

Nonpoint Source Program's 2012 Annual Report

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**A message from the Director of
West Virginia Department of Environmental Protection's
Division of Water and Waste Management**

West Virginia's Nonpoint Source Program started in 1989 and over the past 23 years, the program has grown substantially, from a limited staff and resources, to more integrated outreach and education efforts and projects. It is exciting to have been a part of the development of the watershed movement and to witness the hundreds of volunteers who work cooperatively with DEP to protect and restore their rivers and streams.

This report outlines the efforts of numerous federal, state and local agencies, universities, watershed volunteers and private businesses to reduce polluted runoff from agriculture, acid mine drainage, failing septic systems, and eroding streambanks. Nonpoint Program successes in 2012 include reductions in metals and acidity on Sovern Run in the Cheat River. This allowed benthic macro-invertebrates (bugs) to rebound in 3.3 of the 4.7 miles of impaired stream. The Nonpoint Program also helped fully restore Indian Run in Sleepy Creek by removing fecal coliform bacteria through stormwater management practices and the elimination of failing septic systems.

As we move into 2013, it is my hope that the Nonpoint Source Program will continue to grow by engaging new partners and more people to help improve our watersheds. West Virginia is a beautiful state, blessed with an abundance of water. It is our collective job to do what we can to reduce polluted runoff from our homes, businesses, and communities. It is by expanding our partnerships that we can more fully succeed, and I look forward to seeing that happen.

Scott G. Mandirola
Director

Promoting a healthy environment.

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Report Prepared
By

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Statement of Policy Regarding the Equal Opportunity to use and Participate in Programs

It is the policy of the WV Department of Environmental Protection to provide its facilities, services and programs to all persons without regard to sex, race, color, age, religion, national origin and handicap. Proper licenses, registration and compliance with official rules and regulations are the only sources of restrictions for facility use or program participation. The WV Department of Environmental Protection is an equal opportunity employer.

West Virginia’s Nonpoint Source Program is funded by Clean Water Action Section 319 Grants, administered by the U.S. Environmental Protection Agency.

INTRODUCTION



Nonpoint Source Program staff

This report provides an overview of West Virginia's Nonpoint Source (NPS) Program's activities over the past year. It includes information on base and incremental program activities. The NPS Program relies on its many partners and staff to implement \$319 funded projects. The NPS Program works closely with US Environmental Protection Agency (EPA) Region III Office to make sure that the funds are administered appropriately and reporting is done in a timely manner.

The NPS Program not only uses 319 funds, but also provides technical assistance on nonpoint source pollution projects funded through a variety of state and federal funding sources. In some cases these funds are leveraged to pay a portion (meet the match requirements) of the grant in other cases these funds pay for the entire project.

STATE FUNDS

The NPS Program partners with WV Department of Environmental Protection's (DEP) Division of Mining and Reclamations Stream Restoration Fund (SRF) to address mining related impacts. SRF has funded 100% of the project in some cases while in other cases it is match for 319 funded projects.

The NPS Program often works closely with the Onsite Loan Program (OSLP), a part of the State Revolving Fund (SRF) Program. OSLP is administered through DEP and the WV Housing Development Fund (HDF). Its goal is to address water quality issues related to sewage. 319 often funds voucher program's that off-set the costs of loans and in certain cases pay a portion of the costs of initial investigations (e.g. perc tests, surveys, newspaper articles etc.).

FEDERAL FUNDS

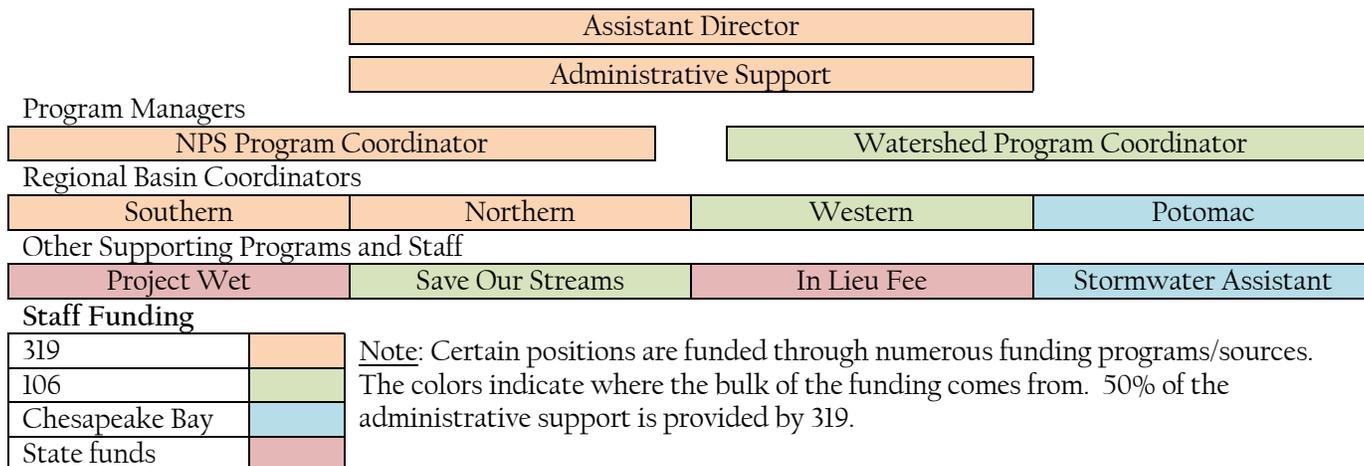
The NPS Program takes advantage of the many programs offered to farmers through the Farm Bill. Farm Bill Programs are administered through the Natural Resource Conservation Service (NRCS). The NPS Program relies on the WV Conservation Agency's (WVCA) Conservation Specialists (CS) to find the best ways to use these programs. CS are experts in the agricultural arena and have had great successes in working with local landowners to implement NPS projects. A good example of this cooperation is the recent National effort through the NRCS and EPA, called the National Water Quality Initiative (NWQI). WVCA CS played a key role in locating the appropriate watersheds, facilitating communication, and offering technical assistance. No NPS funds were spent on NWQI but we do provide monitoring support to NRCS.

The Office of Surface Mines (OSM), Watershed Cooperative Agreement Program (WCAP) is another source of funds used often to match 319 funded projects. WCAP monies are specifically designed to help restore streams impacted by abandoned mines, those prior to the Surface Mine Reclamation Control Act (SMRCA). This source

has thus far been a consistent match to most 319 mining projects. Additionally, OSM's staff is active in the oversight of project design and has willingly participated in many other NPS outreach efforts for many years.

For the first time in many years the NPS Program is fully staffed. We welcome many new faces and look forward to years of successful project and program implementation. The NPS Program consists of an Assistant Director, Program Coordinators Basin Coordinators, Administrative Support and multiple statewide programs. More detailed information about staff and program activities are provided in the Base Grant section of this report.

FIGURE I – Nonpoint Source Program's Organization



EXECUTIVE SUMMARY

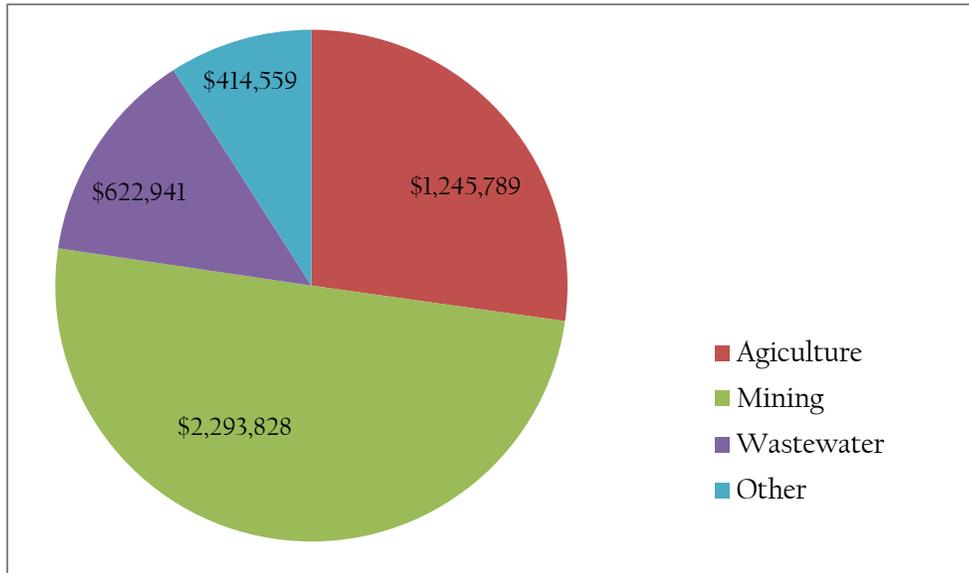
The NPS Program continues to expand its efforts to restore and protect our state's streams impacted or threatened by nonpoint source pollution. Since these impacts are not regulated there are always challenges when implementing these types of programs. The 2008 projects were closed-out, a few were provided with extensions, leaving a total of 67 projects that the NPS Program provided oversight on; of the 67, 57 used 319 funds (Appendix 1). 35% of 319 projects were additional grant opportunity (AGOs) projects. These funds are budgeted annually but can also include left-over money from staffing, and other program funds that were not spent. AGOs offer the NPS Program the opportunity to fund a wide variety of efforts related to the mission of the program, they support incremental efforts, build capacity, and provide opportunities for new partnerships for future incremental projects. Table 1 provides an overview of the AGOs funded during this period. The list below does not reflect the number of grants because many groups were funded multiple years for on-going projects.

TABLE I – 2009-2012 AGO project funds

<p>Monitoring support</p> <ul style="list-style-type: none"> • Friends of Deckers Creek (2009-2012) • Friends of the Cheat (2009-2012) • Piney Creek (2011) <p>Stormwater projects</p> <ul style="list-style-type: none"> • Friends of the Lower Greenbrier (2012) • WV Conservation Agency (2011) • Shepherdstown Daycare Center (2010) <p>Restoration projects</p> <ul style="list-style-type: none"> • Warm Springs Run Watershed Assoc. (2009) • Guardians of the West Fork (2009) 	<p>Outreach</p> <ul style="list-style-type: none"> • The Mountain Institute (2009-2011) • Potomac Valley Audubon (2009) • Indian Creek Watershed Assoc. (2009) • Upper Guyandotte Watershed Assoc. (2010) • Canaan Valley Institute (2011) <p>Planning/reports</p> <ul style="list-style-type: none"> • Elk Headwaters Watershed Assoc. (2011) • Friends of the Lower Greenbrier (2011)
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The focus of the NPS Program has always been to reduce NPS pollutants that are targeted in the TMDL and 303(d) process. The most prevalent NPS pollutants are still metals and acidity from past mining activities; however wastewater and sediment projects are increasing. 50% of the funds spent are related to mining, 27% to agriculture, 14% to wastewater and 9% to other. This other category includes mostly natural stream design (NSD) and stormwater projects.

FIGURE 2 – Categories of NPS pollutants



Of the 57 319 funded projects, about 45% have been completed. The most common categories are shown in Figure 2. The categories were determined by the 319 funding provided to each. It should be noted that many of the projects have multiple pollutant reduction goals and objectives but the chart provides a good base for comparison.

Significant progress was made in the reduction of

pollutants that are tracked on a national level; these are sediment and nutrients (nitrogen and phosphorous). Most of the sources of these pollutants are from agricultural and stormwater sources. West Virginia does not have large scale agricultural operations, and as a whole is still largely un-developed. Many of our urban areas are small when compared to the larger urban areas within EPA Region III.

However, efforts initiated by the Chesapeake Bay Program have provided us new opportunities to explore projects that reduce sediment and nutrients. In other parts of the state, the NPS Program and WVCA explored nutrient reduction opportunities from projects that require fecal coliform reductions from agricultural sources. Table 2 provides a summary of the load reductions either achieved or expected over the past year.

