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Introduction

This report provides summaries of activities associated with nonpoint program and watershed project funds for fiscal year 2015. It will highlight the activities completed this past year with nonpoint program funds, and provide an overview of select watershed projects. Program data such as watershed project load reductions, best management practices (BMPs) implemented, and project status will be provided in the appendices. The stories added to EPA's Success Story website in 2015 are also included.

Executive Summary

During the past year the WV Nonpoint Source (NPS) Program managed 102 projects. The project categories and numbers are provided in Table 1.

Table 1. Project categories and totals

Nonpoint	16	Of the 102 projects 39 have been completed including 100% from fiscal year (FY) 2011 and 52% from FY 2012. Several others were completed in FY 2013 and 2014. These projects are funded by § 319 grants provided by US Environmental Protection Agency (EPA) Region III. A 40% match is required for all § 319 projects. This match is provided by partner and state contributions. The state funded
Nonpoint - AGOs	35	
Watershed	42	
State funded - SRF	9	
Total	102	

projects are funded by WV Department of Environmental Protection's (WVDEP) Mining Section using stream restoration funds (SRF). Typically SRF projects are implemented in mining impacted watersheds. See appendix 1 for more information on project status.

The 319 grant guidance released in 2014 requires a 50/50 funding split between nonpoint funds and watershed project funds. West Virginia's split is 41.1 nonpoint and 60.1 watershed.

Nonpoint	Watershed	Fiscal Year
44.2%	55.8%	2011
43.6%	62.1%	2012
37.0%	63.0%	2013
42.7%	57.3%	2014
37.9%	62.1%	2015
41.1%	60.1%	Average

The funds in the nonpoint category are used primarily for program activities. These funds support our staff who are absolutely necessary and essential to our restoration efforts. The nonpoint funds also support additional grant opportunities (AGOs), which focus on a wide variety on nonpoint related issues. AGOs support watershed monitoring, outreach and education, planning and demonstration projects and more. Examples include:

West Virginia's NPS Program does not function without US EPA Region III grants, staff to implement these grants and local stakeholder involvement. The cost to implement watershed plans and their watershed projects is significant. The average grant award for the past several years is 1.7 million but the trend is downward (Figure 1). The Federal Government has been cutting the budgets of many environmental programs and § 319 is no exception.

The demand for project and planning funding is high. Every year we struggle to meet the cost ceiling of the grant award. There is much more work to do than there is money to pay for it. Considering that all NPS work is voluntary the demand and interest in watershed protection and restoration is impressive. In 2015 the projects and activities that ended totaled \$3,262,299 in nonpoint and watershed funds. This does not include the 40% match requirement. See [Appendix 1](#) for additional financial details.

