

Mill Creek of the South Branch of the Potomac  
Project Proposal for Clean Water Section 319(h) Funding  
FY 2009



West Virginia Conservation Agency

In cooperation with  
Potomac Valley Conservation District  
WV Department of Agriculture  
WV Department of Environmental Protection  
USDA Natural Resources Conservation Service  
WV Department of Health & Human Resources  
WVU Extension Service  
Cacapon Institute

Submitted June 1, 2008

Budget:  
319 Funding Request **\$174,000**  
State Match \$51,843.00  
Local Match \$71,250.00  
**Total Project: \$297,093.00**

## **Project Summary**

The Mill Creek watershed is located within both Grant and Pendleton counties of West Virginia and includes North (WVPSB – 25- B) & South (WVPSB – 25 – C) Mill Creeks as well as the Mill Creek main-stem (WVPSB - 25). The watershed is predominantly in agricultural production and forestland with minimal urban presence. This watershed has been deemed as a “priority watershed” by the West Virginia Chesapeake Bay Implementation Committee.

A TMDL was developed by EPA in 1998 and reported the need for fecal coliform contamination to be reduced by 37.7% to achieve the state water quality standards. A suite of Best Management Practices (BMP’s) have been selected to help reach this reduction goal.

This proposal is the first installment of BMP’s that will be installed over a two year time frame, in order to meet the goals set forth in the watershed based plan. BMP’s to be installed in the first two years will include: 133 acres of riparian buffers, 75 of these acres with fencing, 2 alternative watering systems, 2 livestock animal waste management systems/relocations, construction of 1 litter sheds and upgrade of 2 failing septic. Funding is only being sought for the feedlot relocations/livestock waste management systems, litter storage sheds and septic upgrades. It is anticipated that the buffers, fencing and alternative watering will all be covered under CREP or other buffer programs.

If the suite of BMP’s is installed at the above mentioned schedule, fecal coliform loading would be decreased by 17.39% (2.642E+14). This percentage reflects buffers and fencing that have been installed post-TMDL, pre- watershed based plan development, plus an additional 5.45%.