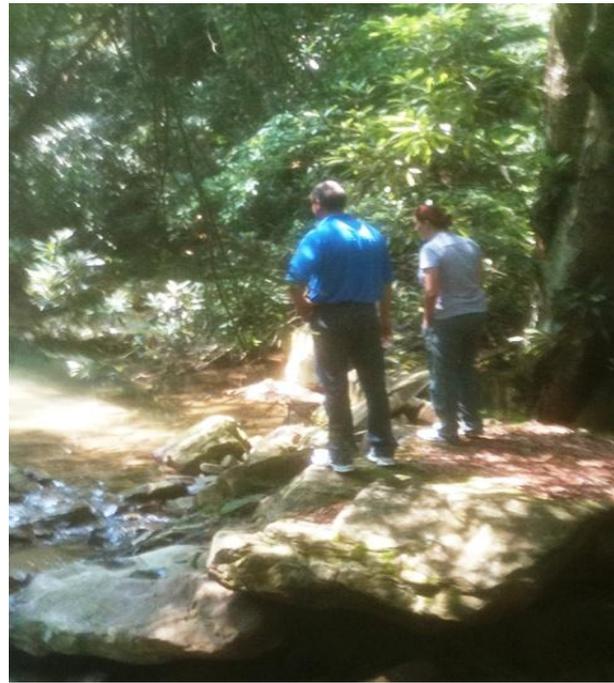
TABLE 2 – Load reductions achieved or expected from NPS projects

Mining		Agriculture/Wastewater/NSD	
Acidity	445,641 lbs/year	Nitrogen	137,584 lbs/year
Aluminum	31,600 lbs/year	Phosphorous	75,315 lbs/year
Iron	121,863 lbs/year	Total nutrients	212,899 lbs/year
Manganese	10,683 lbs/year	Sediment	641 tons/year
Total metals	164,146 lbs/year	Fecal coliform	3.5E+15 cfu's

The ultimate goals of any restoration efforts are to restore the stream so that all water quality conditions are met and maintained and the uses are attained. Depending on the type of pollutant and impairment this task can be extremely difficult especially for nonpoint sources of pollution. The US EPA has developed a criterion for Success Stories that show improvements and in some cases complete restoration. These stories are displayed on an EPA website, which is updated annually. This site provides a picture of the benefits of NPS funding and show the results of these efforts. Success stories can be accessed at: <http://water.epa.gov/polwaste/nps/success319/>.

States are required to submit at least one success story annually to their EPA Region. In 2012 the West Virginia NPS Program had several options due to significant progress being made in the Potomac Direct Drains, Cheat, and Tygart Valley watersheds. We chose to submit Sovern Run, a small trout stream in the Lower Cheat River, a stream significantly impacted by past mining. Although not completely healed, the stream is showing remarkable recovery. Not only is water chemistry improving, fish have been observed in reaches where they have not appeared for many years and local residents and others are taking advantage of its recovery by making it a hiking and camping destination. More information about the Sovern Run recovery is provided later in this report.

In addition to Sovern Run, Indian Creek a tributary of Sleepy Creek in the Potomac has been de-listed from the 303(d) list, showing no evidence of fecal coliform impairments. The implementation of the 2008 Sleepy Creek incremental project was primarily responsible for this success, and definitely a near future success story. Passive acid mine drainage (AMD) projects on Smooth Rock Lick in the Tygart Valley watershed have also shown a great deal of promise. The discharges from all the projects are now alkaline and the stream is responding positively to the improvements.



Analysts from the Government Accountability Office (GAO) watch fish in the lower sections of Sovern Run

It is important to understand that NPS restoration efforts are a long term commitment. In some cases these streams have been impaired for decades and restoration efforts must continue and be consistent if there is hope for the future. In addition to 319 funds, the State should examine all possibilities so that additional effort can be made towards improving and protecting our water quality for future generations. The progress since 1989 should not be slowed simply because a reduction or loss of federal funding.

BASE GRANT ACTIVITIES

DEP's DWWWM manages and coordinates the statewide NPS Program as the lead agency and through the cooperating agencies. Administration and coordination involves a concentrated effort on the part of both the lead agency and cooperating management agencies staff. The activities of the lead and category agencies are guided by adherence to the stated goals, objectives and schedules included in the NPS Program's Management Plan as well as those described in the annual grant package provided to US EPA.

As a part of the NPS Program's outreach, education and coordination efforts, the NPS Program supports and participates in the Watershed Management Framework, WV Watershed Network, Stream Partners Program, and the Chesapeake Bay Program. The NPS Program oversees all 319 incremental, AGO and numerous other NPS projects. Through these efforts the NPS Program maintains contact, coordination and influence with the general public and the growing network of citizen watershed groups. A summary of the 2012 grant application is provided in Appendix 2. From 2008 – 2012 the total base grant was \$4,488,559, which is about a 50/50 split compared to incremental funds through the same period. This is an average of \$897,712 each year. Table 3 provides the base funding break-down.

TABLE 3 – Base funding 2008-2012

Fiscal year	Award amount	% Increase/Decrease from previous year
2008	\$1,024,400	8.6% increase compared to 2007
2009	\$1,024,400	None
2010	\$1,024,400	None
2011	\$759,743	25.8% decrease
2012	\$655,616	15.9% decrease (56.3% from 2010)
Total	\$4,488,559	Average \$897,712

NPS GOALS AND OBJECTIVES FOR 2012

The NPS Program’s primary goals focus on the planning, development and implementation of comprehensive watershed restoration projects to remove streams from the state’s 303(d) list. The difficulty in coordinating a stakeholder driven process to implement voluntary compliance projects aimed at achieving a mandatory water quality goal is a special challenge. The development of realistic Watershed Based Plans (WBPs), effective project proposals and fully implemented projects is time consuming and requires much of the resources of all NPS partners as well as other stakeholders.

NPS Program goals for fiscal year 2012

<u>Goals</u>	<u>Status</u>
1. Develop a minimum of three new WBPs and continue the development of our Watershed Protection Plans (WPPs); receive approval to implement existing plans.	Complete
2. Provide guidance in the development of future incremental project proposals.	Complete
3. Develop one success story.	Complete
4. Solicit the Watershed Assessment Branch (WAB) to remove portions of Sovereign Run, Lamberts Run, Indian Run and Windmill Gap from the 303(d) list and follow-up with additional monitoring when needed	Complete (Windmill Gap was de-listed in 2011, Indian Run in 2012)
5. Work with the WV Watershed Research Institute (WVWRI) to develop long-term operation and maintenance guidelines for AMD incremental projects, which may be a requirement for future mining projects; this may become a goal for the new Northern Basin Coordinator.	On-going
6. Begin to revise the NPS Program’s Management Plan (this goal will likely continue through several grant periods).	On-going
7. Work closely with DEP’s mining programs to better leverage funding opportunities from mitigation (ILF), stream restoration funds (SRF) etc.	On-going
8. Update GRTS as needed; begin the development of an internal tracking methods/database and revise as needed.	Complete
9. Improve the functionality of the NPS Program’s website so that partners have the tools and information needed to submit project proposals, write WBPs and submit appropriate content semi-annual reports in a timely manner.	On-going

WV CONSERVATION AGENCY

The West Virginia Conservation Agency (WVCA) remains the primary entity responsible for the implementation of the West Virginia Agriculture and Construction components of DEP’s NPS Program and for coordinating and implementing water quality improvement projects. Conservation Specialists (CS) serve as direct service providers or help coordinate assistance from other sources to watershed organizations and landowners. WVCA supports statewide efforts to address nonpoint pollution with education and outreach, coordination and implementation of projects addressing runoff, erosion and sediment control, stormwater

management, nutrient and pest management, stream cleanup, riparian demonstrations, streambank stabilization, pre and post project monitoring, watershed assessments, agriculture BMP selection and installation, the availability and types of conservation programs, financial assistance, and water quality improvements. In addition to the statewide support WVCA will focus efforts in the following project areas:

- Through the Chesapeake Bay Program., several watersheds have been identified as priorities based upon a decision making matrix with public input as well as real water quality data. (Sleepy Creek, Mill Creek of Opequon, Mill Creek of the South Branch, Lost River and Anderson Run) WVCA participates with project teams to develop nutrient and sediment reduction plans to meet Chesapeake Bay reduction goals.
- In addition to the Bay region, WVCA has also targeted subwatershed in the Greenbrier (Second Creek, which includes Kitchen Creek and Back Creek, and Muddy Creek), James River (Potts Creek and Sweet Springs Creek), and the Lower Ohio (Fourpole Creek).

OUTREACH AND EDUCATION

WVCA staff assists local schools and conservation districts statewide with the Envirothon, Land Judging contest, outdoor classrooms, Enviroscape demonstrations, and other conservation programs. WVCA staff also participates in the WV State Conservation Camp, a natural resource camp for high school aged children, instructing the watershed management class. Educating the public on non-point source pollution and best management practices will increase awareness and gain support of the non-point source program in West Virginia. The education of urban residents about nutrient management, stormwater runoff and other issues that impact water quality and quantity, continue to be addressed by the conservation specialists throughout the state.

Below are examples from many outreach and education activities provided by WVCA.



Water quality workshop to prepare teams for the Envirothon



Romney Elementary tree planting lessons



Stormwater display showing a half-shed and rain barrel combination



Storm drain stenciling contest in the Fourpole Creek watershed

CONSTRUCTION EROSION AND SEDIMENT CONTROLS

WVCA provides project support, situation evaluations and lend technical expertise to local government entities, landowners and other organizations with project implementation and/or solutions to problems related to stormwater management. These problems could be issues of quality and/or quantity that may be addressed with the appropriate BMPs. The WV Contractor's Expo is held annually and the CC will attend to present and discuss NPS issues with representatives of the construction industry. WVCA constantly seeks out new technology and develop demonstration projects using it with a goal of educating the public about the ever changing world of erosion and sediment control.

MARCELLUS SHALE



In 2012, WVCA and WVU Extension sponsored a tour of Marcellus well-pad sites in the Monongahela Conservation District.

The emerging issue of the development of the Marcellus Shale natural gas plays has led to concerns of stream sedimentation from the well pad sites as well as the construction of pipelines to transport the gas and roads to service the wells. Landowners are expressing concerns in regard to how and

what to do to minimize impacts while development activity is occurring as well as to the best methods to stabilize the sites when activities have culminated. Many landowners are leasing or have leased their land for development. These landowners have little information or expertise in the field of erosion and sediment control or site reclamation and are therefore looking for advice to best protect and/or restore their land. The companies constructing well pad sites and pipelines are often from out of state and although they have vast experience preparing well sites and installing pipelines their experience dealing with terrain, geology, soils and watershed drainage systems like those here are non-existent. These companies need an information source to help them deal with the unique problems land disturbance activities in West Virginia can present.

West Virginia University Extension is currently providing general educational seminars on the natural gas industry, leasing, land rights and environmental concerns but do not have the ability to provide specialized advice on the many BMPs options available to prevent water quality degradation resulting from land disturbance activities. However, WVCA is also in the position to serve as a provider of information and assistance in selection of BMPs available as well provide technical advice with water and land management schemes for landowners, agencies and development companies in order to protect the natural resources of the state while helping provide for the energy needs of our country.

AGRICULTURE

By developing watershed based plans and utilizing 319 incremental funds, BMP's are installed in targeted watershed that allow for overall water quality improvements. This fills a gap left open by USDA farm bill programs which are selected by a conservation district wide ranking system. CS assist land managers with understand pesticide labels and integrated pest management to prevent the over use of pesticides and stream contamination.

The Conservation Districts also have various programs that the CS will play a critical role in delivering. The state wide Lime Program will benefit from nutrient management planning. Implementation monitoring with the participating cooperators will provide information on program effectiveness and measure land use improvements such as soil erosion reductions and nutrient application effectiveness. CS assistance in helping farmers with management decisions regarding grasslands will make the program more effective in relation to water quality issues as well.

All of these programs are operated with 319 Base, Incremental and State funds for a total of \$333,334. The 319 Program provides \$200,000 of the monies the remainder is state and local match.. Below is a list of the major goals of the grant.

WVCA major program tasks for fiscal year 2012

<u>Tasks</u>	<u>Status</u>
1. Ensure that the WVCA 319 Staff is coordinated and focused on statewide coordination for the NPS program for agriculture and construction.	Complete
2. Develop, implement, and assist with 319 Water Quality Projects.	On-going
3. Provide educational and technical assistance on sediment and erosion control from land disturbance activities.	On-going
4. Provide information and technical assistance to agriculture operators on the benefits of alternative water, stabilized stream crossings, riparian buffers, manure and litter management, nutrient management, and other best management practices.	On-going
5. Provide support the outreach efforts of WV Watershed Resource Center and the WV Watershed Network.	Complete

