.*

Ram stated that for retention ponds, the number installed depended on the slope. It's based on the elevations on the topo, sometimes the pond can treat only 50 acres, and sometimes it can treat 200 acres. *To clarify, the BMP table did not include a number of retention ponds needed in the watershed. Rather, the table included the number of acres treated by a retention ponds in order to get the needed bacteria reduction. These are a last resort to meet attainment in stage II. The question Ram posed was whether the number of 5,000 acres treated is feasible. Feasibility for constructing a pond can be based on physical constraints, cost constraints, regulatory constraints and land-ownership constraints. Dealing with land-ownership constraints is beyond the scope of this study, since it would first require that we identify where specific structures should go, and then require a specific analysis for each location. Regulatory constraints would be similar because they would involve a wetlands determination at each specific site. As far as cost constraints go, we've got a cost estimate and potential funding sources, so it's up to the individual stakeholder or stakeholder group, working with the local conservation folks, to determine if the practice is economically feasible. That leaves physical constraints. If we know that the acreage exists in the watershed, then, by definition, there are locations in the watershed where the*

drainage can be treated with a pond. To summarize the answer to the question, yes, by default the BMP is feasible because acreage exists which can be treated by retention ponds.

The group expressed their interest in changing the efficiencies of retention ponds. Margaret asked, if we were to change the efficiency for retention ponds what should it be? We need to include them to meet our goal. May expressed that DCR was urging developers away from retention basins. James suggested if we are looking to treat 5000 acres in an old retention pond that's a lot of large area, if we are trying to get away from that kind of treatment we need to try and put something else in. *While the group expressed an interest in changing this as well as other efficiencies for BMPs, no alternatives have been provided, nor has any evidence been provided to confirm the current estimates are invalid. No alternatives or their efficiencies have been suggested. Part of the difficulty of substituting LID practices for more conventional BMPs it has been very difficult to identify efficiencies for the LID practices (with regard to bacteria). Most of the research is nutrient-based or volume-based. As an alternative and in the interest of time, text regarding LID practices and their anticipated/potential, but unquantified benefits for reducing bacteria could be added to the document. They would be included in the "promotable practices" table and a narrative regarding them (as was done in the James IP) will be included.*

Christine asked is there a way to calculate efficiency even if we have not seen it anywhere else; she would be interested in finding the goose and other efficiencies. *Margaret had previously spoken with the DGIF avian expert who knew of no research to determine bacteria reduction efficiencies of current nuisance wildlife management practices. This was relayed in previous emails regarding wildlife management practices.*

James mentioned the group could use the document as a vehicle to promote practices (rain gardens are great but can be hard for the homeowner to do because of HOA approval). Margaret mentioned she was happy to put any language in the document to help with what the steering considered necessary.

Christine asked why are so many rain gardens in the 2nd stage, its popular so shouldn't we break it up evenly in between the stages? Margaret asked what would be preferred and the group would like to see them split 50/50 between stages. *The raingardens have been allocated 50/50 by stage.*

Ram stated, for bio retention pervious areas and impervious areas the cost will be different. The cost will be much higher than 19000 for pervious areas, impervious 94000 will be okay. *To clarify, the table included for bioretention units, "developed" as the bacteria source. "Developed" includes pervious and impervious fractions within the total. The impervious portion is 30% while the pervious portion is 70%. During the James River IP development, it was determined that the costs of impervious (\$94,000 acre treated) and pervious (\$19,000 acre treated) bioretention were different. Ram suggested the costs be separated out by type and this change has been accommodated. Mohammad will breakdown the 500 acre of developed treated with rain gardens into 150 acres of impervious at \$94,000 an acre and 350 pervious acres at \$19,000 an acre. He will also break down the 200 acre treated with bioretention into 60 acre of impervious and 140 acre of pervious at the same cost conversion as rain gardens).*

May- BMP clearing house might give good guidance for cost, there is a link to it on our website.