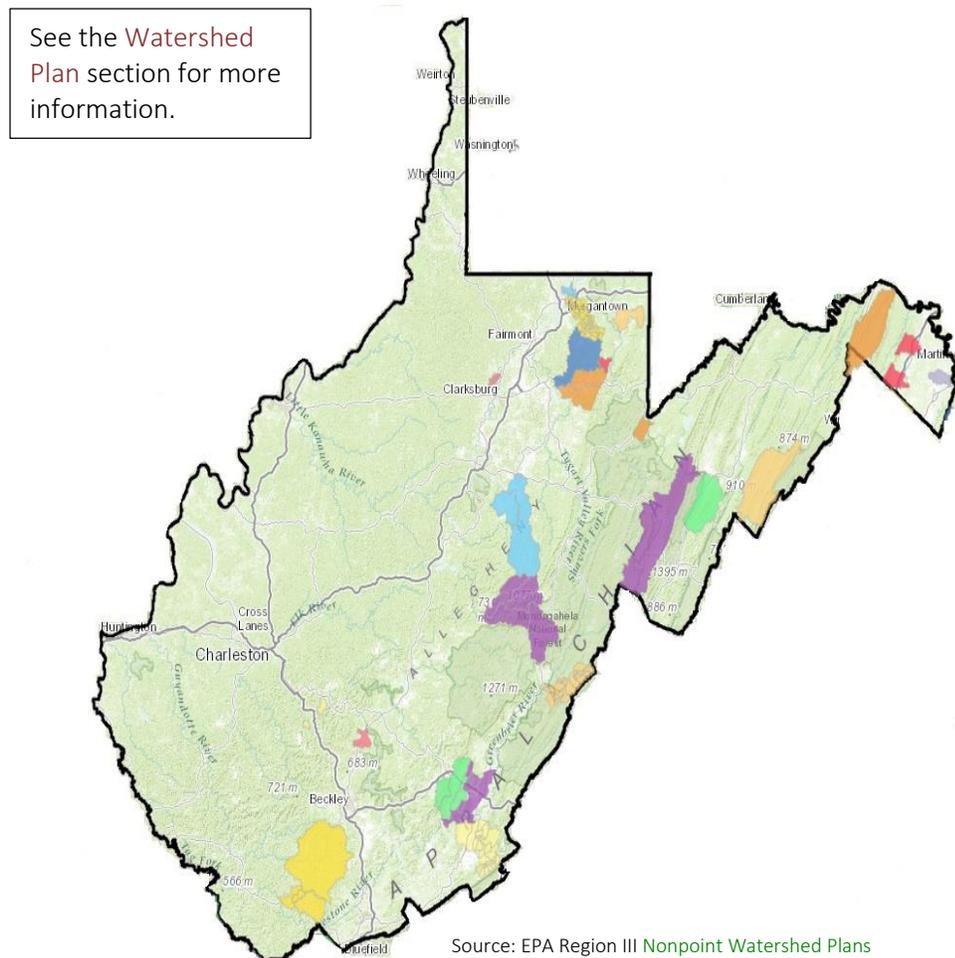
Figure 1. § 319 grants 2011-2015



The watershed project funds support protection and restoration in our priority areas. Our priorities are determined by the list of impaired streams (303(d) list), Total Maximum Daily Load (TMDLs) reports and local stakeholder support. Using information from the TMDL, as well as additional monitoring watershed plans (WPs) are created. WPs provide a road-map for restoring watersheds impaired by NPS pollution or protecting those of high quality that may be threatened. WV

has 30 WPs, some of the larger plans such as the Lower Cheat are being revised; their focus will be smaller HUC12 size watersheds within the larger basin. Others are in various stages of implementation. The map in Figure 2 shows most of the WP boundaries in WV. Note: Not all of the plans are shown on the map.

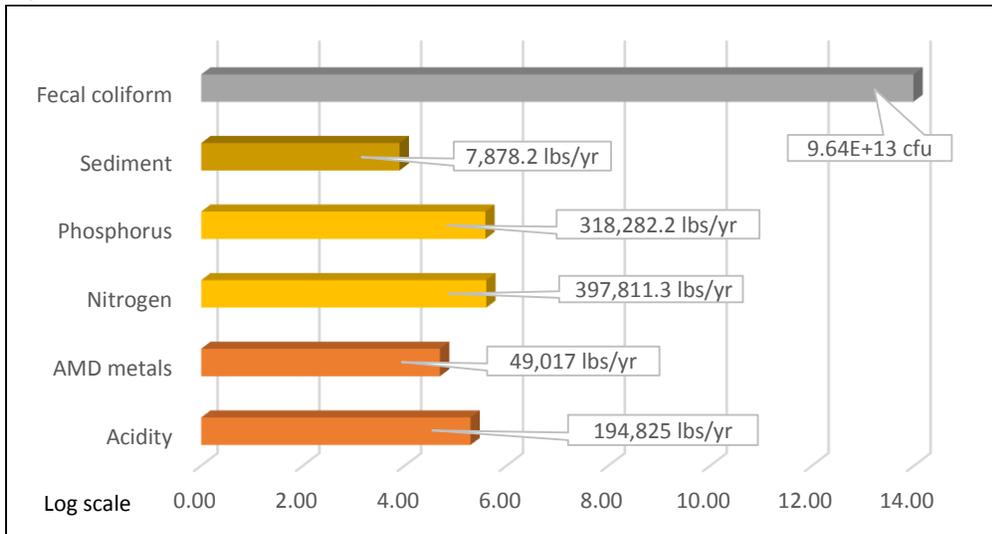
Figure 2. West Virginia watershed plan map



Pollutant reduction is the major impetus of our projects. These are implemented by a wide variety of partner agencies, non-government organizations (NGOs), local community stakeholders, volunteer watershed groups (WGs) and many others.

