WV Department of Environmental Protection
Division of Water and Waste Management
Watershed Improvement Branch

West Virginia §319 Program
2024 Annual Report
February 2025

https://go.wv.gov/nonpoint

west virginia department of environmental protection

Division of Water and Waste Management
Watershed Improvement Branch
Nonpoint Source Program

Nonpoint Source Program Annual Report

Submitted February 2025

Statement of policy regarding equal opportunities to use and participate in programs.

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

West Virginia's NPS Program is funded by a Clean Water Act §319 Grant administered by the EPA.

Report prepared by
Timothy Craddock, §319 Program Coordinator

Acknowledgements

Photo contributors - Callie Sams, Martin Christ, Tomi Bergstrom, Madison Ball, Michael Huff, and Timothy Craddock. WVDEP's *Watershed Improvement Branch* (WIB) §319 Program acknowledges the efforts of all staff, partners and multiple stakeholders that contributed information in this report, and those who have played roles in projects, monitoring, outreach etc. The names and organizations are too numerous to mention but if you would like to know more about the contributions in your area contact the NPS Program Coordinator at: *timothy.d.craddock@wv.gov*.

Cover Photo: Muddy Creek upstream of Martin Creek

Executive summary

The purpose of this report is to provide an overview of West Virginia's Nonpoint Source (NPS) Program activities for the past calendar year. This includes implementation summaries, staff a select partner highlights, watershed-based planning, and select project highlights from those completed in 2024. Also included is the most recent §319 success story and multiple appendices that provide additional details.

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Tables and Figures

Introduction

In 2024 West Virginia's §319 Program provided technical assistance and financial support to 82 projects ranging from general administration, grant management, outreach, planning, monitoring, and a wide assortment of implementation. Most of our projects focus on *watershed-based plan* (WBP) priority basins; however, success also occurred through our popular *additional grant opportunities* (AGOs), and our statewide partners. Many projects complement the efforts within WBPs while others were standalone projects focusing on local nonpoint source issues. Final reports for AGOs completed in 2024 are available on request. *Table 1* looks at the numbers for ALL projects. Additional details are available in the appendices.

***Table 1**. §319 Program/Project summary*

Federal Fiscal years	2020	2021	2022	2023	2024
§319 allocations	$1,806,000	$1,855,200	$1,855,000	$1,925,500	$1,882,000
§319 funds spent	**$1,555,611**	**$1,065,615**	**$535,940**	**$113,291**	**$8,795**
Funding	86.1%	57.4%	28.9%	5.9%	0.5%
§319 projects	**19**	**17**	**14**	**19**	**13**
Nonpoint	4	3	4	4	6
Nonpoint (AGOs)	6	3	4	8	TBD
Watershed	9	11	6	7	7
Completed projects	**16**	**2**	**1**	**0**	**0**
Projects	84.2%	11.8%	7.1%	0.0%	0.0%
Spending	86.1%	57.4%	28.9%	5.9%	0.5%
Grant expiration	Sep-24	Sep-25	Sep-26	Sep-27	Sep-28
Cancelled §319 projects	2	1	1	0	1

Implementation

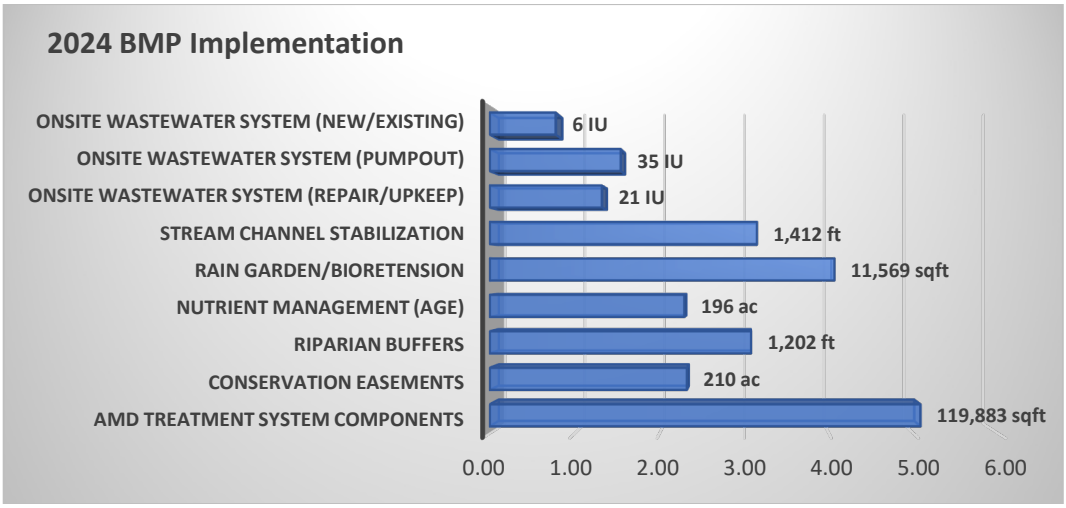
Best management practices and load reductions