NPS PROGRAM BASIN COORDINATORS

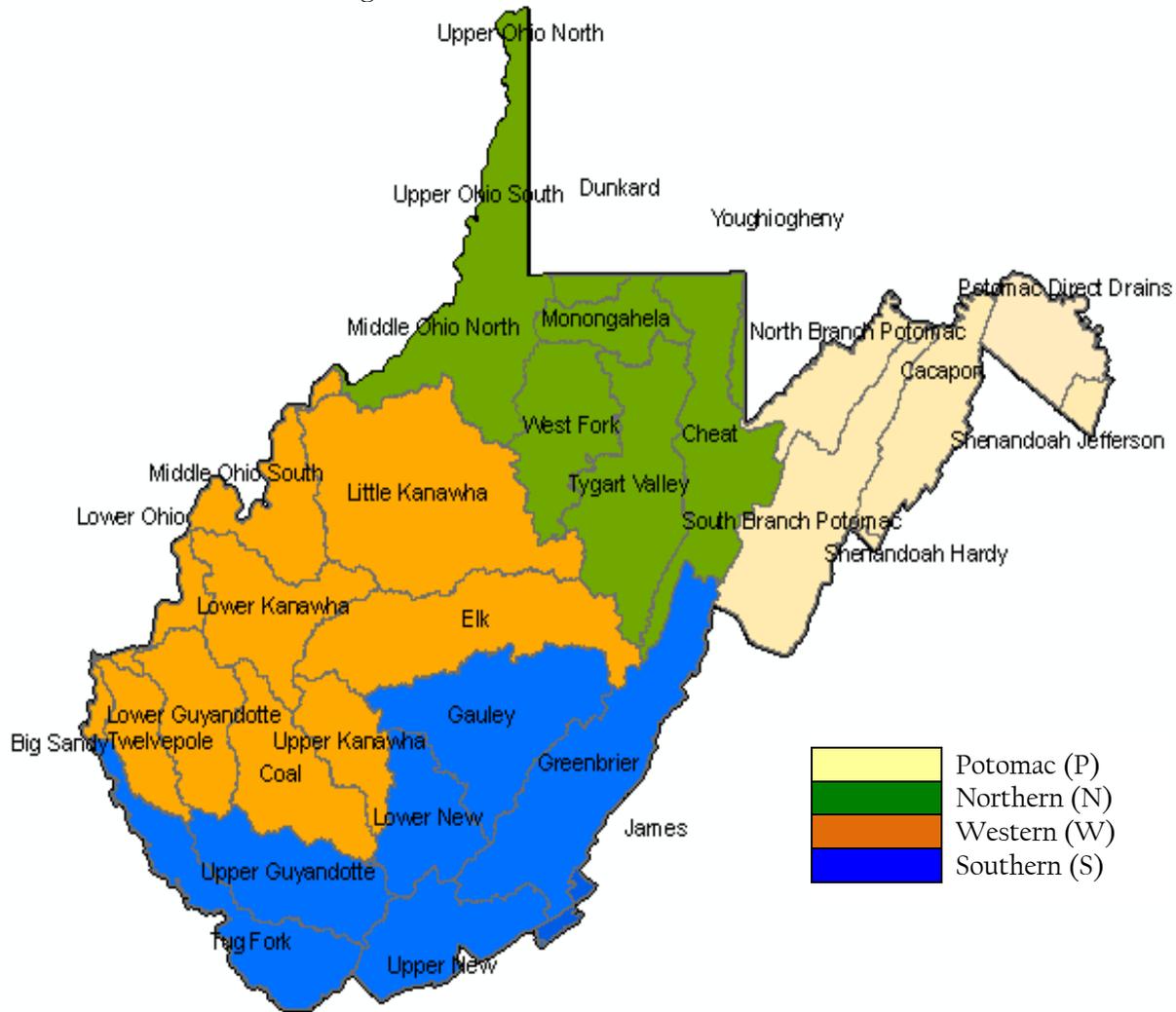
There are not words to describe the commitment and dedication of all our volunteer partners, landowners, agency representatives, colleges and universities, local communities and other non-governmental agencies (NGOs). Without this varied group of stakeholders successful NPS projects are not possible. However, the ultimate success of the stakeholder groups relies on the persistence, patience and expertise of the Regional Basin Coordinators (BCs). It is this group of diverse individuals that motivate, help plan meetings, organize work and constantly keep projects on tasks. Individually they bring different skill sets but as a whole they work as a cohesive group promoting the NPS Program.

Provided here is a summary of their activities over the past year. Note: We have several new BCs that started in 2012 and now have a representative for each region. See the map in FIGURE 3.

POTOMAC BASIN

The PBC has been recently re-classified as an analyst due to the ever growing responsibilities of the Chesapeake Bay Program, this person not only promotes the NPS Program in the Potomac Region, she also has responsibilities throughout the Mid-Atlantic. There are both point source and nonpoint source issues with implementing the WV Watershed Implementation Plan (WIP) for the Bay but most of the work ties closely with NPS. She has gained additional experience over time and now adds stormwater expertise to help local MS4s and others deal with stormwater runoff. She is assisted by our recently hired Stormwater Assistance Specialist (SWS) who provides technical and compliance assistance to both permitted and non-permitted stormwater situations. The SWS also tracks and verifies Best Management Practices (BMPs) for the Bay Program.

FIGURE 3 – Basin Coordinator Regions



Below are some of the PCB's accomplishments over the past year:

- Serve as the representative for the Chesapeake Bay Program and participate in multi-state meetings and subcommittees to achieve the requirements of the Chesapeake Bay Program agreement.
- Work closely with the Department of Agriculture, the Conservation Agency and other stakeholders to implement and publicize the phase II WIP.
 1. Facilitate and record notes for Implementation Committee Meetings
 2. Coordinate public information among participating agencies, local governments, Chesapeake Bay Program and DEP's Public Information Office
 3. Write updates for website
 4. Give presentations to stakeholders
- Promote development of local subcommittees and project teams involving stakeholder groups, track their activities, and generally encourage implementation of watershed improvement projects.
- 319 Funding - updates
 1. Opequon Creek Project Team
 2. Tuscarora Creek
 3. Mill Creek
 4. Elks Run
 5. Back Creek protection plan

- CBRAP Funding – updates
 1. Warm Springs Run
 2. Morgan County Ordinance Review
 3. Jefferson County Ordinance Review
- Support other stakeholder funding proposals (letters of support, technical support).
- Stream Partners grantees
- Oversee the collection, compilation and quality control of data required for the Bay Program from West Virginia.
 1. Collect & ENTER electronically WV's septic BMPs – May 2013
 2. Use BayTAS and Scenario Builder reports to verify all WV nonpoint BMP data is credited properly
 3. Communicate (through periodic meetings/electronic training) agriculture agency staff & SW permitting people on BMP collection and submittal

NORTHERN BASIN



Sandy Run AMD treatment pond

The NBC comes to us from the Friends of Deckers Creek (FODC) where he served as their water quality project manager and Director. He brings a wealth of knowledge and experience due to his previous dealings with AMD projects in the Deckers Creek watershed. He has intimate knowledge of the 319 incremental processes and has worked on the development of WBP's for Deckers Creek, Sandy Creek and was consulted in the development of the WBP for the Lower Cheat River.

Below are some of the NCB's accomplishments over the past year:

- Reviewed AMD BMP projects to make sure location coordinates are correct.
- Started draft of operation and maintenance manual for AMD BMPs.
- Monitored with Blackwater personnel in preparation for AMD and acid rain BMP projects.
- Visited Smooth Rock Lick site to discuss improvements to the project to help it withstand higher flows.
- Provided coordinates to OAMLRL to verify that Herods and Swamp Run projects consisted of pre-law mining features, and is therefore Nonpoint source pollution funding eligible.
- Visited the Pringle Run PASE AMD project.
- Reviewed status of the Friends of the Cheat (FOC) 319 projects.
- Met with Save the Tygart Watershed Association several times. Communicated the process concerning 319 incremental projects, and especially our need for operations and maintenance plans.
- Provided a list of engineering firms qualified by other groups to design AMD BMPs, for their consideration.
- Supplied comments on engineering design to engineer.
- Drafted letter suggesting Army Corps would not want to extend jurisdiction to open limestone channels and downstream ditches on Reed mine project, and shared letter with engineer on project and watershed association.

- Introduced new water remediation project manager to FODC's previous 319 projects and upcoming projects with 319 funding.
- Wrote draft revision of FODC right of entry on Patriot Mining Company to allow for space to put in settling ponds below Reed Mine project.
- Monitored Kanawha Creek watershed with FODC to assess 319 projects effectiveness.
- Reviewed 319 projects with Brady Gutta of WVU's WRI.
- Discussed procurement of engineering and construction services with FODC water remediation project manager in the context of the Valley Point #12 and Sandy Run projects.

WESTERN BASIN

The new WBC comes to us from DEP's Environmental Enforcement (EE) Section. She has little experience in dealing with NPS but has moved forward and has already taken on the writing and revision of the Morris Creek WBP. She has also organized and presented at a variety of outreach events focusing on stormwater and other NPS issues. The state's two largest cities are in the Western Region. Below are some of the WCB's accomplishments over the past year:

- Sampling on Cane Fork.
- Project Management on Cane Fork WBP
- Facilitate/writing/revising Morris Creek's WBP
- Working with the Elk Headwaters Watershed Association to move forward on the 2012 Cup Run NSD proposal.
- Worked with Coal River Group with the Boys and Girls Water Festival.
- Co-organized the Charleston Water Festival.
- Worked with Stream Partner Groups on projects such as monitoring, trout in the classroom, and river cleanups.

SOUTHERN BASIN

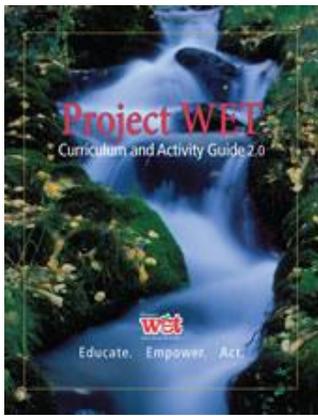
The SBC is also new to the position. She previously held the SBC's Assistant position, which was primarily focused on outreach within the region. She has followed-up with many difficult wastewater projects and is working closely with the local stakeholders to bring these projects to a close. Below are some of the SBC's accomplishments over the past year:

- Surveyed 250 parcels with the county sanitarian in McDowell County to expand the area for the North Fork of Elkhorn OSLP.
- Visited Pigeon Creek stream restoration project in Mingo County.
- Visited Kitchen Creek and Milligan Creek agricultural BMP projects with the WVCA.
- Working with Piney Creek Watershed Association to develop incremental proposals from their recently approved WBP.

SUPPORT PROGRAMS

PROJECT WET

Project Wet is a teacher's education program that promotes the message of water awareness through hands-on workshops and water festivals, and by providing proven credible resource materials that are used in curriculums nationwide.



Throughout 2012, Project Wet, in collaboration with the National Park Service and a wide variety of other water resource organizations, coordinated a total of eight West Virginia Water Festivals. A Water Festival is a one-day water education event for 5th grade students, designed to heighten awareness about our precious water resources and the role that we all play in the health of our watersheds and the health of our planet.

Water festival presentations strive to meet existing curriculum standard objectives for 5th grade, and to provide teachers with up-to-date information about natural resources as well as access to innovative approaches for teaching these concepts in their own classrooms. The festival is a unique opportunity for 5th graders to be introduced to a wide variety of careers and employment opportunities that exist in their own community, and students are encouraged to use the information that they

gain at the festival to make positive choices in their own lives.

TABLE 4 - WV Water Festivals in 2012

Event	Location	Approximate # of students
Hurricane Water Festival	Wave Pool, Hurricane	24 classes (600)
Boys and Girls Club of Charleston	Coal River Group, Tornado	7 classes (200)
Charleston Water Festival	Capitol Complex, Charleston	10 classes (250)
Wyoming Co. Water Festival	RD Bailey Lake, Wyoming County	14 classes (300)
Fayette Co. Water Festival	Fayette County Park, Beckwith	7 classes (200)
Nicholas Co. Water Festival	Carnifex Ferry, Summersville	13 classes (300)
McDowell Co. Water Festival	Linkous Park, Welch	9 classes (225)
Grandview Water Festival	Grandview State Park, Beckley	17 classes (425)
Totals		101 classes (2500)

SAVE OUR STREAMS (SOS)



Students gather around and sort an SOS benthic collection

SOS is our long-term volunteer monitoring program that encourages citizens groups, schools and many others of all ages to become involved in monitoring their own local waterways. The program not only teaches procedures but assists groups in developing long-term monitoring plans and provides a wide variety of technical assistance.

SOS conducted a total of 16 workshops in 2012 in the Shenandoah River, Potomac Direct Drains, South Branch of the Potomac, Middle and Upper Ohio River, Lower and Upper Kanawha River, Lower New River and Coal River.

SOS reached over 3,000 individuals in 2012.

TABLE 5 – SOS Programs outreach efforts in 2012

Technical support	Training/Conferences	Water Festivals/Outdoor classrooms
Benthic analysis for NSD project on Davis Creek	DEP's Watershed Assessment Branch training	Hurricane Water Festival
Benthic collections on Lost River NPS projects	Wetland construction class	Boys and Girls Club Water Festival
AMD monitoring with North fork of Blackwater	Applied Fluvial Geomorphology (Rosgen)	Charleston Water Festival
Arbuckle Creek fecal sampling	ArcGIS	Wyoming County Water Festival
WPP/WBP support (Back Creek and Morris Creek)	Mon River Quest	Nicholas County Water Festival
Canon Envirothon	WV Water Research Institute	Camp Virgil Tate (2)
Watershed Celebration Day	Eastern Panhandle Gathering	DOW Ward Hollow Wetland
Mitigation tours	WV Water Network	Pocahontas/Hampshire County 4H

IN LIEU FEE (ILF) PROGRAM

ILF was initiated by the DEP so as to provide an additional tool for achieving compensatory mitigation for unavoidable impacts to waters of the United States and State waters, including wetlands, streams and associated buffers. Permits that are required for such impacts by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act, under Section 10 of the Rivers and Harbors Act, and by the State of West Virginia under Section 401 of the Clean Water Act, allow for permittee's to participate in the WV ILF program if there are no Mitigation Banks available to provide compensatory mitigation. Permittee's participate by paying a fee to the program, which is determined by inputting qualitative and quantitative data from proposed impacts to streams and wetlands into a Stream and Wetland Valuation Metric (SWVM).