James- the bacteria will be close to sediment because bacteria cling to sediment. *Clarification – James stated that the bacteria loading is tied to sediment runoff. Therefore, if you stop sediment runoff, you will stop most bacteria runoff (nonpoint source of bacteria).*

James- the vegetative buffer is saying it's going to be 20000 feet in length. What buffer ft are we assuming? Margret responded 35ft. What efficiency is it? Margaret directed the group to the efficiency table, which has efficiency of 100% within the buffer and 50% of an area equal to $\frac{1}{2}$. James questioned the treatment efficiencies; he thought they were probably $\frac{1}{2}$ of that amount. Christine agreed. Margaret asked if he could provide some type of citation to justify the change. *While the group expressed an interest in changing this as well as other efficiencies for BMPs, no alternatives have been provided, nor has any evidence been given to confirm the current estimates are invalid. The efficiency used for vegetative buffers are those used in the Chesapeake Bay model for sediment. Therefore, there is justification to continue with the efficiency we currently have. For clarification, the efficiency is not stating that a buffer is any given width (ie- 100 ft wide or 50 foot wide) rather it is saying that buffers have an excellent reduction efficiency within the buffer itself and 50% efficiency on areas adjacent to the buffer and up to double the area of the buffer. For example, a 1000 ft buffer (35 ft wide) on a developed area will have 100% efficiency on a portion of the developed area equaling 3,500 square feet (1000 * 35') and 50% efficiency on a portion of the developed area equaling 7,000 square feet (1000 * 35' * 2). The reason we limit the impact of the buffer to its area and twice its area from adjacent areas is that for areas beyond that, even if their flow path goes through the buffer, this flow will be concentrated and will not get filtered by the buffer. Buffers only filter flow when it passes the buffer as sheet flow.*

Ag-BMPs:

The horse waste composter has 99% efficiency. We were thinking if someone got a composter they would have to participate in a workshop in order to get part of the cost back. This is very similar to the pet waste program.

Fencing:

Christine- is there a way to count how many cattle farms are in the watershed? Margaret said during the IP that the SWCDs were able to help with the population numbers because they know the majority of the farms and their locations. However, based on our populations noted in the TMDL, there are more horses in the watershed than cattle.

Ram noted that intermittent streams can be included for cost share on a case by case basis. Margaret responded that she understands, however DCR requested that we separate out the fencing units in order to let the SWCDs know how many would qualify for cost share and how many would not. We have no idea of knowing what the "case-by-case" basis will result in.

Ram said regarding the average fencing length number, in each IP the contractor has determined a watershed specific number and it should not be based on the number from another IP watershed.

Mohammad calculated the potential length per system based on GIS by grouping fencing segments that look like they should be grouped based on aerial photography and came up with 1,100 ft per system (which is closer to the 840 ft per system suggested in the first WG meeting). The change of the average system length from 2100' to 1100' resulted in a change in the cost per system. The cost per system has been revised based on the following components: 1 well = \$5000 + 1 pump = \$2600 + 2 watering troughs = \$3000 + pipeline = \$1000 + 1100ft @ \$2/ft = \$3300 = \$14,900 per system (based on 2008 estimates from Gary Boring at New River Highlands RC&D). The total number of systems is of course higher now that the length per system went down.

Ram stated the LE-1T is reasonable cost, SL6 is reasonable, and SL-6 can be combined with LE-1T. Margaret said she could combine LE-1T and SL6 as long as there wasn't some reason by the districts to keep them separate. *LE-1T has been combined with SL6 at the request of the group.*

Mohammad has provided updates to fencing numbers in the attached table. The ~ 3300 feet of fencing already installed in the watershed will be assumed as 3 systems (each around 1100 ft) so the total number of systems still needed is the calculated number -3. The adjusted fencing numbers were derived as follows:

-Total length of stream-length available: 127695 ft

-Half is for horses therefore, the number of systems for horses is $127695 * 0.5 / 1100 = 58$ -systems (assumed non-cost share).

-Cattle non-cost share (stream-length along intermittent streams) is $127695 * 0.7 / 1100 \sim 41$ systems
Cattle cost share (stream-length along perennial streams) is $127695 * 0.3 / 1100 \sim 18$ systems.

Total length of 3200 ft has already been installed equaling 3 systems in the watershed. This leaves 15 systems to be implemented of the 18. We will have 2 WP-2Ts and 13 LE-1Ts.