Projects completed in 2015 include fourteen (14) watershed, multiple statewide projects and a variety of AGO projects. As a result we achieved the pollutant reductions show in Figure 3.

Figure 3. Pollution reductions reported in 2015



In order to compare pollutant reductions the numbers in Figure 3 were converted to a log scale. Doing so provides a better picture of how the reduction quantities relate to each other. It is obvious from Figure 3 that most of the reductions in 2015 were from fecal coliform.

Pollution can only be reduced by implementing best management practices (BMPs). The types, number and size of the BMP varies based upon the project. In 2015 our partners installed a wide variety of BMPs to reduce abandoned mine drainage (AMD), agricultural pollution, stormwater, sediment and erosion control for business and construction, and work on stream channels and streambanks. Table 2 provides an overview of the BMPs implemented in 2015. See [Appendix 2](#) and [3](#) for more information.

Table 2. BMPs implementation in 2015

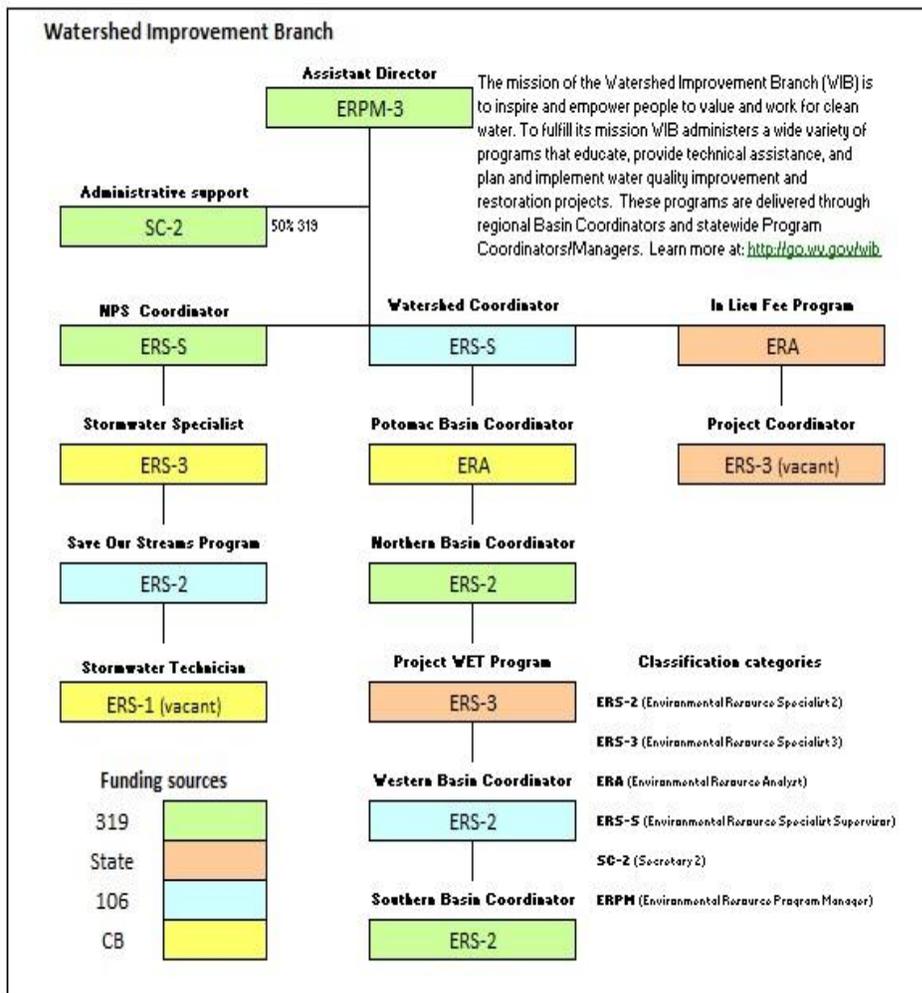
<u>BMPs</u>	<u>quantity</u>	<u>units</u>
Alternate water sources	40	unit
AMD treatment systems	7	unit
AMD wetlands/ponds	158,307	square feet
Buffers	39.7	acres
Fencing	120,361	feet
Heavy use protection	23	units
Grazing systems	3,127.3	acres
Nutrient management	6,153.6	acres
Sediment/erosion control	34.5	acres
Septics	50	unit
Stream restoration	1,405	feet
Streambank protection	1,328	feet
Tree planting	4	acres