The goal of the ILF program is to achieve no net loss of existing stream and wetland acreage and functions in West Virginia through effective restoration, enhancement, replacement, and preservation of aquatic resources. The program utilizes watershed and landscape based planning to identify and assess potential mitigation opportunities that maximize the ecological benefits of aquatic resources within the same geographic service areas as the impacts. By consolidating the mitigation requirements stemming from multiple impacts, large scale watershed efforts can be focused within priority watersheds. The ILF program works closely with other state and federal agencies, non-governmental organizations, academic institutions, watershed associations, individuals, and others to develop plans and set priorities.



ILF has partnered with Trout Unlimited (TU) on a project in the South Branch that was originally an AGO proposal. The proposal requested \$14,600 for natural stream design (NSD) construction. The site is designed to connect projects upstream and downstream and provide a corridor for the native brook trout population. The landowners upstream and downstream have conservation easement agreements and the landowner in the middle is likely to agree to the same.

The proposal still has to be reviewed and approved by the Interagency Review Team (IRT). The proposal is part of TU's Eastern Brook Trout Joint Venture (EBTJV).

WV DIVISION OF FORESTRY

LONIE (Electronic Notification, Inspection and Enforcement) system is a web based program developed by WVU, the WVDOF and the WVDEP which tracks all logging activity within the state via means of state mandated notifications of timbering operation. Each notification can then be easily tracked for compliance with state law as well as silvicultural BMP's for nonpoint source water quality. It greatly streamlines the process for inspecting and monitoring harvest locations. LONIE also allows for the easy export of polygon data for each operation to a KML file so that each harvest can be incorporated as a data layer for requested non-point source compilations. In short we can provide a data layer with the harvest boundaries and accompanying information as to whether those jobs were in or out of compliance and if out of compliance what the problems were.

The reporting component of the database has also been framed with the reports that are needed on a normal basis for federal, state, or other FOIA stakeholders. The most common reports will be built in to the system and allow for one-click results, while there will also be data dump features that will be necessary for custom inquiries and special projects. Programming activities have started and are currently in the Database Design, Application Scaffolding, and Login/Access Control List phase. This is one of the most time consuming parts of getting the database set up and running. Following the completion of this, programming will commence on the Timber License Holder Dashboard, LSCA Forester Dashboard, Reporting/ Supervisor Dashboard, and then Testing/Delivery.

The total costs of the program is \$43,600, 319 contributed about \$30,000 of the total.

THE NPS INCREMENTAL GRANT

Included here are highlights from active grants within this reporting period. It is not the purpose of this report to provide an overview of each project; this is covered in the semi-annual reporting and GRTS reporting requirements. Appendix 1 provides a list of all grants. This section will highlight several AMD projects in the Cheat and Tygart Valley watersheds, agricultural projects in the Greenbrier watershed, and others that are slightly different than typical 319 projects normally proposed.

This section will also provide an overview of the watershed based plans that were completed or those with significant progress in 2012. Figure 4 provides a project map. This map can also be accessed from the NPS Program's website at: <http://www.dep.wv.gov/WWE/Programs/nonptsource/Pages/NPSProjects.aspx>; it is interactive providing additional information about the project sites.

ACID MINE DRAINAGE (AMD) PROJECT HIGHLIGHTS

SMOOTH ROCK LICK

The Buckhannon River Watershed Association, Inc. (BRWA) recently completed its Smooth Rock Lick project. The project was developed from the Upper Buckhannon River WBP, which was based on the Metals and pH TMDL for the Tygart Valley River Watershed, (US EPA), March 2001. The site is the DLM Mine Complex in Upshur County. Drainage from the Complex flows into several small tributaries of the Buckhannon River. Three of these tributaries are Herods Run, Swamp Run, and Smooth Rock Lick Run.

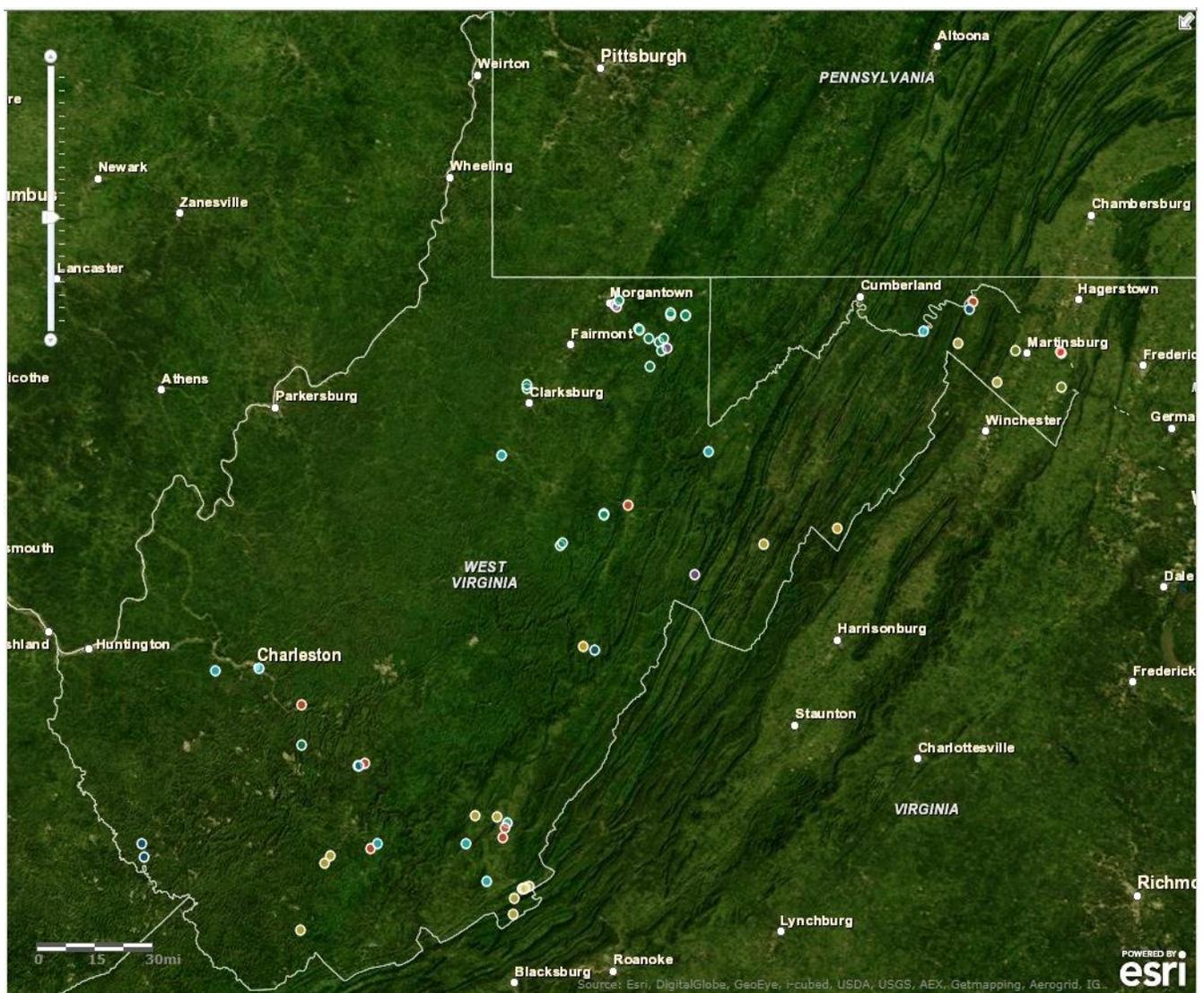
The project areas are located near the head of two unnamed tributaries that drain into the Smooth Rock Lick subwatershed, near Alton, Upshur County, WV. Seepage is from mine spoil and from water collecting along a mine bench. BRWA, DEP's NPS Program and the WVWRI developed a plan to capture the seeps, reduce their metal content, and neutralize their acidity before they enter Smooth Rock Lick Run's headwaters. This project consists of three seepage sites, two of which were combined into one sub-project. The third site was a second sub-project done at the same time. Funding for the design, engineering, and construction was from \$319 and

WCAP. Gathering baseline data specifically for this project began in late 2008, with fund procurement, conceptual design, and final engineering design having been completed by 2010. Following a period for surveying and bidding out the job, construction began in July 2011 and was completed by October 2011. Post-construction monitoring was completed in 2012.

The project uses a passive treatment system. The basic system consists of limestone channels to convey seeps to limestone leach beds where prolonged contact with limestone will “sweeten” the water by raising the pH and causing precipitation of iron and aluminum.

The last phase of the project, occurring now, is gathering water quality data to determine the project’s effectiveness in meeting the intended goal, which is removal of approximately 80% of the contaminants. This constitutes a total removal of approximately 23,000 lbs/year of acidity, 3,200 lbs/year of iron and 900 lbs/year of aluminum.

FIGURE 4 – Nonpoint Source Program project map





Polishing pond in the lower portion of the drainage

Preliminary results are very exciting. After three rounds of sampling WVWRI has determined a total load reduction of 40,403 lbs/year of acidity, 686 lbs/year of iron and 839 lbs/year of aluminum. The drainage is now alkaline producing 2,682 lbs/year of alkalinity (Table 6).

A recent large precipitation event has damaged a portion of the project. WV-WRI has submitted a proposal that will address possible large future flows. 319 funds from 2010 will be used for this new proposal.

TABLE 6 – Reductions from Smooth Rock Lick 1 and 2 projects

Load category	Acid load lbs/year	Iron (Fe) load lbs/year	Aluminum (Al) load lbs/year
Pre-construction	37,752	690	843
Post-construction	(2,651)	4	4
TMDL Targets (entire length)	NA	48,194	37,564

Note: (2,651) is a negative number that represents greater alkalinity

SOVERN RUN

Sovern Run, a tributary to Big Sandy Creek in the Cheat River watershed, flows through the Valley Point community of Preston County, West Virginia. The Sovern Run and lower Cheat River watersheds are severely impaired by AMD pollution from abandoned coal mines. Sovern Run is 4.7 miles in length and joins Big Sandy Creek just upstream of a popular recreation area.

The main source of pollution is from abandoned coal mining and its legacy of coal refuse piles, deep mines, and surface mines discharging AMD. The headwaters of Sovern Run are heavily impacted from several deep mine discharges and acidic seeps throughout the watershed. For the past decade, Friends of the Cheat (FOC) and its many partners have been working to remove Sovern Run from the 303(d) list for mining-related impairments.

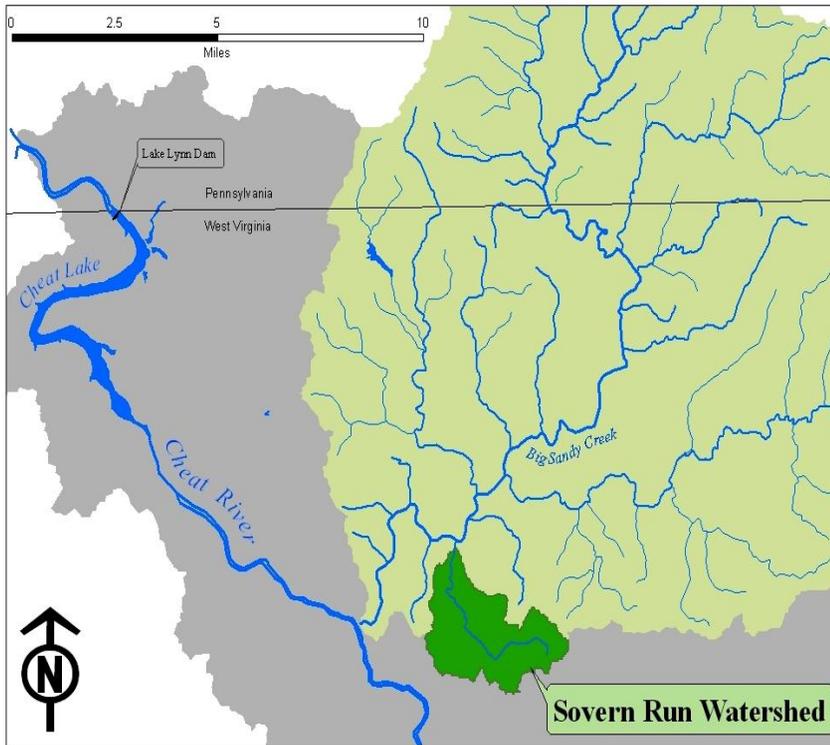
Initial work in the watershed began in 2005 and 2006 when two passive systems were installed. Since then four additional passive treatment systems have been installed. These include:

1. Clark: Is a series of steel slag check dams and open limestone channels. These features add alkalinity and encourage metal oxidation and precipitation, thus increasing pH and reducing acid and metal loadings in the headwaters.
2. Sovern 62: Refurbished in 2010 and includes a steel slag leach bed, open limestone channels, limestone separation dam, and series of settling ponds including a final wetland polishing pond. The steel slag and

limestone dam add alkalinity to neutralize pH while the open limestone channels encourage oxidation and ponds capture precipitating metals.