The major goal of most §319 projects is the implementation of the best and most effective best management practice (BMP) that will reduce the target pollutants and be easily maintained throughout their lifespan. This maintenance is critical to the project's success, but unfortunately, there is not sufficient funding to support the necessary upkeep. Partners and program managers must often get creative and leverage funding from a wide variety of non-federal sources to maintain treatment systems. The buy-in to this process is important to long-term success.

In 2024 BMP implementation occurred in 28 HUC12 size basins [*Figure 3*]. Overall BMP implementation is also represented graphically in *Figure 1*. Figure 1 compares major categories using a log(n) calculation. Additional details are provided in *Appendix 2*. Most of the agricultural efforts are a result of implementation through WV Conservation Agency's (WVCA) *Agricultural Enhancement* (AgE) Program as well as their efforts in priority basins.

The focus of most of WVCA's watershed projects is bacteria reduction, while the AgE implementation targets nutrients through nutrient and pasture management practices.

Figure 1. §319 2024 BMP implementation



2024

BMPs	Installed	Log(N)
AMD treatment system components	119,883	5.08
Conservation easements	210	2.32
Riparian buffers	1,202	3.08
Nutrient management (AgE)	196	2.29
Rain garden/bioretension	11,569	4.06
Stream channel stabilization	1,412	3.15
Onsite wastewater system (Repair/Upkeep)	21	1.32
Onsite wastewater system (Pumpout)	35	1.54
Onsite wastewater system (New/Existing)	6	0.78

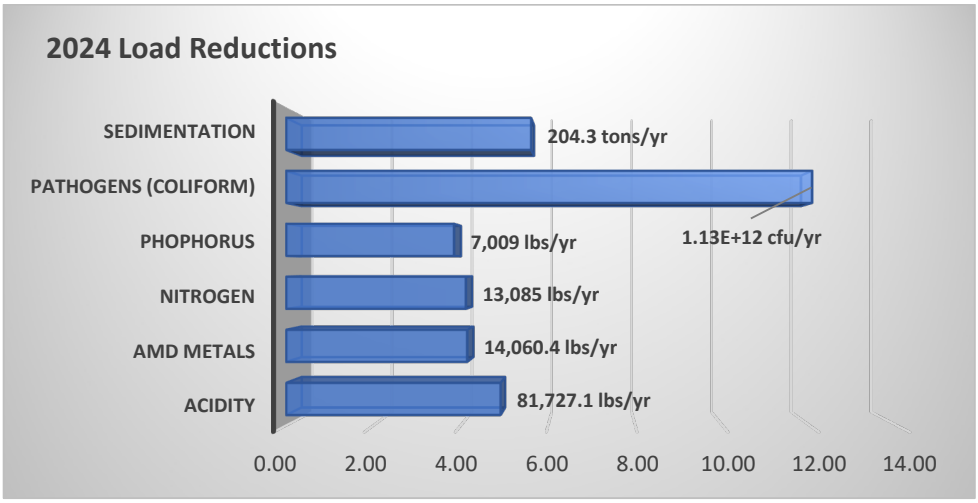
2023

BMPs	Installed	Log(N)
AMD components	278	2.4
Onsite wastewater systems (Pumpout)	98	2.0
Onsite wastewater systems (Repair/Upkeep)	91	2.0
Stormwater	194.4	2.3

Overall BMP implementation increased compared to the previous year. Additionally, lingering pandemic impacts are less of a factor, except for increased costs.