## Mill Creek Watershed

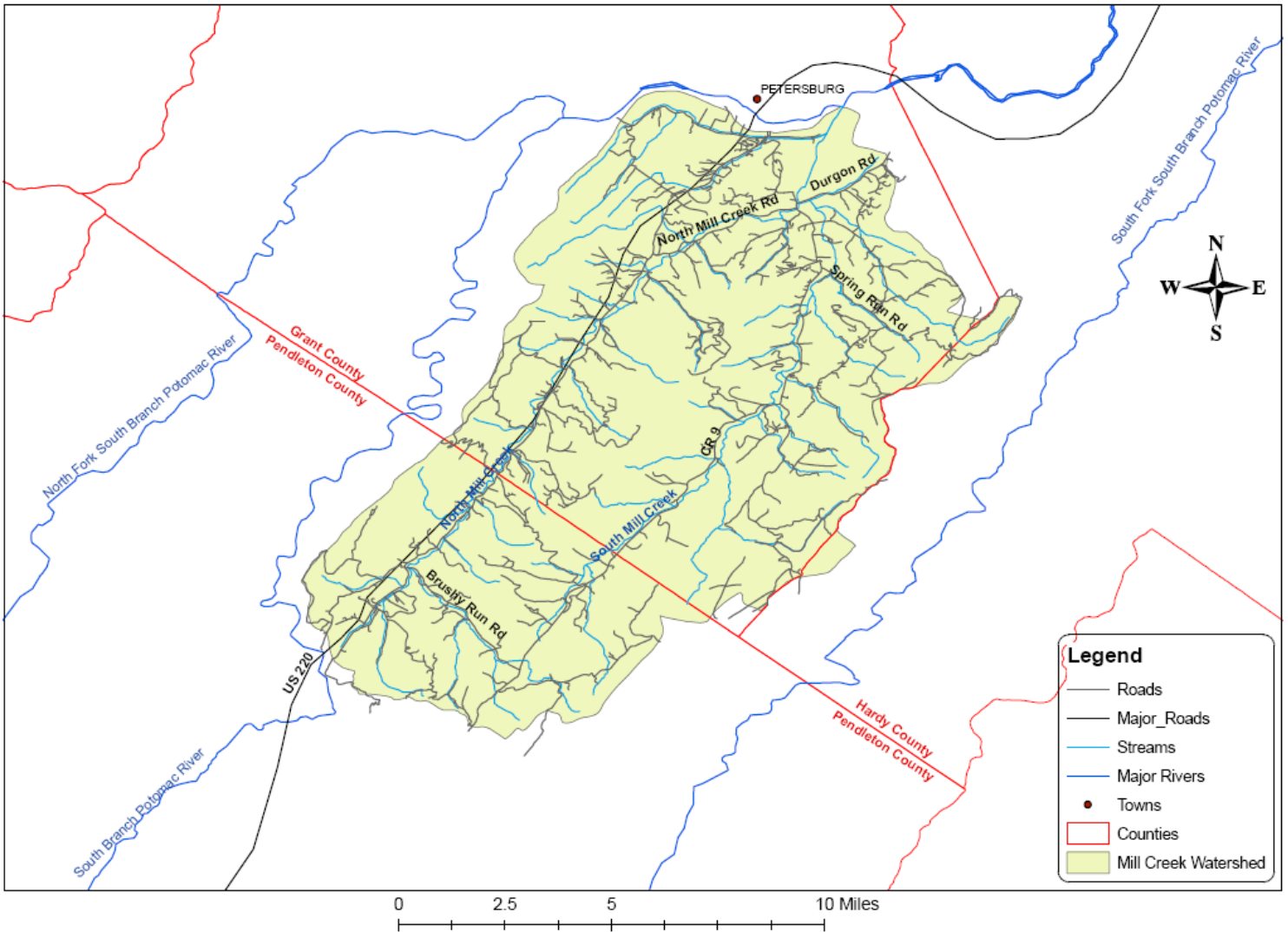


Fig. 1 Mill Creek Watershed

### **Background**

The Mill Creek watershed is a sub-watershed of the South Branch of the Potomac (SWS7001). It includes North and South Mill Creeks, as well as the Mill Creek main-stem, and originates in Pendleton County, West Virginia. Both of the tributaries flow northeast, and converge into Mill Creek just north of Dorcas, in Grant County. Mill Creek then flows approximately 2.4 miles further until it joins the South Branch of the Potomac River. This River continues north until it joins the North Branch to form the Potomac River which ultimately flows into the Chesapeake Bay.

The Mill Creek Watershed lies in an area of West Virginia characterized by unique Ridge and Valley topography. This topography is characterized by long, even ridges, with long, continuous valleys in between.

Land use in the watershed is predominantly in agricultural production and forestland with minimal urban presence. Agricultural activity in the Mill Creek watershed consists mainly of beef cattle and poultry production.

While the watershed is rural, it includes several small communities such as Landes, Rough Run, and Dorcas. Dorcas Elementary is a small school situated near South Mill Creek. There are also a handful of housing developments in the watershed with plans for additional developments in the future. The West Virginia Division of Natural Resources operates two fish hatcheries/rearing facilities; one on Spring Run and the second on Johnson Run. Grant County operates a small airport in the easternmost section of the watershed and Allegheny Wood Products, a hardwood lumber production company, is located adjacent to Johnson Run.

The U.S. Geological Survey (USGS) conducted a study from March 1994 to August 1995 for the Potomac Headwaters (PHIWQP, 1996). The USGS reconnaissance survey provided the best long-term multi-year data set at that time. The results indicated that more than 25% of the Mill Creek samples had fecal coliform concentrations greater than 200 cfu/100 ml. Based on this data, Mill Creek was considered threatened and placed on West Virginia’s 303(d) list of water quality impaired streams for fecal coliform bacteria contamination

The TMDL (EPA, 1998) described the load reduction needed for the non-point source pollutants to be as follows:

**Table 2. Non-point Source Load Reductions to Meet TMDL Allocation (EPA, 1998)**

Land Use	Annual Allocation (cfu)	% Reduction
Agriculture and Pasture	$9.1869 \times 10^{14}$	37.7
Urban	$1.6429 \times 10^{12}$	0
Forest	$4.3364 \times 10^{13}$	0

The TMDL documented cattle and poultry production. Within the Mill Creek Watershed, at that time, there were 38 broiler houses and 2 breeder houses, housing approximately 1,064,000 broilers and 18,000 breeders, respectively. The estimated number of cattle in the watershed was 740, distributed between pasture and 24 cattle feedlots and winter feeding areas. The density of cattle was assumed at 1 cow per 4 acres.