3. Bishoff Steel Slag: Constructed in 2010 to add excess alkalinity to the main stem of Sovern Run.
4. Sovern Sands: A site that utilizes limestone fines to add excess alkalinity to the main stem of Sovern Run. The dump site was recently moved and improved in 2011-2012 by volunteer landowners.

FIGURE 5 – Map of Lower Cheat showing the Sovern Run and Big Sandy Creek watersheds



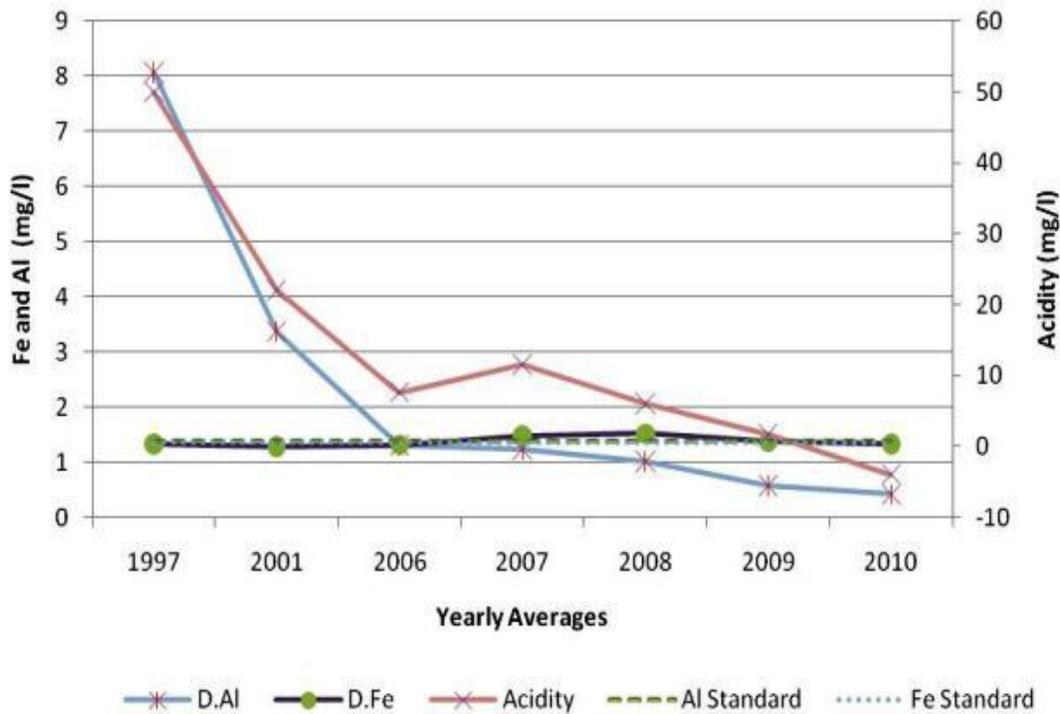
Major funding for these projects came from §319 program. Cost share support has been provided by the OSM's WCAP and private industry funds from mitigation administered by the DEP's Office of Abandoned Mine Land Reclamation (OAMLRL) Program. DEP also provided support through the Division of Mining and Reclamation Stream Restoration Fund (SRF). The Sovern Sands site funding was provided by the NiSource Environmental Challenge Fund. Thus far the total restoration costs are approximately \$2.2 million with §319 accounting for about 40%.

Property owners have noted that aquatic plants have returned to the stream in addition to fish sightings at the mouth of Sovern Run. *"The work of Friends of the Cheat is materializing. Small fish are living this past fall [2010], near the end of the Sovern Run, in the pond by the little waterfall at the wooden bridge. We have had the cabin there for over 30 years with no aquatic life whatsoever. I cannot tell you what a thrill it was to see them for the first time! When the other two long-term landowners nearby, came by this summer, we were all like kids. We found some bread and began throwing it in to see the little guys rise."* - Paul and Betty Connelly

As a result of improved water chemistry, we have seen an increase in numbers of benthic macroinvertebrates, as well as greater diversity of macroinvertebrate species in the main stem of Sovern Run. FOC has recently completed its bi-annual benthic macroinvertebrate sampling to monitor changes in biological integrity. This data is still being analyzed but field observations give reason to be positive. Sovern Run has not yet been delisted but 3.3 miles of the 4.7 impaired miles have been dramatically improved.

Sovern Run was submitted and accepted for an EPA success story (Water body Improved) in 2012. The information published in the story was compiled by FOC, WVU-NMLRC and DEP. FOC provided the initial draft, which was edited and put into the required EPA format by the NPS Program. The full story is available on the NPS Program website (<http://www.dep.wv.gov/nonpoint>).

FIGURE 6 – Water quality data collected on Sovern Run since the late 1990's



The story will be the subject of an upcoming DEP Public Information Office (PIO) news release in March or April, 2013.

AMD BEST MANAGEMENT PRACTICES

AMD has been historically treated using passive technologies and these are still the major types of BMPs installed to treat AMD. Examples include open limestone channels (OLC), limestone leachbeds and ponds, a wide variety of aerobic and anaerobic wetlands, bioreactors, steel slag and land reclamation. Limestone dozers (an active treatment) have been successfully implemented in Deckers Creek by FODC and the Office of Abandoned Mining and Reclamation (OAMLR) operates and maintains several of these dozers in the Three Forks Creek subwatershed, which is a major contributor to the AMD impacts in the Tygart Valley River.

The more active treatments have shown great deal promise for quick restoration success. These systems less expensive to install than most passive treatment systems but they require consistent funding sources for personnel capable of continuous system adjustments and general operation, and to maintain the supply of lime.

Table 7 provides a summary of the BMPs reported in GRTS for mining projects during this reporting period.

TABLE 7 – Acid mine drainage BMPs

BMP Type	Project	Fiscal year	Planned/installed	GRTS#
Land reconstruction	Smooth Rock Lick 1/2	2008	2	5
Wetlands	Upper Muddy Creek	2008	2	7
Limestone leachbed	NF Greens Run	2008	2	8
Open limestone channel			(1) 860 ft.	
Open limestone channel	Pringle Run	2008	1	9
Wetlands	Lamberts Run	2009	3	7
Open limestone channel			3	
Limestone leachbed	Cane Fork	2009	3	8
Open limestone channel			(1) 4,700 ft.	
Wetlands	Reeds mine	2009	1	10
Open limestone channel			2	
Wetlands	Slabcamp	2010	2	5
Open limestone channel			1	
Vertical flow treatment			4	
Wetlands	Jeff Eanes	2010	1	8
Sulfate reducing bioreactor			2	
Wetlands	Summerlee	2010	1	10
Sulfate reducing bioreactor			1	
Land reconstruction			1	
Steel slag treatment	West Run	2010	2	11
Open limestone channel			(1) 1,540 ft.	
Limestone leachbed			1	
Wetlands	Lamberts Run	2011	3	5
Open limestone channel			1	
Open limestone channel	Slabcamp	2011	2	6
Limestone leachbed			2	
Limestone leachbed	Roaring Creek	2012	1	3
Open limestone channel			(1) 700 ft.	
Steel slag treatment			2	

Totals by BMP type

Land reconstruction	3	Open limestone channel	14	Wetlands	13
Sulfate reducing bioreactor	3	Limestone leachbed	9	Steel slag treatment	4

AGRICULTURAL PROJECT HIGHLIGHTS

KITCHEN CREEK



Farms along Kitchen Creek with 319 incremental projects

The Kitchen Creek projects were initially highlighted in the 2010 Annual Report, at which time it was in the beginning phases of development. The Kitchen Creek subwatershed is part of the Second Creek watershed entirely within Monroe County, in the far southeastern corner of West Virginia. The watershed consists of mostly grassland pasture for beef cattle and dairy operations. Very little forested area exists except on the ridge tops. The geology is primarily karst and caves are common not only in this subwatershed but many of the others within the Second Creek drainage. Most of the streams are very cold and highly productive (trout fishing is popular in the public access areas). Kitchen Creek was added to the 303(d) list, impaired for fecal coliform bacteria. Table 7 provides a summary of the Kitchen Creek 319 projects.

TABLE 8 – Kitchen Creek projects

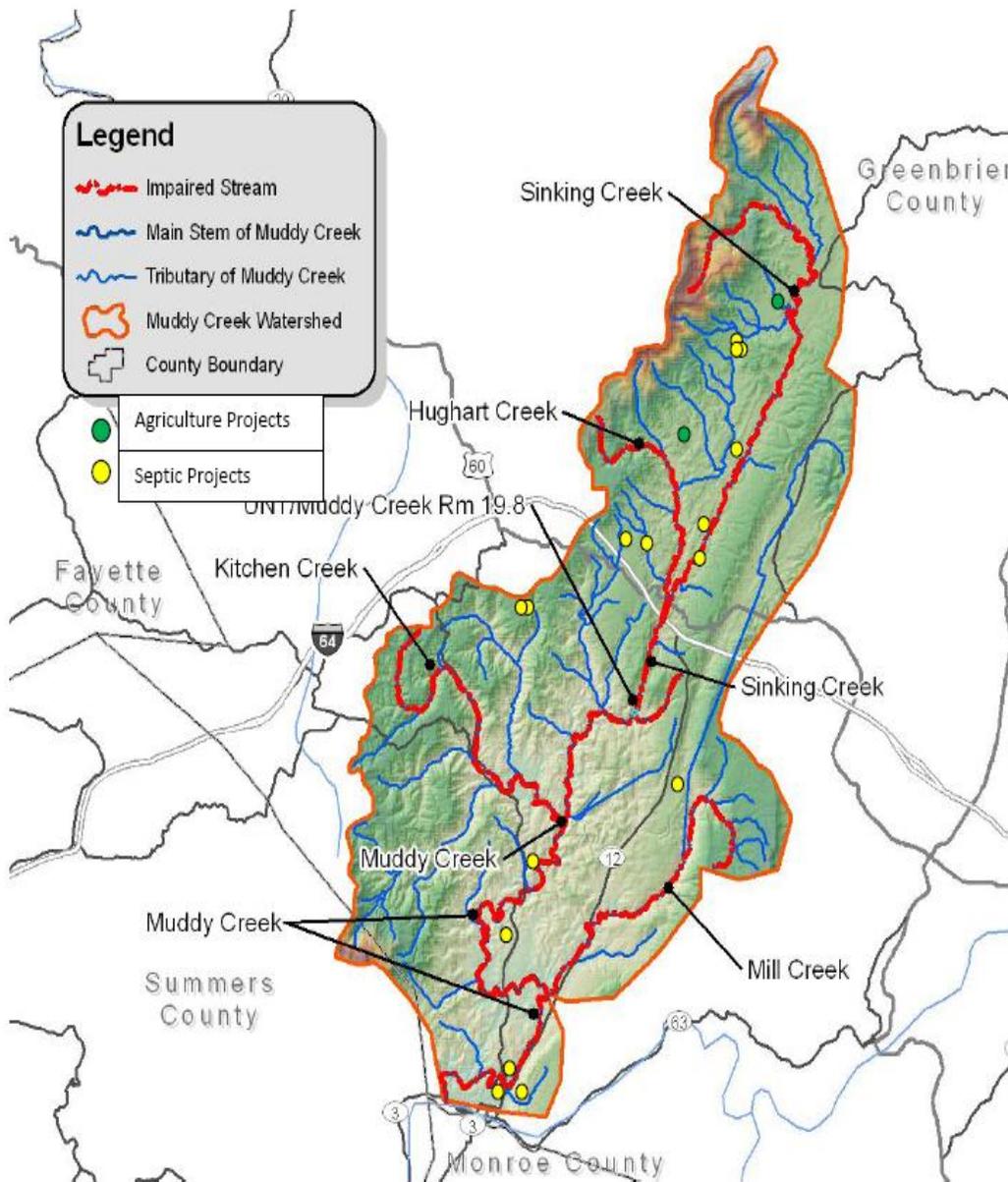
Fiscal year	Project name	Status	319 funding	Load reductions
2009	Kitchen Creek I	Complete	\$108,523	7.50E+13
2011	Kitchen Creek II	Nearly complete	\$49,520	6.01E+13
2012	Kitchen Creek III	On-going	\$98,000	2.73E+13
Totals			\$256,043	1.62E+14

Reductions of fecal coliform have been significant. In-stream monitoring has indicated > 80% drop in counts since the projects have been implemented. In addition to the fecal reduction the projects have reduced the nutrient and sediment loads in the stream. Approximately 547 lbs/year of nitrogen, 1,905 lbs/year of phosphorus and 15 tons/year of sediment have been eliminated.

Landowner cooperation has been overwhelming, a true domino effect. This is due to the local WVCA CS; his knowledge and personality have led to the success along this stream. Approximately 70% of all farms along the stream have NPS projects completed or on-going. Those who have not signed-up are mostly out-of-state and in some cases have reduced activities from their farms. BMP implementation in this subwatershed has been outstanding. The practices are varied and are designed not only to reduce pollutants but they also meet the business needs of the farmers.