Agricultural BMPs were the most prominent. Their focus was fecal coliform, and to a lesser extent nutrients, and sediment.

Nonpoint grant activities

As the lead agency the WV Department of Environmental Protection (WVDEP), Division of Water and Waste Management's (DWWM) Nonpoint Source (NPS) Program manages and coordinates the statewide NPS Program activities. They are guided by adherence to the stated goals, objectives and schedules included in the [NPS Program's Management Plan](#) and Annual workplan (Table 3). The administration and coordination involves a concentrated effort on the part of the lead agency and its partner agencies, as well as volunteer watershed associations, colleges and universities and a variety of other stakeholders.

Figure 4. WIB organizational chart and funding sources



In July 2015 WVDEP's NPS Program changed its name to better reflect what it's all about. The program is now called the [Watershed Improvement Branch \(WIB\)](#). The mission of the WIB is to inspire and empower the people of West Virginia to value and work for clean water. The WIB serves as a liaison between other state and federal agencies, non-government entities and citizen volunteers in the promotion and implementation of effective BMPs to help protect and restore watersheds. The WIB administers programs and funding to educate the public, provides assistance in planning and implementing water quality protection initiatives and offers guidance and support with stream protection and restoration projects.

Figure 5. Rain barrel workshop in the Western Basin



“Our purpose – to protect and restore West Virginia’s watersheds, which are invaluable natural resources – remains the same,” said Teresa Koon, assistant DWWM director and manager of the program. *“However, we wanted a name that better describes what we do and encompasses all of our work, not just the nonpoint source component.”*

WIB’s primary goal focuses on 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 aimed at achieving mandatory water quality objectives is a special challenge. The development of realistic watershed plans, effective project proposals, and the implementation of these projects is time consuming. The process requires a great effort and resources from all partners and stakeholders.

Staff positions are VITAL to our programs. The activities of **Basin Coordinators (BCs)** and our supporting programs are keys to the long-term success of WIB. These dedicated individuals are active in all aspects of the program from project planning and implementation, to outreach and education. They help stakeholder groups organize and sustain their efforts and support all state and federal agency partners by providing advice in their areas of expertise. See **Appendix 5** for more information.

The programs within WIB include: **WV Save Our Streams (SOS)** provides volunteer stream monitoring, outreach and NPS monitoring support; **WV Stream Partners (SP)** Program provides grant money to support the efforts of local watershed groups; the **Chesapeake Bay (CB)** Program involves the implementation of the state’s watershed implementation plan and other Bay efforts; **Project WET** provides water education and professional-development for teachers and non-formal educators, and others; and the **In Lieu Fee (ILF)** Program is our stream and wetland mitigation process that helps to repair impacts to wetlands and streams.

 Social media activities help to educate and increase our outreach efforts. WVDEP uses Twitter, **YouTube** and Facebook to update the public, provide opportunities to get involved and announce a wide variety of events. In 2015 our Facebook page had 290 Likes and added 2,190 more Friends.

