

Hat and Black Creek Community Engagement Meeting

Nelson Memorial Library, Lovingston VA

January 10, 2024

Participants

Sara Senn (TJSWCD)	Yvette Stafford
Markley Ligon	Heidi Crandall
William Perry (VADOF)	David Collins (TJSWCD)
Reid Copeland	Anne Witt (VADOE)
Dick Whitehead	Courtney Harlow Humphreys (TJSWCD)
Hal Loken	Jim Saunders
Mike Yager (TJSWCD)	Emily Hjulstrom (Nelson County)
Robert McSwain	Conny Roussos
Nesha McRae (VADEQ)	Tara Wyrick (VADEQ)
Caleb M.	

Meeting Summary

I. Follow Up Monitoring

The meeting began with a welcome from Nesha McRae (DEQ) followed by introductions. Nesha gave a recap of where things were left off with the project at the last meeting and explained that challenges had been encountered in identifying an appropriate phosphorus reduction target (endpoint) for Black Creek. DEQ collected three additional phosphorus samples in the summer of 2023 to confirm that phosphorus remained an issue in Black Creek. Nesha explained that she had concerns that previous monitoring results were skewed following the overflow at the STP in spring 2021. Nesha shared the monitoring results, which were still elevated in 2023. A participant asked if monitoring was conducted above the STP discharge. Nesha explained that DEQ samples right above the watershed outlet to get a holistic picture of water quality in Black Creek.

II. Setting Reduction Goals for Phosphorus in Black Creek

The group discussed the two processes that were used to develop a phosphorus reduction target for Black Creek. The AllForX model was initially used to set an endpoint, which would have required a 72% reduction in phosphorus in the watershed. Nesha explained that given current best management practices (BMPs) available to reduce phosphorus, this level of reduction would not be a reasonable goal for Black Creek. In addition, it would require modification of the STP permit and an upgrade to the facility to incorporate phosphorus removal technologies into their treatment system. This would necessitate a considerable investment by the Nelson County Service Authority. A concentration-based endpoint was also calculated for phosphorus in Black Creek. A similar approach was used in the Little Otter phosphorus TMDL, where the 90th percentile of phosphorus concentrations from a non impaired reference stream was used to set the endpoint. Hat Creek was selected as a reference for Black Creek since it has similar characteristics and no apparent phosphorus issues. A concentration of 0.092 mg/L was used as the endpoint to calculate necessary reductions in phosphorus loads in the watershed. The

result was far more reasonable, though it would still require considerable reductions from point and non-point sources in the watershed.

III. Discussion of Phosphorus Sources

Participants asked what the major sources of phosphorus are in the watershed and how these estimates were calculated. Nesha responded that hay land is the largest source, which is a result of the extent of hay land in the watershed. Pasture and urban impervious areas are also considerable sources as is groundwater. A participant asked whether we differentiate between hay land receiving biosolids application and those fertilized with manure or commercial fertilizer. Nesha responded that the model does not differentiate between those sources. Load estimates are developed using a watershed model that takes watershed characteristics into account such as soil types, slopes, rainfall, and land use. Reported values have not been measured from different land uses, they are derived using the watershed model. A participant asked why Hat Creek does not have similar phosphorus concentrations given that land use and watershed characteristics are similar. Nesha responded that there is not an STP on Hat Creek, and that it is a much larger stream. There are additional unique characteristics in Black Creek that are likely contributing to the elevated concentrations we are seeing in the stream. Participants discussed current programs to support nutrient management planning, which are offered through the Thomas Jefferson Soil and Water Conservation District and the VA Department of Conservation and Recreation.

IV. Addressing Nelson County STP Phosphorus Load

Participants asked where the phosphorus discharged from the STP is coming from. Nesha shared results of monitoring conducted by the Nelson County Service Authority at their pumping stations directing effluent to the STP on Black Creek. Phosphorus concentrations varied considerably, ranging from 1.2 mg/L at the STP outfall to 8.3 mg/L at the Henderson Store pumping station in Piney River. One participant suggested that elevated phosphorus concentrations might be coming from the use of detergents containing high levels of phosphorus. It was suggested that an outreach campaign be targeted at residents encouraging the use of detergents containing low levels of phosphorus. The group discussed how difficult it is to get people to change their behavior. Nesha explained that Virginia had been working to upgrade sewage treatment plants across the state to improve their nutrient removal efficiency. Nesha explained that the STP on Black Creek was not designed to remove phosphorus, and that they do not have a concentration limit in their permit. They are currently discharging well below their permitted design flow of 0.22 MGD. In addition, the average phosphorus concentration at their outfall is below the target concentration for small facilities in VA of 2.5 mg/L (average = 2.4 mg/L). A participant asked if the county could provide financial assistance with needed upgrades. This would need to come as a directive from the County Board of Supervisors. A participant suggested that residents should approach the board about this to encourage their support. The Nelson County Service Authority is currently facing several significant expenses as they work to address needed upgrades at facilities and expansions to ensure that they can address future demands. Some of these upgrades and expansions may help take some pressure off the facility on Black Creek. Additionally, their reservoir on Black Creek is filling in with sediment and needs to be dredged. This will be very expensive. The Service Authority wants to be a partner in the effort to restore Black Creek, but they have borrowed so much for recent upgrades at facilities that they are now up against a ceiling. Nesha noted that DEQ has grant

programs available to provide support for upgrades to STP's, and that conversations regarding funding to incorporate phosphorus removal technology at the Black Creek facility are already underway.