MUDDY CREEK OF GREENBRIER

FIGURE 7 – Muddy Creek 319 project locations



The Muddy Creek watershed is part of the larger Greenbrier River watershed. It is 79,000 acres and includes the communities of Williamsburg, Blue Sulphur Springs, and Alderson. There are several major streams within the Muddy Creek watershed; approximately 165 miles of surface streams and a minimum of 12 miles of underground streams drain the watershed.

More than a third of stream miles are listed as impaired for fecal coliform. The first incremental project in this watershed began in 2011 and has made good progress.

The focus is septic repair/pumping and agricultural BMPs. Table 8 provides a summary of the BMPs, progress and load reductions anticipated upon completion.

TABLE 9 – Muddy Creek 319 progress to date

Septic's					
Practice	Unit	# needed	Installed	% complete	Reductions
Pumping	System	120	13	11	5.41E+11
Replacement	System	17	7	41	1.15E+13
Totals					1.20E+13
Agriculture					
Practice	Unit	# needed	Installed	% complete	Reductions
Alternate water systems	Each	5	2	40%	3.40E+12
Fencing	Feet	15,000	2,200	15	1.19E+12
Stream crossing	Each	5	0	0	-
Riparian buffer	Acres	10	2	20	1.49E+12
Totals					4.59E+12

AGRICULTURE/WASTEWATER BEST MANAGEMENT PRACTICES

Agricultural BMPs are highly effective tools. They enhance the farms aesthetic look, reduce pollutants and are relatively easy to maintain and operate. Table 10 provides a summary of the BMPs reported in GRTS for all agricultural and wastewater projects during this reporting period.

TABLE 10 – Agriculture and Wastewater BMPs

BMP Type	Project	Fiscal year	Planned/installed	GRTS#
Wastewater systems			57	
Fence	Sleepy Creek	2008	2,000 ft.	10
Runoff management system			2,500 ft.	
Fence	Kitchen Creek	2009	7,260 ft.	4
Nutrient management			8	
Prescribe grazing			8	
Riparian buffers			6 ac.	
Stream crossing			10	
Waste storage facility			2	
Alternate water source			10	
Alternate water source	Mill Creek South Branch	2009	14	5
Fence			52,464 ft.	
Onsite wastewater			4	
Riparian buffers			386 ac.	
Waste storage facility	1			
Fence	Mill Creek Opequon	2009	2,400 ft.	6
Stream restoration			1,000 ft.	
Onsite wastewater			18	
Rain garden			2	
Riparian buffers			503 ac.	
Stream crossing			2	

Agriculture and Wastewater BMPs continued:

BMP Type	Project	Fiscal year	Planned/installed	GRTS#
Alternate water source			15	
Fence	Back Creek	2010	240,000 ft.	6
Stream crossing			5	
Wastewater systems	Winding Gulf	2010	6	7
Stream restoration			300 ft.	
Fence	Lost River NSD	2010	1,000 ft.	14
Prescribed grazing			1	
Stream restoration			1,700 ft.	
Riparian buffers			130 ac.	
Alternate water source			3	
Fence	Kitchen Creek	2011	5,000 ft.	3
Nutrient management			2	
Riparian buffers			3	
Stream crossing			2	
Alternate septic systems	Elk Run	2011	11	4
Stream restoration			500 ft.	
Alternate septic systems	Tuscarora Creek	2011	19	5
Dam removal			1	
Alternate septic systems			15	
Alternate water source	Muddy Creek (Greenbrier)	2011	5	9
Fence			15,000 ft.	
Stream crossing			5	
Riparian buffers			10	
Stream restoration			1,500 ft.	
Stream restoration	Upper Elk	2012	9,093 ft.	5
Alternate water source			2	
Heavy-use protection	Kitchen Creek	2012	1	6
Livestock protection			1	
Nutrient management			1	
Riparian buffers			2 ac.	
Alternate water source			8	
Fence	South Fork Potts Creek	2012	45,000 ft.	7
Nutrient management			6	
Riparian buffers			10 ac.	
Stream crossing			5	
Alternate water source	Milligan Creek	2012	10	9
Heavy-use protection			4	
Prescribed grazing			10	
Nutrient management			10	
Riparian buffers			20 ac.	

Agriculture and Wastewater BMPs continued:

Totals by BMP type

Wastewater/septic	115	Alternate water sources	59	Stream restoration	14,093
Fence	371,124	Riparian buffers	1,057	Nutrient management	27
Prescribed grazing	19	Heavy-use protection	5	Waste storage facility	3
Runoff management system	2,500	Rain garden	2	Livestock protection	1
Dam removal	1				

MORE NPS PROJECT HIGHLIGHTS

WOLF CREEK FAYETTE SQUARE



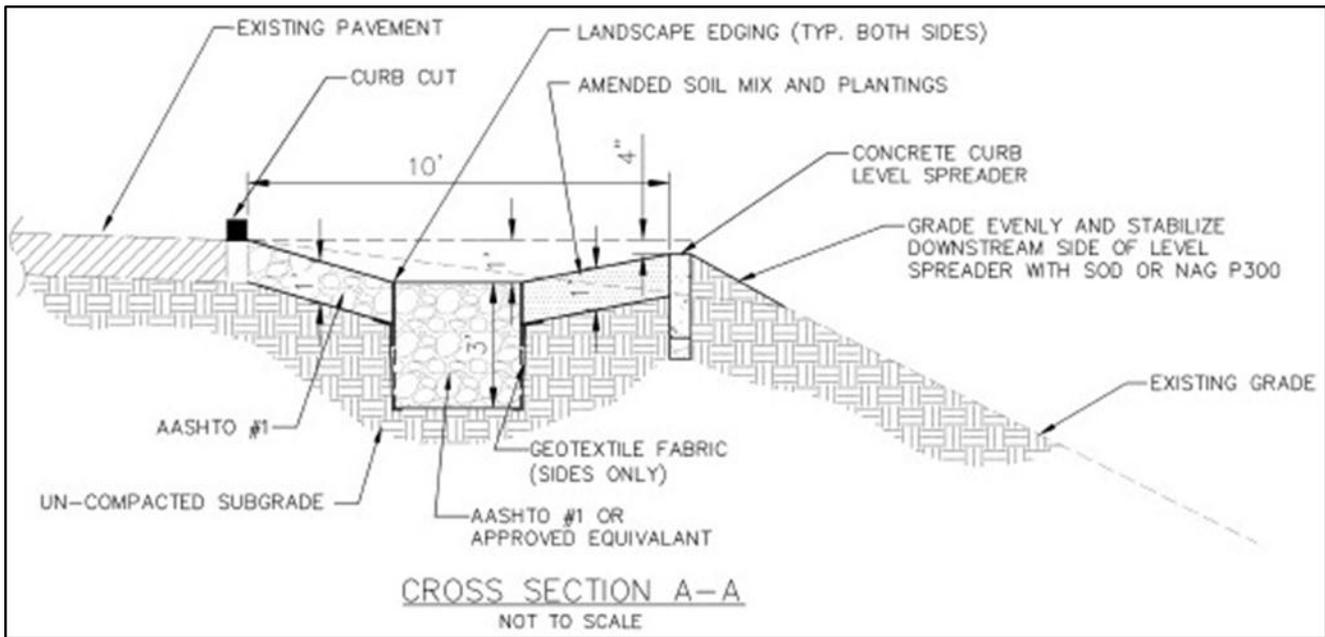
Parking lots, along with roads, are a principal source of water pollution in urban areas. Virtually all of the rainfall (minus evaporation) becomes “urban runoff”. Motor vehicles are a constant source of pollutants, including gasoline, motor oil, polycyclic aromatic hydrocarbons, and heavy metals. To avoid flooding and unsafe driving conditions, parking lots are built to effectively channel and collect runoff. Traditionally, treatment of parking lot water pollution or urban runoff is conveyed directly into storm sewers, streams, dry wells or even sanitary sewers. Modern stormwater management facilities include retention basins, infiltration basins and percolation trenches. Some newer designs include bioretention systems, which use plants to more extensively absorb and filter pollutants. However, most existing lots have limited or no facilities to control runoff.

The Fayette Square project focuses solely on stormwater issues that impact the Wolf Creek watershed. This NPS proposal is somewhat atypical in that its entire focus is stormwater, whereas in the past most of the stormwater efforts funded were either small AGO grants or portions of an incremental with the major focus on agricultural or wastewater reductions.

This project will involve removing/disconnecting four concrete gutters from the parking lot and installing a bioretention filter strip. The bioretention filter strip will be installed between the edge of the parking lot and the creek, and will function to reduce pollutants and sedimentation from urban runoff before this water enters Wolf Creek. The Fayette Square parking lot is approximately 6.10 acres of impervious pavement. Excluding the Town of Fayetteville and U.S. Highway 19, the Fayette Square Shopping Center is the largest impervious surface in the Wolf Creek watershed. The implementation of a bioretention filter strip is estimated to reduce loads by 60-70% (based upon current studies) and provide primary water treatment before surface runoff enters Wolf Creek. Load reduction calculations will be performed after sufficient pre-construction water quality data has been collected.

Members of PAN attended a workshop hosted by the Beckley Sanitary Board. The workshop focused on bioretention cells and provided a rain garden tour of their facilities. PAN was able to convince the Professional

Engineer (PE) at the Beckley Sanitary Board to review the project bid package that had been prepared. Some adjustments were made based on the PEs recommendations and contractors were notified of the pre-bid meeting.



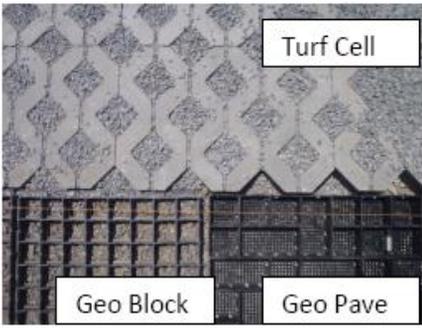
Cross section of bioretention cell

PAN selected Aspen Landscaping. PAN had experience working with Aspen in the past on previous rain garden projects and they also came highly recommended by multiple sources. Award and Agreement documents were finalized with Aspen Landscaping in fall of 2012. The next step will be to determine a construction schedule based upon predictable weather patterns. Most likely construction will commence in spring or summer of 2013 as the weather and conditions dictate.

Studies have found that properly designed and constructed bioretention cells are able to achieve excellent removal of heavy metals. Users of this technique can expect typical copper (Cu), zinc (Zn), and lead (Pb) reductions of greater than 90%, with only small variations in results. Average removal efficiency for cell effluent is around 60%. Generally 70 to 80% reduction in ammonia was achieved in the lower levels of sampled bioretention cells. Other pollutants of concern are also addressed by bioretention cells. For example, sedimentation can occur in the ponding area as the velocity of the runoff slows and solids fall out of suspension. Field studies at the University of Virginia have indicated 86% removal for Total Suspended Solids (TSS), 97% for Chemical Oxygen Demand (COD), and 67% for Oil and Grease. Additional work with laboratory media columns at the University of Maryland has demonstrated potential bioretention cell removal efficiencies greater than 98% for total suspended solids and oil/grease.

SLEEPY CREEK

In 2006, Sleepy Creek Watershed was placed on the WV 2006 303(d) list because of violations of the fecal coliform bacteria water quality standard. The fecal coliform TMDL for Sleepy Creek was completed in 2007. Within the watershed two streams have a TMDL. These streams are Sleepy Creek and Indian Run; both are impaired “relative to numeric water quality criteria for fecal coliform bacteria. In 2008, the Sleepy Creek Project Team started a 5-year project to reduce fecal coliform levels through implementation of residential, urban and agricultural BMP’s. The Sleepy Creek watershed is about 93,000 acres located within Morgan County, West Virginia (87%) and Fredrick County, Virginia (13%). It flows 42 miles north into the Potomac River.



One of the first projects for the Sleepy Creek project team was tree plantings. 35 Volunteers from the Sleepy Creek Watershed Association, Berkeley Springs Lions Club, Morgan County Master Gardeners, Berkeley Springs High School Leo Club, the Eastern Panhandle Conservation District, and local residents planted 200+ trees in the Morgan County Business Park and surrounding subdivisions mostly within the Indian Creek subwatershed. The tree planting project was designed slow stormwater runoff and provides one of most effective hands-on tools for volunteer participation. Chesapeake Bay Forester Herb Peddicord provided instruction to the participants on correct tree planting techniques.



The 319 grant also provided monies for the porous or permeable paving of a 5,000 sq. ft. parking lot. The project team partnered with Mountain View Solar located at U.S. 522 Business Park. This project used an innovative technique known as “Turf Cell”, an open cell concrete block type material. After installation, the block was filled with small stone, which was compacted in the cell openings. Another 1,000 sq. ft. overflow lot was covered with “Geo Block 2,” a recycled plastic open grid which is interlocked and filled with 70% stone and 30% soil. The grid has open cells in which grass can grow. The third portion of the demo site was a 1,000 sq. ft. parking area using “Geo Pave” units which hold stone in place through a herringbone cell pattern with a mesh bottom.