Since the development of the TMDL, significant implementation of agricultural BMP’s has occurred within the watershed. This has been a direct result of the USDA PL-534 Water Quality Project and other Farm Bill programs. Although past programs have provided considerable assistance to agricultural producers in the area, there are still many landowners who need additional assistance to reduce agricultural runoff and to limit direct livestock access to the stream. Funding for the PL534 program has ended and many producers are not qualifying for existing cost-share opportunities based upon the competitiveness of the programs or the fact that many programs are “an all or nothing” shot, meaning all water quality issues identified on the farm have to be addressed in order

to qualify for funding. With the current status of the economy, this requirement often dissuades participation.

The Mill Creek Watershed Based Plan calls for a 33.17% reduction in fecal coliform loadings. In order to meet this reduction, the model to calculate the load reductions for the Watershed Based Plan proposed: the implementation of five animal waste storage systems and/or relocation of feedlots with runoff control, 400 acres of riparian buffers, 200 of which would be fenced with alternative watering, acres of wetland restoration and 6 septic upgrades. The Incremental 319 Project Proposal will focus on the reduction of fecal coliform in the Mill Creek watershed through a suite of targeted BMP's which will include the establishment of riparian buffer zones, fencing, providing alternative watering sources for livestock, relocation of feedlots and redirecting runoff from existing systems. Although poultry litter storage was not cited in the original watershed based plan, several farmers have applied for funding for this practice and have not ranked out through the competitive USDA Environmental Quality Incentive Program (EQIP). There are many non-poultry producing farmers who are purchasing litter as a fertilizer and storing it adjacent to the stream. WVCA considers this likely to contribute to fecal coliform loading. Wetland restoration is also considered an important factor in any environmental water quality project and a goal of two acres was included.

The Mill Creek Watershed is rural, with a human population distributed at low density throughout the watershed. Approximately 2,350 residents use septic systems; some of these may be straight pipes. Failing septic systems and straight pipes can discharge fecal contamination into water bodies and contribute to the fecal coliform loads. Upgrades to existing failing septic systems within close proximity to the stream could potentially have a detrimental affect on stream health. Through a landowner survey performed during the development of the watershed based plan, groundwater/well protection and failing septic systems were the number 1 and 3, respectively, concern of respondents. The upgrade of existing failing septic systems is also being addressed in this proposal.

Again, funding is only being sought for the feedlot relocations/livestock waste management systems, litter storage sheds and septic upgrades. It is anticipated that the buffers, fencing and alternative watering will all be covered under CREP or other buffer programs.

Informational packets and technical assistance on the State Revolving Loan Program will be made available to all applicants.

The lead agency for this project will be the West Virginia Conservation Agency. The Watershed Program Specialist located in the Moorefield Field Office will be the project coordinator for this Incremental Project.

## **Goals and Objectives**

Through funding of this Incremental 319 proposal, it is anticipated that significant fecal coliform reductions can be made to the Mill Creek watershed. This will be achieved by offering cost-share and technical assistance with the implementation of a suite of agricultural BMP's. Landowners will be encouraged to participate in the USDA Conservation Reserve Enhancement Program (CREP) and other identified riparian buffer establishment programs. These could potentially include the US Fish & Wildlife Partners for Wildlife and Trout Unlimited's Potomac Headwaters Home Rivers Initiative.

Through these programs, landowners will establish riparian buffers adjacent to the stream. Through CREP, monetary incentives are offered to landowners who enter their riparian areas into long term agreements.

Landowners who do not qualify or rank out for current Farm Bill funding will be identified and ranked through the local USDA NRCS Service Center and outreach articles. Opportunities for implementation of feedlot relocations, runoff handling, fencing, alternative watering and litter sheds will be pursued by the project coordinator and by working with the technical assistance staff within NRCS.

Homeowners will be identified through the Grant and Pendleton County Sanitarian's Office for opportunities to make improvements on failing septic systems within close proximity to the stream. These will be ranked in order of concern by the Sanitarian.