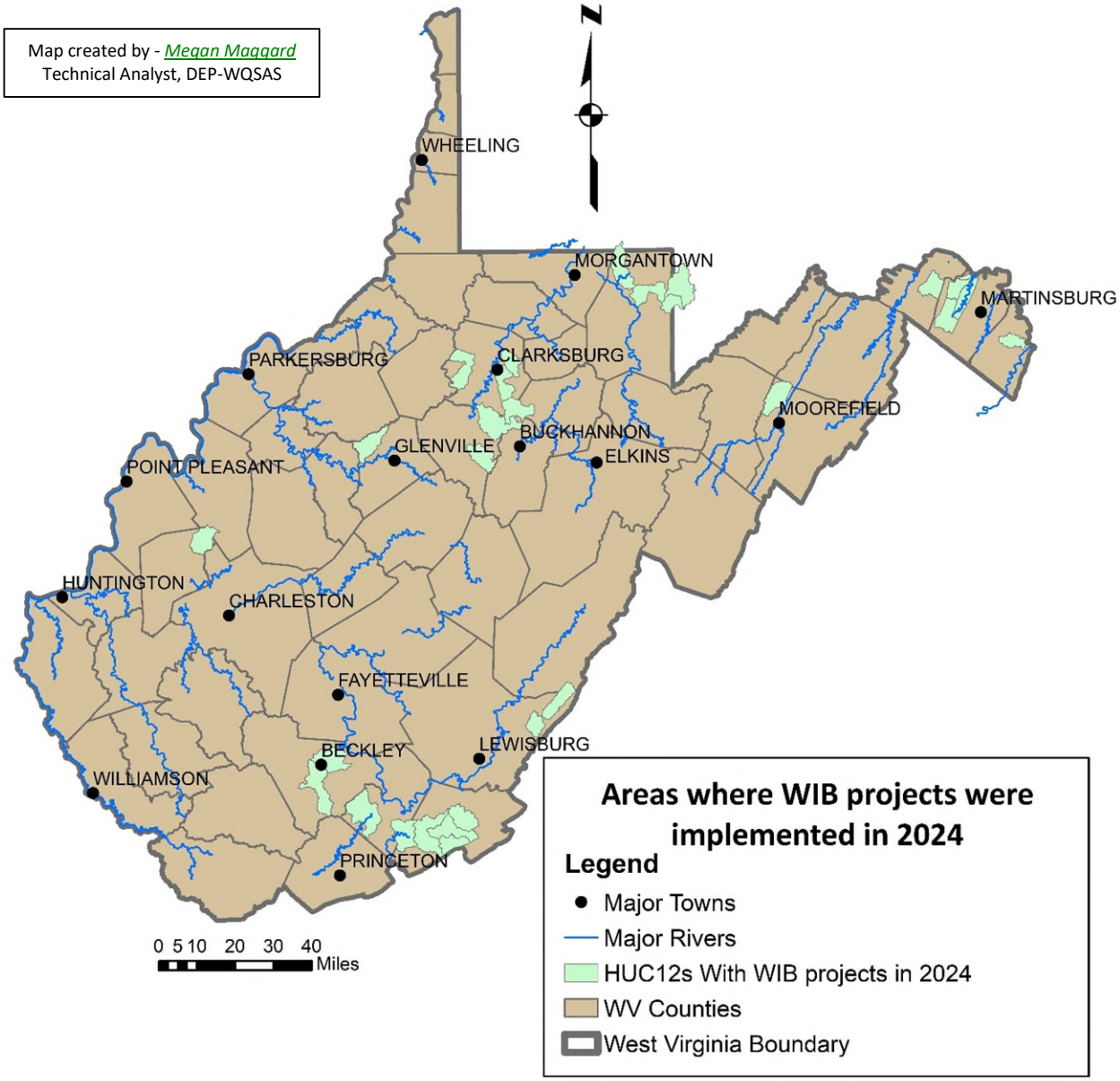
The load reduction (LR) details are available in *Appendix 3*. The largest contributor to nonpoint source (NPS) pollution in West Virginia is bacteria, primarily from failing septic systems and agriculture runoff, as well as acidity and metals from abandoned mine lands. These two together account for approximately 70% of the NPS impairments. The table below shows the LRs achieved in 2024.

