Hat and Black Creek Community Engagement Meeting

Nelson Memorial Library, Lovingston VA
December 3, 2024

Project Updates

- The draft TMDL report has been completed and was distributed to the group for review on October 29th.
- The implementation plan is currently under development. This plan will be based on the updated sediment and phosphorus reduction scenarios included in the report shared in October.
- A final public meeting will be held once the implementation plan is completed. This meeting will be an opportunity to present both the TMDL report and the implementation plan to the larger community.

BMP Implementation Scenarios

The BMP implementation scenario shown in **Table 1** was developed to meet sediment and phosphorus reduction goals for agricultural land uses established in the Hat and Black Creek TMDL report. **Table 2** and **Table 3** provide implementation scenarios for developed/residential areas and eroding streambanks, respectively.

Cost estimates were developed for best management practices (**Table 4** through **Table 6**) using data from the VA Agricultural Cost Share Program and the Virginia Conservation Assistance Program, and data collected from the Center for Watershed Protection, the Center for Green Infrastructure and Hirschman Water & Environment.

Questions to Consider

- Are there any practices that you would increase or decrease?
- Does the % of land use receiving a practice appear unreasonable for any practice?
- Do any practices look cost prohibitive?
- Does the proposed approach seem balanced between the different pollutant sources?

Table 1 Agricultural BMPs needed in the Hat and Black Creek watersheds to meet sediment and phosphorus reduction targets

Land use	BMP description	BMP units	Total Extent		% Land Use Treated	
			Black	Hat	Black	Hat
Pasture	Livestock exclusion with tree planting	Feet	1,391	4,939	10%	5%
	Livestock exclusion with 35-50 ft buffer		11,126	39,512	80%	40%
	Livestock exclusion with 10-25 ft buffer		695	2,470	5%	3%
	Livestock exclusion with 35 ft buffer-*no off stream water*		278	988	2%	1%
	Exclusion fence maintenance (10 yrs)		1,349	4,791	10%	5%
	Improved pasture management	Acres	159	330	68%	30%
	Permanent vegetative cover on critical areas		1	0.26	0.49%	0.02%
	Aforestation of erodible pasture		12	0.26	5%	0.02%
	Nutrient management		108	NA	46%	0%
Cropland	Continuous no till	Acres	NA	1	NA	5%
	Cover crops			1		5%
Hayland	Forest buffer	Acres	7	25	2%	2%
	Aforestation of hayland		121	24	25%	2%
	Nutrient management plan		242	0	50%	0%
Vineyard	Cover crops	Acres	NA	71	NA	45%
	Grass filter strips			7		5%
	Permanent vegetative cover on critical areas			3		2%

Table 2 Urban/residential BMPs needed in the Hat and Black Creek watersheds to meet sediment and phosphorus reduction targets

Land use	BMP description	BMP units	Total Extent		% Land Use Treated	
			Black	Hat	Black	Hat
Urban/Developed	Tree planting	Acres	0.57	0.15	0.5%	0.1%
	Bioretention filters	Acres treated	6	0.52	5%	0.4%
	Bioswales		4	0	3%	0%
	Vegetated open channels (grass swales)		6	0	5%	0%
	Wet ponds and wetlands		4	0	3%	0%
Turfgrass	Tree planting	Acres	35	8	21%	2%
	Bioretention filters	Acres treated	2	0	1%	0%
	Conservation landscaping		25	0	15%	0%
	Nutrient management plan		25	0	15%	0%
Gravel	Gradebreak installation	Number	4	3	4%	1%
	Drainage outlets		4	3	4%	1%

Table 3 Stream restoration BMPs needed in the Hat and Black Creek watersheds to meet sediment and phosphorus reduction targets

Land use	BMP description	BMP units	Total Extent		% Land Use Treated	
			Black	Hat	Black	Hat
Streambank erosion	Streambank stabilization	Feet	5,821	7,383	20%	6%

Table 4 Agricultural BMP implementation cost estimates

Land use	BMP description	BMP units	Cost/unit	Total Cost	
				Black	Hat
Pasture	Livestock exclusion with tree planting	Feet	$30	$41,721	$148,170
	Livestock exclusion with 35-50 ft buffer		$18	$200,261	$711,216
	Livestock exclusion with 10-25 ft buffer		$18	$12,516	$44,451
	Livestock exclusion with 35 ft buffer-*no off stream water*		$5	$1,391	$4,939
	Exclusion fence maintenance (10 yrs)		$4.50	$6,070	$21,559
	Improved pasture management	Acres	$300	$47,688	$99,096
	Permanent vegetative cover on critical areas		$3,000	$3,422	$791
	Aforestation of erodible pasture		$200	$2,386	$53
	Nutrient management		$3	$324	$0

Land use	BMP description	BMP units	Cost/unit	Total Cost	
				Black	Hat
Cropland	Continuous no till	Acres	$100	NA	$114
	Cover crops		$65	NA	$74
Hayland	Forest buffer	Acres	$1,000	$7,384	$24,537
	Aforestation of hayland		$1,000	$120,762	$23,587
	Nutrient management plan		$4	$966	$0
Vineyard	Cover crops	Acres	$65	NA	$4,594
	Grass filter strips		$80	NA	$565
	Permanent vegetative cover on critical areas		$3,000	NA	$9,425
			TOTAL COST	***$443,924***	***$1,093,172***

Table 5 Urban/residential BMP cost estimates

Land use	BMP description	BMP units	Cost/unit	Total Cost	
				Black	Hat
Urban/Developed	Tree planting	Acres	$1,500	$860	$225
	Bioretention filters	Acres treated	$30,000	$172,006	$15,567
	Bioswales		$36,570	$135,275	$0
	Vegetated open channels (grass swales)		$24,380	$139,784	$0
	Wet ponds and wetlands		$22,612	$83,643	$0
Turfgrass	Tree planting	Acres	$1,500	$52,464	$12,632
	Bioretention filters	Acres treated	$25,000	$41,245	$0
	Conservation landscaping	Acres	$8,500	$210,349	$0
	Nutrient management plan		$74	$74	$0
Gravel	Gradebreak installation	Number	$5,000	$17,593	$12,569
	Drainage outlets		$4,000	$14,075	$10,055
			TOTAL COST	***$867,368***	***$51,047***

Table 6 Streambank restoration cost estimates

Land use	BMP description	BMP units	Cost/unit	Total cost	
				Black	Hat
Streambank erosion	Streambank stabilization	Feet	$305	$2,844,024	$3,372,031

Project Timeline and Phased BMP Implementation Scenarios

- Selecting an overall timeline for implementation of best management practices
    - Typically between 10-15 years depending on the extent of implementation needed
    - Consider degree of interest and funding available

    - Implementation of reductions for permitted sources will be handled by permittee and DEQ water permits staff
- Phased implementation allows for continuous evaluation of implementation progress and water quality improvements
    - Typically divide implementation into two phases
    - Could consider a smaller extent of implementation in Phase 1 due to the time it takes to build trust and get participants on board

Education and Outreach Strategies

- Agricultural outreach efforts
    - Farm tours
    - Field days (Cooperative Extension)
    - Other suggestions?
    - Key partnerships?
- Residential outreach efforts
    - Mailings to promote VA Conservation Assistance Program
    - Partnership with Nelson County to explore opportunities for stormwater management practices

Next Steps

- Completion of the draft implementation plan and distribution to the group for review
- Final public meeting
    - Evening meeting with larger target audience
    - Larger venue, suggestions?
    - Present draft study and implementation plan