The demonstration areas will have signs identifying the products used in the project to aid builders and homeowners who may wish to install porous paving.

The WV Conservation Agency and the Eastern Panhandle Conservation District (EPCD) have implemented their Agriculture Enhancement Program in the watershed. The purpose of the program is to increase farm productivity by conserving soil and making wise use of agricultural resources and improving water quality by offering technical and cost-

share assistance as an incentive to implement best management practices. One of the farms that signed up for the

2011 program is in recently completed a streambank fencing project. This is site is home of a summer camp for city kids and teaches the home schooled children in Berkeley Springs environmental education. The children complete a pre-construction monitoring and will complete post-construction monitor at this site. EPCD cost shared on 1,290 feet of goat/horse fence with a 35 foot buffer.



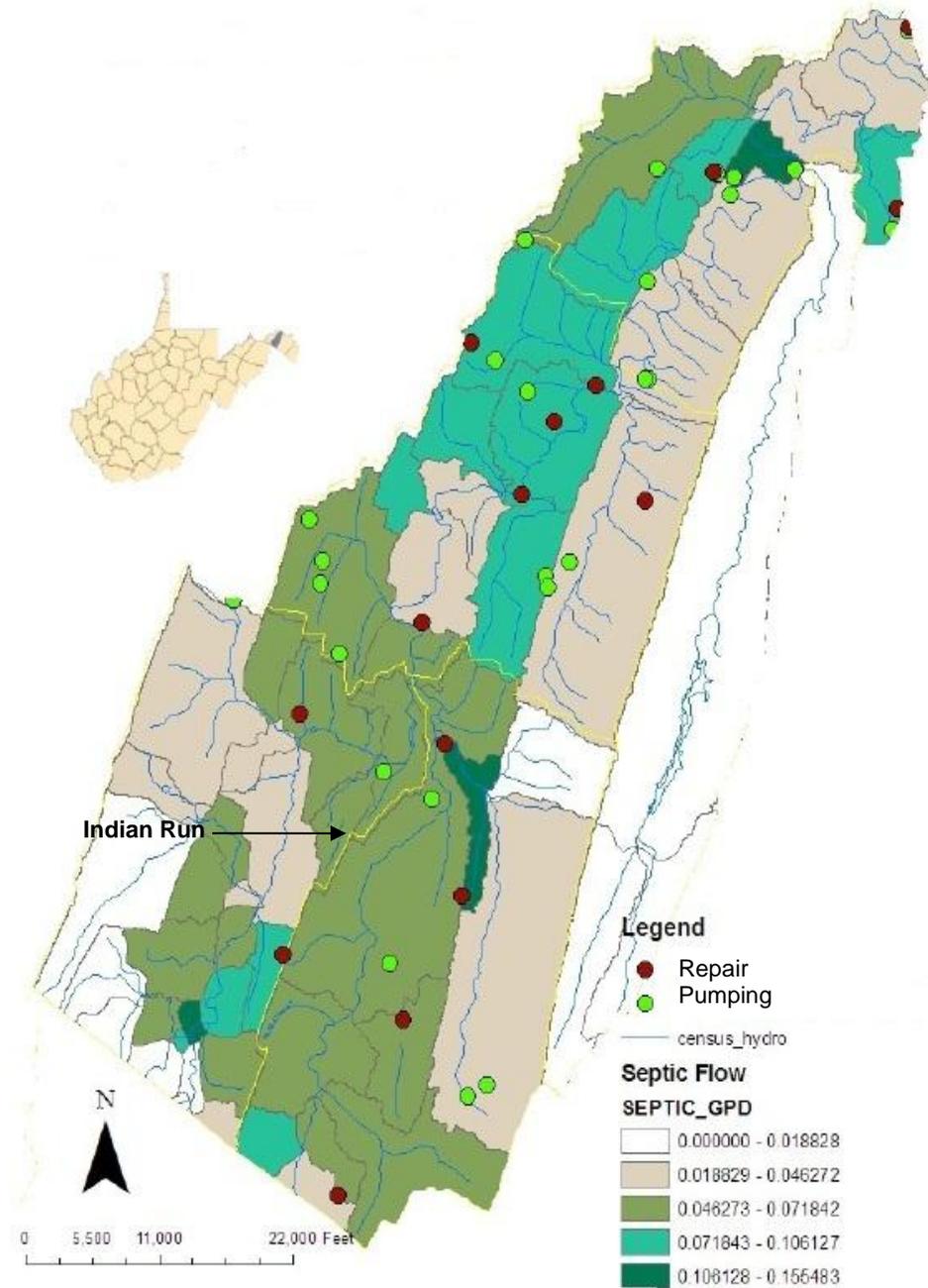
Before and after pictures of Sleepy Creek streambank fencing projects

Sleepy Creek project team also implemented a very successful septic campaign, which resulted in the pumping and/or repair of 77 faulty septic systems (Figure 8).

In addition to the stormwater and agricultural projects the

The results of all of these efforts were dramatic and resulted in the de-listing of Indian Run in 2012. Future incremental proposals will likely eliminate bacteria contamination in the remainder of the watershed resulting in a complete restoration of the stream and full implementation of the Sleepy Creek WBP.

FIGURE 8 – Septic pumping and upgrades in the Sleepy Creek watershed



WATERSHED BASED PLANS

West Virginia's NPS Program takes a watershed approach to implementing non-point source water quality projects. Incremental funds are directed to watersheds where a TMDL has been or will be developed according to the EPA guidelines for the NPS Program.

NPS Program resources will be used for guidance, expertise, some monitoring and any other support activities. The NPS Program, WVCA and other NGOs will be the primary organizations providing that support. Where necessary the NPS Program and WVCA will draft the WBPs with the cooperation of the local watershed associations. WBPs developed through this process will meet EPA's Watershed based planning criteria as outlined in EPA's National NPS program Guidance; and draft plans will be submitted to EPA for review, comment and approval.

In 2012 the NPS Program and its partners completed or revised WBPs for Knapps Creek, Patterson Creek, Anderson Run, Milligan Creek, South Fork Potts Creek and Roaring Creek. Revisions are underway for Tuscarora Creek (recently re-submitted), Elk Run and Morris Creek. Two watershed protection plans (WPP) were also completed, one in the Upper Elk River (recently approved) and one for Back Creek, in the Potomac Direct Drains. The Back Creek WPP has been reviewed and commented on by the NPS Program. The contractor, Green Rivers has recently completed the updates to the plan based on the NPS Program's recommendation. This version is currently under review and will be submitted to EPA in early spring of 2013.

Unobligated funds from fiscal year 2010 will likely fund several new WBPs in the Lower Cheat and West Fork. Table II provides the current WBPs that are listed on the NPS Program's website. All of the EPA approved plans are available for download.

TABLE II – NPS Program's watershed based plans

HUC8 watersheds	Watershed Plans	Implemental status	EPA Approved
Cacapon	Lost River	In progress	Yes
Cheat	Lower Cheat River	In progress	Yes
	North Fork Blackwater	Needs revisions	Yes
Elk	Upper Elk River (WPP)	Not yet initiated	Yes
Greenbrier	Knapps Creek	In progress	Yes
	Muddy Creek	In progress	Yes
	Second Creek	In progress	Yes
Guyandotte	Upper Guyandotte	In progress	Yes
James	Potts Creek	In progress	Yes
Kanawha	Cane Fork	In progress	Yes
	Morris Creek	Revisions in progress	No
Little Kanawha	Montwood Lake	Not yet initiated	Yes
Monongahela	Deckers Creek	In progress	Yes
	West Run	In progress	Yes
Lower New	Piney Creek	Not yet initiated	Yes
	Wolf Creek	In progress	Yes
Potomac Direct	Elk Run	Needs revisions	No
	Back Creek (WPP)	Under development	NA
	Sleepy Creek	In progress	Yes
	Mill Creek of Opequon	In progress	Yes
	Tuscarora Creek	Needs revisions	No
South Branch Potomac	Mill Creek of South Branch	In progress	Yes
Tug Fork	North Fork Elkhorn Creek	In progress	Yes
Tygart Valley	Roaring Creek	In progress	Yes
	Sandy Creek	Not yet initiated	Yes
	Upper Buckhannon River	In progress	Yes
West Fork	Lamberts Run	In progress	Yes

<http://www.dep.wv.gov/WWE/Programs/nonpntsource/WBP/Pages/WVWBPs.aspx>

The WBP is a document that includes an introduction (background and geographic extent of the watershed), followed by nine **ELEMENTS** that must be included in order for the plan to qualify for \$319 funds.

AREAS OF CONCERNS, RECOMMENDATIONS AND FUTURE ACTIONS

The NPS Program continues to make significant progress in its abatement of nonpoint source pollution impacts. However, this past year has provided many new challenges to overcome. Early in the year the lack of staff in key regions made local project management oversight difficult, this problem has been solved but there are many more, the most important being the capacity of volunteer groups.

This past year many watershed organizations that were once capable of implementing 319 projects have lost members and in some cases have completely disbanded. There are many reasons for this, poor economic conditions have played a role, and many of the members are reaching ages that make volunteering more difficult, especially that of the physical and mental nature need for NPS work.

The NPS Management Team has recently held meetings to determine the capacity of current groups, and the potential of new groups and how we can support the existing groups and provide the necessary training for those with future potential. Discussion is on-going with management and staff in the hopes to develop training tools and resources that will foster the groups and help sustain their activities well into the future. Our support programs and Basin Coordinators will play a key role in developing watershed organization capacity.

The NPS Program is also considering ways to improve the program's overall administration. Below are some examples of plans to be implemented over the next several years:

1. Schedule and facilitate at least three NPS Program planning meetings with stakeholders and partners, which will be held in various locations throughout the state. Their purpose is to develop short and long term goals, get input on and commitments to the 2014 NPS Management Plan.
2. Develop and improve tracking/organizing tools specifically for NPS Project Management. These may be a combination of spreadsheets, access databases and online tools for entering program information. Training will be provided on all tools so that partners and stakeholders can understand and use the tools to assist with their reporting requirements.
3. Develop procedures and perhaps an application process for year-round NPS project proposal submittals. The proposals will be reviewed as they are received and the appropriate ones chosen that meet the NPS Programs long and short terms goals as described in the NPS Management Plan.
4. Complete a draft NPS Management Plan.

APPENDIX DESCRIPTIONS

APPENDIX I provides a list of the active projects (2008-2012); these projects not only include those funded by 319 but also those related to nonpoint source that used state funding and other sources. These are listed here because the NPS Program is involved in the review and sometimes approval of these other projects. There are other projects that NPS program staff is involved with (e.g. Chesapeake Bay Grants). These are not listed here because the NPS Program Coordinator does not review these grants; however, some reporting is required due to the supervisory roles of the NPS Program Coordinator.

APPENDIX 2 provides a list of all the NPS Program contacts

APPENDIX 3 provides the 2012 Nonpoint Source Program Grant Funds

APPENDIX 4 acknowledges the hard work of the NPS stakeholders and lists those that contributed images and figures to this report.