Table 3. NPS Program 2015 annual goals

Nonpoint Program Goals	Complete		Comments
	Yes	No	
1. Provide leadership in managing the NPS Program	X		On-going
2. Represent the DWWM in multi-agency and stakeholder organizations.	X		On-going
3. Project management of all incremental projects; includes tasks such as technical guidance, support, oversight and compliance management.	X		On-going
4. Coordinate and oversee NPS Program grant projects in non-priority watersheds (AGOs).	X		A wide variety of demo and other projects
5. Participate and coordinate in the development of workplans and grant proposals in priority watersheds.	X		On-going
6. Maximize the use of all funds to achieve water quality standards in NPS impaired streams.	X		On-going
7. Establish a targeted monitoring approach for NPS Program projects including baseline, pre and post project to better evaluate the effectiveness of BMPs. Work with WAB and local partners to coordinate monitoring efforts.		X	Monitoring strategies are on-going. QAPPs, funding is a challenge
8. Participate in and coordinate with the WV Watershed Network.	X		Watershed celebrations
9. Coordinate with appropriate agencies, watershed groups and Public Service Districts to address failing on-site wastewater systems.	X		On-going there are multiple septic projects
10. Coordinate with project teams to propose additional funding opportunities and activities in order to conduct streambank projects in priority watersheds.		X	WVCA has completed work with statewide funds
11. Participate in the Cheat and Monongahela River TMDL implementation plans.	X		On-going
12. Develop guidelines for an urban runoff management program.		X	Develop in coordination with MS4 and stormwater
13. Coordinate with WVCA and NRCS to implement CREP/EQIP programs in priority watersheds.	X		On-going via agricultural projects
14. Provide conservation education and information to educators, youth and the general public.	X		On-going via outreach programs and BCs
15. Increase capacity for watershed associations to actively participate in and provide leadership for NPS watershed projects.	X		Watershed Pilot Program

WV Conservation Agency

Figure 6. WVCA CS teaches raingardens 101



WV Conservation Agency (WVCA) is our state agricultural partner and one of the few agencies we have funded consistently using a portion of our nonpoint grant funds. Their contributions are significant.

In 2015 using Nonpoint funds and state money they completed 33 projects that reduced nutrients by 409,919 lbs/year and sediment by 1,171 tons/year (Table 3).

WVCA also contributes to our watershed restoration efforts by managing multiple watershed projects mainly in the Potomac Direct Drains and Greenbrier basins. The local conservation specialist (CS) acts as the project manager and that leadership is the

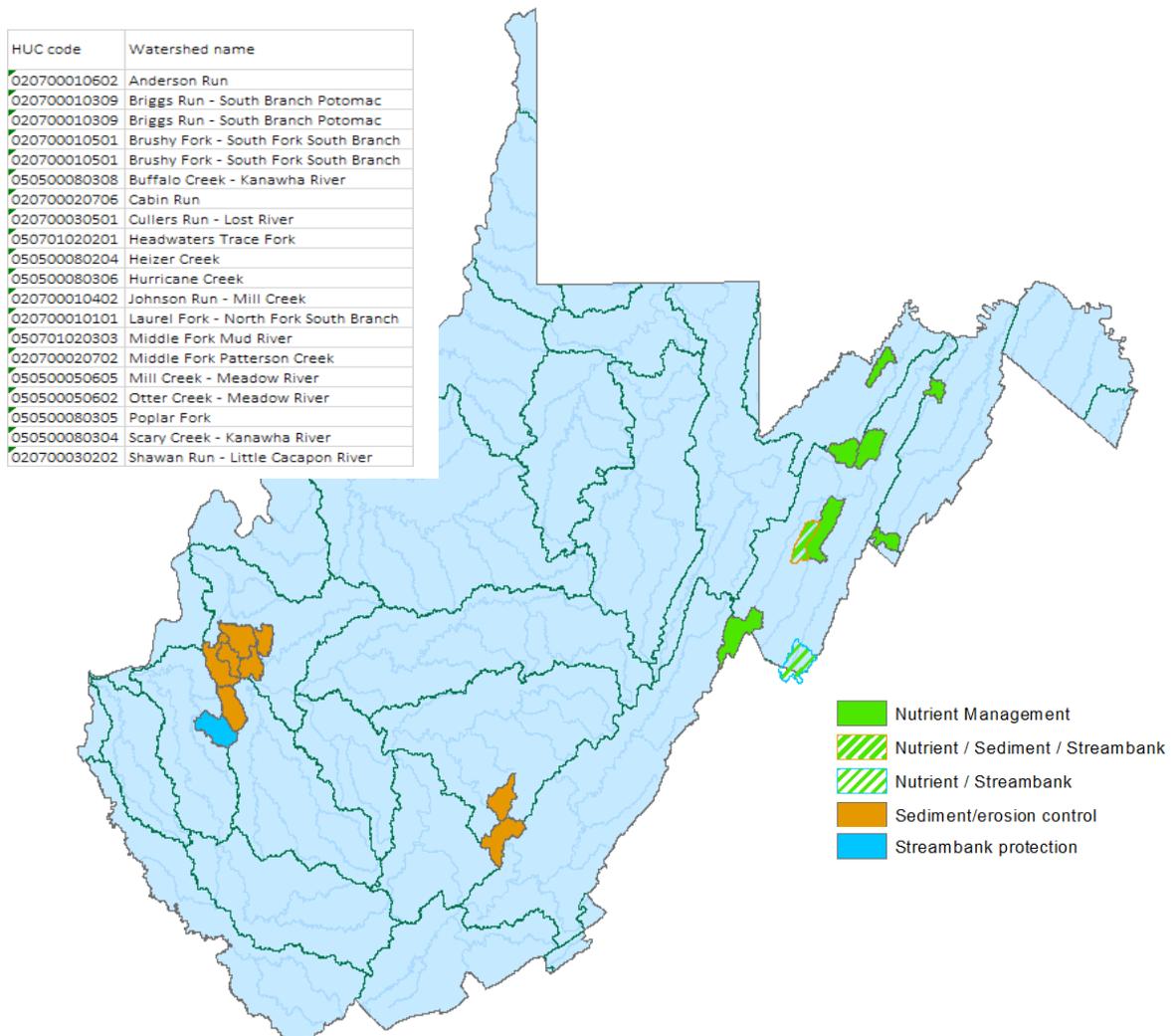
key to the success of these efforts. Currently WVCA manages five active watershed projects, (six were completed this past year). The focus is bacteria reductions through septic programs, agricultural and stormwater BMPs.