Working in cooperation with the WV Conservation Agency, USDA NRCS and the Potomac Valley Conservation District, and the WV Department of Health and Human Resources, BMP's will be installed to meet the standards of USDA, the Mill Creek Working Group and the West Virginia Conservation Agency and the County Health Departments.

A goal has been set to install Agricultural BMP's on eight farms and/or properties. This goal will allow for reduction of fecal coliform throughout the entire Mill Creek Watershed by 17.39% 2.642E+14 over the first two years and 7.9% by year four and 7.9% by year six if the proposed schedule of implementation is followed.

A goal of two workshops and or trainings will be held each year of the two year project, educating at least 65 stakeholders.

## **Project Description**

**CREP enrollment/participation** (*other buffer programs including US Fish & Wildlife Partners for Wildlife and Trout Unlimited's Potomac Headwaters Home Rivers Initiative*)

This is the establishment of riparian buffers adjacent to streams. CREP offers a yearly stipend to landowners interested in establishing a riparian buffer adjacent to the water system. These programs allow for a 10 year minimum contract. It also pays for fencing and alternative watering for livestock.

- **Riparian Buffer Establishment**

Woody riparian buffers are trees planted along stream banks, with plantings a minimum of 35 feet in width. Attempts to establish this type of buffer would include 6 foot translucent tree tubes, or possibly an experimental arrangement of single strand electric fencing, to protect young trees from deer browsing. Vegetative buffers are linear strips of grass or other non-woody vegetation maintained along stream banks, again with a 35 foot minimum width. These would be maintained by mechanical methods or flash grazing according to NRCS standards.

- **Alternative watering sources**

- *With fencing:* To eliminate instances of cattle coming into direct contact with a stream, a narrow strip of land along the stream bank can be fenced off. Alternative watering sources, such as troughs or tanks, must then be provided for the cattle. Cattle are thus prevented from physically disturbing the river banks, thus decreasing sediment entering the river, and decreasing bank erosion. They are also prevented from defecating in or close to the river.
- *Without fencing:* Instances of cattle in the river can be reduced by providing alternative sources of water and shade that are removed from the river. The benefits mentioned above (with fencing) would still apply to a lesser degree.
- *Alternative watering sources with fencing and rotational grazing:* This practice combines riverbank fencing and alternative watering with cross fencing systems to create paddocks to enable flash rotational grazing (according to NRCS standards) of small areas in sequence. Flash grazing in riparian areas can be allowed under tightly controlled circumstances, allowing agronomic benefit to the farmer while also maintaining much of the value of that riparian land as a buffer. It is beneficial in restricting access of animals from the river, but increases animal stocking rate and manure concentration per acre, which may adversely impact the quality of surface water runoff

### **Re-location of Feedlots**

This involves moving the feeding area away from the stream so that the waste deposited on the fields is further removed from the river.

### **Barnyard Runoff Control**

A facility for collecting and disposing of runoff water from roofs. Such facilities include but are not limited to erosion resistant channels or subsurface drains with rock-filled trenches along building foundations below eaves, roof gutters, downspouts, and appurtenances.

### **Animal Waste Management Systems**

Poultry and livestock operators design practices for proper storage, handling, and use of wastes generated from confined animal operations. This includes a means of collecting, scraping, or washing wastes and contaminated runoff from confinement areas into appropriate waste storage structures. For poultry operations, litter sheds are typically used. For livestock, moving feedlots away from the streamside is an effective strategy.

### **Wetland Restoration**

Re-establish the natural hydraulic condition in a field that existed prior to the installation of subsurface or surface drainage. Any wetland classification including forested, scrub-shrub or emergent marsh.

### **Septic upgrade**

Identification of non-complying septic systems by the County Sanitarian located adjacent or within close proximity of the stream. Installation of new or upgrades for existing home systems.

### **Partner Involvement**

**The West Virginia Conservation Agency (WVCA):** will be the state agency overseeing incremental grant implementation. This includes providing technical assistance, outreach, reporting, and administration.

**The Potomac Valley Conservation District (PVCD):** will administer funding for the implementation of this Incremental Project.