APPENDIX I – NONPOINT SOURCE PROGRAM PROJECTS

Project Name	Category	Sub-category	County	HUC8	Program	FY	Costs	Status	Organization
Ury Septic field/bank repairs	Bacteria	Restoration	Wyoming	Upper Guyandotte	NPS SRF	2008	\$195,000	Complete	Upper Guyandotte Watershed Assoc.
Muddy Creek Phase 2	Metals	Acidity	Preston	Cheat River	NPS SRF	2008	\$192,535	Complete	Friends of Cheat
North Fork Greens Run	Metals	Acidity	Preston	Cheat River	NPS	2008	\$250,000	Complete	Friends of Cheat
Pringle Run/Pase	Metals	Acidity	Preston	Cheat River	NPS	2008	\$250,000	Complete	Friends of Cheat
Sleepy Creek	Bacteria	Acidity	Morgan	Potomac Direct Drains	NPS	2008	\$487,587	Complete	Sleepy Creek Watershed Assoc.
Kitchen Creek III Phase 2	Bacteria	Nutrients	Monroe	Greenbrier River	NPS	2008	\$130,000	Complete	WV Conservation Agency
Smooth Rock Lick #1 & 2	Metals	Acidity	Upshur	Tygart Valley River	NPS	2008	\$122,930	Complete	Buckhannon River Watershed Assoc.
Mulch and Skid Road repairs	Sediment		Pocahontas	Elk River	AGO	2008	\$36,988	Complete	WVU - Appalachian Hardwood Center
Widmyer Wetland construction	Stormwater		Morgan	Potomac Direct Drains	AGO	2008	\$11,162	Complete	Eastern Panhandle Conservation District
Water in Karst	Outreach		Greenbrier	Greenbrier River	AGO	2008	\$10,200	Complete	Greenbrier River Watershed Assoc.
Baltimore St. raingardens	Stormwater		Berkeley	Potomac Direct Drains	AGO	2008	\$33,614	Complete	Opequon Project Team
Virginia Chapel pervious pavement	Stormwater		Kanawha	Upper Kanawha River	AGO	2008	\$20,000	Complete	Town of Cedar Grove
Watershed Celebration Day	Outreach		Kanawha	Statewide	Various	2008	\$15,927	Complete	Various stakeholders
Total number of projects	13				Total		\$1,755,943	100	% Complete
Reed Mine & Valley Point 12	Metals	Acidity	Preston	Monongahela River	NPS	2009	\$269,000	Behind	Friends of Deckers Creek
Kitchen Creek II	Bacteria	Nutrients	Monroe	Greenbrier River	NPS	2009	\$108,523	Complete	WV Conservation Agency
Mill Creek of South Branch	Bacteria	Nutrients	Hardy	South Branch Potomac	NPS	2009	\$174,000	On schedule	WV Conservation Agency
Mill Creek of Opequon	Bacteria	Sediment	Berkeley	Potomac Direct Drains	NPS	2009	\$448,000	Behind	Canaan Valley Institute
Lamberts Run Guinn Portal	Metals	Acidity	Harrison	West Fork River	NPS	2009	\$150,000	Complete	WVU - WV Water Research Institute
Cane Fork of Cabin Creek	Metals	Acidity	Kanawha	Upper Kanawha	NPS	2009	\$150,000	On schedule	WVU - WV Water Research Institute
Sovern Run Clark	Metals	Acidity	Preston	Cheat River	SRF	2009	\$192,213	On schedule	Friends of Cheat
Muddy Creek Schwab	Metals	Acidity	Preston	Cheat River	SFR	2009	\$41,575	On schedule	Friends of Cheat
Morgan Run DeAntonis	Metals	Acidity	Preston	Cheat River	SRF	2009	\$47,522	On schedule	Friends of Cheat
SDC raingarden	Stormwater		Jefferson	Potomac Direct Drains	AGO	2009	\$8,645	Behind	Shepherdstown Daycare Center
Potter Ave raingarden	Stormwater		Randolph	Tygart Valley River	AGO	2009	\$6,000	Complete	Woodland Development
Year of Karst	Outreach		Monroe	Upper New River	AGO	2009	\$7,862	Complete	Indian Creek Watershed Assoc.
Appalachian Watershed Stream Monitors	Monitoring		Pendleton	South Branch Potomac	AGO	2009	\$45,000	Complete	The Mountain Institute
Streambank evaluations	Monitoring		Monongalia	Monongahela River	AGO	2009	\$10,230	Complete	Friends of Deckers Creek
Watershed Celebration Day	Outreach		Tucker	Statewide	Various	2009	\$18,006	Complete	Various stakeholders

Total number of projects	15				Total		\$1,676,576	47	% Complete
Project Name	Category	Sub-category	County	HUC8	Program	FY	Costs	Status	Organization
Burch High School NSD	Restoration	Sediment	Mingo	Tug Fork River	SRF	2010	\$138,873	Complete	Canaan Valley Institute
Pigeon Creek NRCS	Restoration	Sediment	Mingo	Tug Fork River	SRF	2010	\$22,000	Complete	Natural Resource Conservation Service
Slabcamp Run	Metals	Acidity	Preston	Monongahela River	NPS	2010	\$491,800	On schedule	Friends of Deckers Creek
Back Creek Ag BMPs	Bacteria	Nutrients	Monroe	Greenbrier River	NPS	2010	\$192,381	On schedule	WV Conservation Agency
Winding Gulf OSLP	Bacteria	Nutrients	Raleigh	Upper Guyandotte	NPS	2010	\$229,600	Behind	Canaan Valley Institute
N Fork Elkhorn OSLP	Bacteria		McDowell	Tug Fork River	NPS	2010	\$317,900	Behind	McDowell County Wastewater Coalition
Summerlee Bioremediation	Metals	Acidity	Fayette	Lower New River	NPS	2010	\$90,760	On schedule	Plateau Action Network
West Run Phase 1	Metals	Acidity	Monongalia	Monongahela River	NPS	2010	\$73,850	On schedule	WVU - WV Water Research Institute
Kitchen Creek III Phase 1	Bacteria		Monroe	Greenbrier	NPS	2010	\$245,586	On schedule	WV Conservation Agency
Lost River Stream Restoration	Sediment	Nutrients	Hardy	Cacapon River	NPS	2010	\$125,000	On schedule	WV Conservation Agency
State Fair raingardens	Stormwater		Greenbrier	Greenbrier River	AGO	2010	\$17,462	Complete	WV Conservation Agency
Pet waste/Raingardens	Stormwater		Raleigh	Lower New River	AGO	2010	\$17,462	Complete	Piney Creek Watershed Assoc.
Riparian Restoration	Sediment	Restoration	Morgan	Potomac Direct Drains	AGO	2010	\$7,134	Behind	Warm Springs Run Watershed Assoc.
State of the Watershed Report	Outreach		Greenbrier	Greenbrier River	AGO	2010	\$4,200	Complete	Friends of Lower Greenbrier
Watershed Celebration Day	Outreach		Raleigh	Statewide	Various	2010	\$12,370	Complete	Various stakeholders
Total number of projects	15				Total		\$1,986,378	41	% Complete
Slabcamp Tributary	Metals	Acidity	Preston	Monongahela River	NPS	2011	\$274,089	On schedule	Friends of Deckers Creek
Kitchen Creek II	Bacteria	Nutrients	Monroe	Greenbrier River	NPS	2011	\$82,534	On schedule	WV Conservation Agency
Muddy Creek Greenbrier	Bacteria		Greenbrier	Greenbrier River	NPS	2011	\$369,980	On schedule	WV Conservation Agency
Lambert Site 7	Metals	Acidity	Harrison	West Fork River	NPS SRF	2011	\$641,557	On schedule	WVU - WV Water Research Institute
Tuscarora Creek	Bacteria	Sediment	Berkeley	Potomac Direct Drains	NPS	2011	\$95,890	Behind	Canaan Valley Institute
Elks Run	Bacteria	Sediment	Jefferson	Potomac Direct Drains	NPS	2011	\$100,700	Behind	WV Conservation Agency
FOLG raingarden	Stormwater		Greenbrier	Greenbrier River	AGO	2011	\$15,000	Complete	Friends of Lower Greenbrier
Watershed Education	Outreach		Grant	Potomac Direct Drains	AGO	2011	\$15,129	Complete	Potomac Valley Audubon Society
Monitoring and Mapping	Monitoring		Preston	Cheat River	AGO	2011	\$45,000	On schedule	Friends of Cheat
Clean Creek Program	Monitoring		Monongalia	Monongahela River	AGO	2011	\$15,000	On schedule	Friends of Deckers Creek
Watershed Celebration Day	Outreach		Lewis	Statewide	Various	2011	\$10,700	Complete	Various stakeholders
Total number of projects	11				Total		\$1,665,579	27	% Complete
Potts Creek	Bacteria		Monroe	James River	NPS	2012	\$565,440	On schedule	WV Conservation Agency
Kitchen Creek III	Bacteria	Nutrients	Monroe	Greenbrier River	NPS	2012	\$114,529	On schedule	WV Conservation Agency
Milligan Creek BMPs	Bacteria	Nutrients	Greenbrier	Greenbrier River	NPS	2012	\$205,100	On schedule	Friends of Lower Greenbrier
Cup Run Stream Restoration	Restoration	Sediment	Pocahontas	Elk River	NPS	2012	\$334,800	Behind	Elk Headwaters Watershed Assoc.

Project Name	Category	Sub-category	County	HUC8	Program	FY	Costs	Status	Organization
Fayette Square	Stormwater		Fayette	Lower New River	NPS	2012	\$139,619	On schedule	Plateau Action Network
Roaring Creek Mars Portal	Metals	Acidity	Randolph	Tygart Valley River	NPS	2012	\$315,302	On schedule	WVU - WV Water Research Institute
Sovern Run - Titchnell/Sands	Metals	Acidity	Preston	Cheat River	SRF	2012	\$316,490	On schedule	Friends of Cheat
West Run Phase 2	Metals	Acidity	Monongalia	Monongahela River	NPS	2012	\$441,141	On schedule	WVU - WV Water Research Institute
Herods Run	Metals	Acidity	Upshur	Tygart Valley River	SRF	2012	\$357,193	On schedule	WVU - WV Water Research Institute
Roaring Creek/Mars Portals 2	Metals	Acidity	Randolph	Tygart Valley River	SRF	2012	\$315,302	On schedule	WVU - WV Water Research Institute
Watershed Celebration Day	Outreach		Kanawha	Statewide	Various	2012	\$14,435	Complete	Various stakeholders
North Fork Greens Run Refuse	Metals	Acidity	Preston	Cheat River	SRF	2012	\$111,523	On schedule	Friends of Cheat
Summerlee Stream Restoration	Restoration	Sediment	Fayette	Lower New River	SRF	2012	\$236,853	Behind	Plateau Action Network
Total number of projects	13				Total		\$3,230,874	8	% Complete
Total number of projects 2008-2012	67				Overall total		\$10,315,350	45	Overall % Complete

APPENDIX 2 - PROGRAM CONTACTS

Basin and Statewide Coordinators^S (statewide)

Alana Hartman	(304) 822-7266 Ext. 3623	Alana.C.Hartman@wv.gov	Potomac Basin/Chesapeake Bay Program
Nicki Taylor	(304) 456-1938 Ext. 3151	Nicki.M.Taylor@wv.gov	Southern Basin
Martin Christ	(304) 368-2000 Ext. 3736	Martin.J.Christ@wv.gov	Northern Basin
Tomi Bergstrom	(304) 926-0499 Ext. 1098	Tomi.M.Bergstrom@wv.gov	Western Basin
Sebastian Donner	(304) 822-7266 Ext. 3608	Sebastian.Donner@wv.gov	Stormwater Assistance (Potomac)
Kimberly Maxwell	(304) 465-1911 Ext. 3191	Kimberly.A.Maxwell@wv.gov	Project Wet Coordinator ^S
Glenn Nelson	(304) 926-0499 Ext. 1710	Glenn.R.Nelson@wv.gov	Save Our Streams Coordinator ^S
Glenn McLernon	(304) 926-0499 Ext. 1715	Glenn.D.McLernon@wv.gov	In Lieu Fee Coordinator ^S
Other program contacts			
Teresa Koon	(304) 926-0499 Ext. 1020	Teresa.M.Koon@wv.gov	Assistant Director
Jennifer Pauer	(304) 926-0499 Ext. 1038	Jennifer.Pauer@wv.gov	Watershed Program Coordinator
Timothy Craddock	(304) 926-0499 Ext. 1040	Timothy.D.Craddock@wv.gov	Nonpoint Program Coordinator
Stephanie Ferrell	(304) 926-0499 Ext. 1171	Stephanie.R.Ferrell@wv.gov	Administrative Assistant (NPS/WQ Standards)

**WEST VIRGINIA
NONPOINT SOURCE PROGRAM**

Grant Funds: \$319(h)

BUDGET PERIOD FY 2012

OCTOBER 1, 2012 THROUGH SEPTEMBER 30, 2013

Base Grant	Federal	State/Local	Total
WVDEP, NPS Program	\$455,616	\$303,744	\$759,360
WV Conservation Agency	\$200,000	\$133,334	\$333,334
Totals	\$655,616	\$437,078	\$1,092,694
Incremental Grant			
James River projects	\$339,264	\$226,176	\$565,440
Kitchen Creek III	\$70,517	\$44,012	\$114,529
Milligan Creek	\$123,060	\$82,040	\$205,100
Upper Elk projects design	\$21,000	\$14,000	\$35,000
Cup Run NSCD	\$206,880	\$137,920	\$344,800
Wolf Creek	\$83,553	\$56,066	\$139,619
Roaring Creek	\$189,181	\$126,121	\$315,302
Watershed Based Plans	\$37,929	\$26,736	\$64,665
Totals	\$1,071,384	\$713,071	\$1,784,455

APPENDIX 4 - ACKNOWLEDGEMENTS

The NPS Program would like to acknowledge the efforts of all the partners and other stakeholders that not only contributed to the information in this report, but also those who have played roles in NPS projects and outreach activities. All of the names and organizations are too numerous to mention. See APPENDIX I to get a better idea of the wide range of stakeholders.

Picture and image contributors

NGOs and State Agencies	Names of contributors
Buckhannon River Watershed Assoc.	WV Conservation Agency Dennis Burns Barbara Elliot
Downstream Strategies	WV Dept. of Environmental Protection John McMunigal Jami Thompson
Friends of the Cheat	Plateau Action Network Tim Craddock Martin Christ
Sleepy Creek Watershed Assoc.	Trout Unlimited Chris Daughterly Glenn Nelson Paul Richter Levi Rose

“UNLESS someone like you cares a whole awful lot, nothing is going to get better. It's not.” - *The Lorax*



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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<http://www.dep.wv.gov/nonpoint>