Christine- on the James R. table the BMP's such as the shallow marsh and submerged gravel wetland, are they different than rain gardens? Margaret responded that yes they are different, they are engineered systems.

Draft Presentation:

Slide 4-James, can we change the color from yellow to something easier to see? *James was referring to the impairment map, and yes the color can be changed.*

James- will you specifically talk about fecal bacteria in these slides instead of just bacteria? *Yes, the facilitator will elaborate.*

Slide 13- check and see if these are counted in stage one, or if we do more. And what date will stage 1 start. *As mentioned in a previous page, the implemented BMPs are those done beginning in 2012, after the "existing condition" was modeled for TMDL development at the end of 2011. The practices displayed in this slide are considered "done" in the watershed. We would subtract what has been done in the watershed if 1) If the practice was done after "existing condition" modeling was performed, or 2) If the BMP in the plan suggests ALL possible be implemented. An example of the latter is stream fencing, where 3200' has been installed (based on 1100' per system ~3systems). Since the TMDL calls for 100% of cattle access to be eliminated, we must subtract the "done" systems to see what is available for new*

implementation. 127695' available for fencing/1100' per system = 118 systems – 3 done systems =114 systems to implement.

Slide 16- remove a lot of the extra data from the slide, only show big bullets and not include the explanation. *Will revise this slide.*

Slide 16- get rid of sl6 and group le1 and sl6 together. *Will combine the two practices.*

Slide 35- can we break it up and have federal on one slide and state/local funds on another? *Yes*

Discussion about wildlife reduction:

James- there is the 77% wildlife reduction; you might want to put it in the end something about reducing wildlife if none of these steps work. Margaret responded that in the IP document, we always reference the ability to conduct a UAA, however, we are usually pretty explicit that wildlife loads are background, and our TMDLs are conservative. While reductions are high, we don't expect it will be necessary to make all reductions called for within the IP. The monitoring data determines when we are done, not the number of implemented practices. *DEQ does not typically address wildlife reductions in implementation. Wildlife sources of bacteria are considered background loads, and it is debatable as to whether this is a source which should be reduced. However, several of the BMPs in the IP will remediate a portion of wildlife loads. "Nuisance" wildlife management will be a promotable BMP in the document.*

Ram- can you distinguish between the nuisance populations and say contact local authorities? *We cannot separate nuisance wildlife numbers from wildlife numbers in general. We can make the distinction that nuisance wildlife can and should be managed with proven, effective BMPs. Language reflecting appropriate promotable BMPs for nuisance wildlife will be included in the document.*

James- should we include a workshop bmp for residential to include this?

Jodie- can we have contacts for master gardeners, they already have some of this outreach established, it may not be on a chart or measurable. DGIF has programs, nwf has programs, and we can just have ways to direct people to those programs. We don't have to add this to the IP, I just want you to keep your eyes open to programs already in place.

Margaret- what else for this IP do we need to add about a residential workshop?

James- stormwater runoff, pet waste, nuisance wildlife,

Christine- 3-4 workshops about \$1000 a workshop, only during stage 1,

Olivia- the county has an interest in this due to recent algal blooms in the area; it will help with nutrient reductions also.

James- I will talk to SWCD and I could potentially teach one, can we leave it open for who is teaching it? A booklet would work also.

A residential workshop using information provided by stakeholders has been added within stage I of implementation. The components of the workshop are as follows : \$1000 for each workshop (total \$5000), \$4.66 per booklet (~50pp/workshop = \$1165), and \$0.41 for ad copies (50 ads/workshop = total \$20.50), and for newspaper notices \$125 per notice (x5 (one workshop per year)= total \$625). The workshops would teach homeowners about the BMPs they could install on their own properties, proper lawn management, stormwater management, pet waste management, resident goose management and human techniques for reducing their impacts to water quality, septic/sewer owner tips and maintenance, as well as teaching water quality basics and introduce them to citizen monitoring in the watershed.

In correspondence with Hanover SWCD, it was decided that the 1,775 acres of Reforestation of Erodible Crop/Pasture (FR-1) should be removed, due to concerns that it would encourage farmers to convert viable farmland to forest.

The meeting adjourned at 4:30pm.