V. Watershed Plan Alternative

The group moved on to discuss the option of developing a watershed plan for Hat and Black Creeks rather than continuing with development of a TMDL. This approach would not require modification of the STP's permit and would move the current planning process directly into the planning phase for BMP implementation. Nesha explained that this approach is well suited for watersheds where the community is very engaged and invested in water quality improvement. Additionally, the Nelson County Service Authority has indicated their support for the project and is willing to work with partners to make the needed upgrades at their facility on Black Creek. The watershed plan approach would give the Service Authority time to work with partners to locate funding for these upgrades and complete them within a reasonable time frame. However, Nesha noted that if the watershed plan is not effective in restoring aquatic life in the streams, then a TMDL will still be required.

VI. Phosphorus Reduction Scenarios

The group reviewed four phosphorus reduction scenarios for Black Creek (Table 4 in the handout). Each scenario included a 54% reduction for the STP. Nesha explained that reaching anything over a 50% reduction in phosphorus from non-point sources would be extremely difficult to accomplish without significantly altering the watershed landscape (e.g., converting a large amount of hay land to forest). This is not the goal of this process. Participants discussed practices that can be used to reduce phosphorus from agricultural and urban sources. A participant asked where property owners can get information on residential fertilizer application and conservation practices that residential property owners can implement. Nesha responded that the Department of Conservation and Recreation has an urban nutrient management program. The Thomas Jefferson Soil and Water Conservation District (TJSWCD) also has a program to support homeowners interested in implementing conservation practices.

In addition to the final reduction scenarios, the group discussed a draft interim reduction scenario (Table 5 in the handout). Nesha explained that this scenario assumes that the uniform reduction scenario (Scenario 1 from Table 4) is selected by the group. The scenario can be modified depending on what the group selects for the final scenario. The interim reduction scenario assumes that the STP will continue to discharge at a rate of 0.12 MGD (well below their permitted design flow) and at an average phosphorus concentration of 2.4 mg/L. The interim scenario is based on accomplishing approximately half of the phosphorus reduction called for from non-point sources, assuming that efforts would also be underway to reduce sediment runoff from these sources. Nesha explained that having interim targets and goals allows us to evaluate how water quality is changing as implementation occurs. A participant asked when DEQ typically conducts monitoring once implementation is underway. Nesha responded that DEQ usually waits a couple of years to allow practices to become fully functional before conducting follow up monitoring.

VII. Implementation Timeline

A participant noted that any interim goals should allow sufficient time for outreach, which can take a while. It can also take a long time to get approved for cost share programs that provide incentives for

BMP implementation. The project timeline should take these delays into account. One participant noted that the Conservation Reserve Enhancement Program (CREP) is an excellent program that pays for installation of riparian buffers and livestock exclusion. Cost share for this program can exceed 100% of project costs. The James River Association has a very successful buffer program that pays for buffer planting in addition to maintenance. A participant noted that when it comes to livestock exclusion, most of the low hanging fruit has already been picked. It will be difficult to get remaining property owners to install fencing and buffers. The group discussed outreach ideas that would be most effective for the community. Open houses to share information from different organizations are great but participants didn't think that we would get many new participants this way. The group discussed the value of going to where property owners are gathering already. One participant suggested reaching out to producers at pesticide application recertification meetings. This is a requirement that many property owners have to meet. The Farm Bureau and Cooperative Extension should be included as partners in any outreach. Participants agreed that nobody likes to be told what to do, so outreach to increase awareness of water quality issues will be important. There aren't a lot of great websites that can be used to get the word out to county residents. Mailers are probably the best option.

VIII. Funding Discussion

Nesha explained how the watershed plan can be used as a tool to obtain funding for implementation efforts. DEQ has a grant program to fund implementation of watershed plans. It is important to make sure that all implementation ideas get captured in the plan, because DEQ funds can only be used to support practices that are identified in the plan. While funds can be obtained to support existing BMP cost share programs, specific projects can also be identified in the plan and funded. Nesha mentioned a few examples including stormwater basin retrofits and streambank restoration projects. The group could also consider including extension of existing grant funded programs like the James River Association's buffer program in the plan. If this was done, additional funding to support the program could be requested in a grant proposal. It was noted that existing BMP cost share programs do not provide sufficient support for streambank restoration efforts. A participant asked how detailed the plan will need to be with respect to the location of different potential projects. Nesha explained that the plan should not call out specific property owners, but that the greater level of detail that can be included regarding project extent and costs, the easier it will be to prepare a grant proposal for funding. In addition to DEQ's grant program to support implementation efforts, there are other grant programs that could support these efforts (e.g., National Fish and Wildlife Foundation).

IX. Selection of a Reduction Scenario and Next Steps

The group returned to review of Table 4 in the handout. Nesha asked for participants to vote on the different scenarios. Scenario 1, which assumes a uniform reduction from all the different sources, was the most favorable scenario for participants.

Nesha asked the group whether they supported moving forward with watershed plan development rather than continuing with the TMDL development process. The group agreed that this was the best option. Nesha explained that there will be a few more meetings (probably three) to discuss BMPs to include in the plan, associated costs, a project timeline and education and outreach strategies. The next meeting will likely be held in March. Nesha thanked participants for attending and the meeting was adjourned.