Table 4. WVCA NP funded statewide projects

Type	Quantity	Unit	Total	Pollutant	Reduction	Unit
Nutrient management	4,118.3	acres	15	Nitrogen	237,367	lbs/year
Sediment/Erosion control	25.1	acres	15	Phosphorous	172,551.7	lbs/year
Streambank protection	601	feet	3	Sediment	1,171	tons/year

The statewide projects were implemented in 18 different HUC12 basins (Figure 4). Note: In several of these, multiple types of projects were completed.

Figure 7. WVCA statewide project implementation (HUC12 basins)



Map is courtesy of John Wirts, DEPs Watershed Assessment Branch (WAB) Program Manager

NPS Management plan update

Clean Water Act § 319 guidelines require that all State NPS Programs revise their management plans (MP). WV's NPS revised MP was approved in September of 2014, one of the first to be approved in the Mid-Atlantic region. The MP includes short-term (annual) and long-term (5-10-15 years), objectives, and strategies to protect and restore water quality, strengthen partnerships, and establish a balanced approach that emphasizes statewide and watershed restoration opportunities. Table 5 shows the pollution reduction progress after only one-year. Already nutrients and sediment exceed our 5-year targets. This is largely due to WVCA's statewide programs.

Table 5. Long-term pollutant reduction progress

Pollutant	Unit	2015 data	Projected load reductions targets			Progress %
			5-year	10-year	15-year	
Acidity	tons/yr	97.4	300	600	900	32.5
Aluminum	lbs/yr	16,681	37,800	75,600	113,400	44.3
Iron	lbs/yr	32,336	95,200	190,400	285,600	34
Manganese ¹	lbs/yr	-	7,000	14,000	21,000	0
Total metals	lbs/yr	49,017	140,000	280,000	420,000	35
Nitrogen	lbs/yr	397,811	280,000	560,000	840,000	142
Phosphorus	lbs/yr	381,282	220,000	440,000	660,000	173.3
Total Nutrients	lbs/yr	779,093	500,000	1,000,000	1,500,000	155.8
Sediment	tons/yr	7,878	6,000	12,000	18,000	131.3
Fecal Coliform	cfu	9.64E+13	1.70E+15	3.30E+15	5.00E+15	5.7

1) Note: According to 6.2.d of 47CSR2 (Requirements Governing Water Quality Standards) the Manganese criteria shall only apply within 5-miles immediately upstream of known water supplies used for human consumption. In many cases this rule eliminates the need for Manganese reductions because there are no public or private water supplies within 5-miles of NPS projects.