**The West Virginia Department of Agriculture (WVDA):** will assist the WVCA with implementation and reporting as well as coordinate the water quality monitoring of Mill Creek.

**USDA Natural Resources Conservation Service (NRCS)** will provide technical assistance for BMP implementation.

**West Virginia Department of Environmental Protection (WVDEP):** will administer grant funding, collection of milestones, assist with education and outreach, and monitoring as related to their watershed framework program and provide information on the State Revolving Loan Program.

**West Virginia Department of Health and Human Services (WVDHHR)** will assist in identifying failing septic systems within the project area and assisting project coordinator with ranking these based upon potential to contaminate the stream. County Sanitarians will assist with inspecting new systems.

**Cacapon Institute (CI):** will assist in education and outreach.

**WVU Extension Service** will assist in education and outreach activities to promote implementation.

### **Maintenance of Effort**

To ensure the effectiveness and sustainability of practices installed through this project, the Potomac Valley Conservation District will provide technical assistance to district cooperators who choose to participate in this project. The contracts will be six year contracts, ensuring BMP's will be maintained through the life of the contract. CREP has a minimum ten year contract; this extended contract will ensure buffers are maintained for a minimum of ten years. BMP's installed with 319 Incremental dollars will be inspected by the Program Manager bi-annually for six years after implementation. With West Virginia's participation in the Chesapeake Bay Tributary Strategy process, support will be provided for BMP's following the completion of the 319 grant and funding allows.

### **Monitoring**

As BMP's are installed in the watershed, The West Virginia Department of Agriculture will begin monitoring North and South Mill Creeks again to study the bacteria and nutrient reductions that are made as a result of the installation. This sampling effort will commence January 2008 and will involve collecting samples once per month at all ten designated sites used in the original sampling program from 1998 to 2005. This will continue through the life of the project. WVDA will adhere to an EPA approved QAPP (attached). These samples will be analyzed for the following parameters:

- pH
- Conductivity
- Temperature
- Dissolved Oxygen (May through September)
- Fecal Coliform
- Nitrate
- Nitrite
- Ammonia
- Total Phosphorous
- Ortho Phosphorous
- Total Suspended Solids
- Turbidity

## **Milestone Schedule**

Submit Watershed Based Plan for Mill Creek of the South Branch of the Potomac River to WVDEP and USEPA	12/2007
Submit funding proposal to USEPA for Mill Creek 319 Incremental Water Quality Improvement Project	6/2008
Public education of projects and funding available	7/2009
Accept & rank applications for agricultural NPS management measures and failing septics	6/2009-2/2011
Provide 2 educational opportunities on NPS Management issues	12/2009
Implementation of agricultural NPS management Measures	6/2010
Implementation of 1 septic upgrades on properties with identified failing systems	6/2010
NPS management measures will reduce fecal Coliform levels by 8.7% for the entire watershed	6/2010
Provide 2 educational opportunities on NPS Management issues	6/2011
Implementation of agricultural NPS management Measures	6/2011
Implementation of 1 septic upgrade on properties with identified failing systems	6/2011
NPS management measures will reduce fecal Coliform levels by 8.7% for the entire watershed	7/2011

**Budget**

<b>Units</b>	<b>BMP Practice</b>	<b>Total 319 Request</b>	<b>State Match</b>	<b>Local Match</b>
133 acres	riparian buffer establishment	\$0.00	\$0.00	\$0.00
75 acres	fencing	\$0.00	\$0.00	\$0.00
2 systems	alternative watering	\$0.00	\$0.00	\$0.00
2 systems	Livestock Animal Waste Storage System @ avg. cost of \$90,000	\$108,000.00	\$27,000.00	\$45,000.00
1 system	Poultry Manure Storage System @ avg. cost of \$90,000	\$54,000.00	\$13,500.00	\$22,500.00
2 systems	Failing septic upgrades @ avg cost of \$7,500	\$9,000.00	\$2,250.00	\$3,750.00
	Travel costs associated with implementation- Estimated \$5,000	\$3,000.00	\$0.00	\$0.00
	WVDA Monitoring	\$0.00	\$9,092.64	\$0.00
	<b>TOTAL</b>	<b>\$174,000.00</b>	<b>\$51,842.64</b>	<b>\$71,250.00</b>

Round \$ amounts up .