Watershed Pilot Program

The intent of the Watershed Pilot Program (WPP) is to assist watershed groups (WGs) in managing watershed projects and improving sustainability in priority areas. In order to be considered for funding WG's completed an application and met specified criteria. The funding is only available to WGs that do not have funds to support positions related to watershed project management, planning and restoration. The NPS Coordinator developed and manages the WPP. Monthly calls are held to discuss progress, provide training and discuss other issues associated with implementing § 319 watershed projects.

In summer of 2015 the WV NPS Program awarded a total of **\$90,000 in state funds** to WGs in three priority areas. The organizations chosen were **Coal River Group (CRG)**, **Morris Creek Watershed Association (MCWA)** and **Piney Creek Watershed Association (PCWA)**.

1. CRG quickly filled the position and the person familiarized himself with the activities of the CRG and began outreach in areas associated with the **Lower Coal River watershed plan** and the FY 2016 Browns Creek septic project. He has also completed several workshops focusing on wastewater and has established relationships with affected residents and County Sanitarians.

2. PCWA had a person for a short period but unfortunately was not able to maintain the position. They are currently and aggressively soliciting candidates. They are focused on local colleges and previous natural resource interns, and are using social media outlets to advertise. PCWA is working on the massive [Piney Creek watershed plan](#), and has a \$ 319 project that was funded in 2015. The group also submitted a proposal for the 2016 grant. Their focus is metal, sediment and bacteria remediation.
3. MCWA has not filled their position. However, MCWA has established relationships with City and County officials, and have arranged office space and a benefit package. They are currently interviewing possible candidates, several of which have been employed by WVDEP. MCWA is working on the revised [Morris Creek watershed plan](#), and has a \$ 319 project that was approved in 2015. Their focus is acid mine drainage (AMD) remediation.

Chesapeake Bay Program

Table 6. WV's pollutant reduction goals for the Chesapeake Bay

Pollutant	Category	Baseline	Progress 2015	Targets	
				2015	2017
Nitrogen	Agriculture	1,330	1,208	1,240	1,215
	Urban runoff	400	436	395	390
	Wastewater + CSO	131	126	126	124
	Septic	85	78	90	90
	Forest+	785	773	785	785
	All sources	2,731	2,615	2,636	2,600
Phosphorus	Agriculture	278	216	244	232
	Urban runoff	58	36	47	43
	Wastewater + CSO	55	26	39	34
	Forest+	59	59	62	62
	All sources	450	336	390	370
Sediment	Agriculture	134,000	103,725	113,500	107,000
	Urban runoff	52,500	28,005	40,500	36,500
	Wastewater + CSO	400	333	700	800
	Forest+	36,000	35,322	51,500	56,500
	All sources	222,900	167,384	206,500	201,000

Note: all units are tons/year

Table 6 summarizes point and nonpoint loads delivered to the Chesapeake Bay from West Virginia's portion of the watershed. The progress as of June 2015 indicates that West Virginia is on track to meet its 2017 targets.

In 2015 a comprehensive land use assessment revealed that agricultural dominated the acres used for urban development that occurred between 2011 and 2015. In combination with cleaning up previously abandoned construction sites, the nutrient and sediment loads decreased from urban development. Unfortunately, changes in

loads from land use changes are not reflected in the sector specific loads delivered to the bay.

[WV's Chesapeake Bay Tributary Teams](#) continues to achieve programmatic milestones that may result in further nutrient and sediment reductions from urban sources. WIB Program staff and partners have developed watershed plans for **seven priority watersheds** within West Virginia's eight-county Chesapeake Bay region. Where local watershed plans and Chesapeake Bay Program priorities overlap, West Virginia is achieving the greatest efficiency of technical and financial resources.