Figure 2. §319 2024 load reductions achieved.



The load reductions achieved in 2024 contributed more than the previous year towards the pollution reduction goals of West Virginia's Nonpoint Source Management Plan (NPSMP). See the table in *Appendix 5* for more details.

Figure 3. HUC12 sized basins where §319 project activity occurred in 2024



Chesapeake Bay Program

West Virginia's Chesapeake Bay (CB) Tributary Team partners continue to work on nitrogen and phosphorus reductions for the CB TMDL. Our partners implement NPS strategies from the *Phase 3 Watershed Implementation Plan* (WIP), such as stream restoration, cattle exclusion with riparian buffer planting, and stormwater management practices, which achieve local benefits while reducing nutrient loads. The wastewater strategy has largely been implemented and is focused on holding the line. In 2022, WVDEP began partnering with Chesapeake Bay Trust (CBTrust) to apply federal project funds to the Green Streets, Green Jobs, and Green Towns grant program for West Virginia applicants. Seven West Virginia projects were funded this year through this program. In 2024, the WVDEP and CBTrust partnership continues to develop as we have funded 12 projects including conceptual plannings, engineered designs, and community greenings.

Table 2 shows historic, recent and WIP3 (goal) loads of total nitrogen and total phosphorus. Modeled progress during the 2024 progress year (July 2023 - June 2024) is still dampened due to the expiration of some practices once they reach their modeled lifespan.

***Table 2**. WV's progress toward reducing CB pollutants.* *Units - million lbs/yr*

Pollutant	Category	2013 Progress (Baseline)	Progress 2023	Progress 2024	WV WIP3 goal
Nitrogen	Agriculture	3.30	3.21	3.18	2.98
	Urban Runoff	1.19	1.23	1.24	1.17
	Natural+Deposition	2.60	2.58	2.57	2.58
	Septic	0.33	0.35	0.35	0.34
	Wastewater+CSO	0.70	0.41	0.45	0.64
	All Sources	8.12	7.78	7.79	7.71
Phosphorus	Agriculture	0.14	0.12	0.12	0.09
	Urban Runoff	0.06	0.06	0.06	0.05
	Natural+Deposition	0.21	0.20	0.20	0.19
	Septic	0.00	0.00	0.00	0.00
	Wastewater+CSO	0.14	0.04	0.04	0.06
	All Sources	0.55	0.42	0.42	0.39

All results are from the CAST model, available at *http://cast.chesapeakebay.net*

Basin Coordinators, WIB Programs and WVCA highlights

WIB staff and our internal and external agency partnerships are critically important to the success of West Virginia's NPS Program. We rely heavily on the personalities and knowledge of everyone to deliver our program to those who need it most. We understand there are still many that can use our services, and we will continue to strive to deliver those, especially to underserved areas.

It is important to note that several staff positions have been vacant for the majority of 2024. This includes the Potomac and Southern Basin Coordinators (BC's), the Stream Partners Program Coordinator, and our Watershed Coordinator Jennifer Pauer who retired following 25+ years of service. Jennifer managed the CB Program and supervised multiple BC's. Current staff, the Western BC, Save Our Streams Coordinator and the NPS Coordinator have been performing much of the duties associated with these vacant positions. We expect to fill many of the vacancies sometime in 2025.

WV Conservation Agency

The *WV Conservation Agency* (WVCA) remains the primary entity responsible for the implementation of the West Virginia agriculture and construction components of §319 Nonpoint Source (NPS) Program and for coordinating and implementing water quality improvement projects statewide. The WVCA develops WBPs in priority watersheds and in most cases WVCA's conservation specialists act as project

managers for §319 projects within their districts. WVCA also provides a wide variety of technical information and assistance to landowners, state and federal agencies, watershed groups, conservation districts, and others in the selection of BMPs to protect the natural resources of the state. WVCA is governed by the State Conservation Committee (SCC).

WVCA works closely with the *14 Conservation Districts* (CDs) for administration of various programs and provides administrative and technical support to the CDs through staffing. The role of CDs is to coordinate assistance from all available sources—public and private, local, state, and federal to develop locally-driven solutions to natural resource concerns. To assist with BMP implementation, CDs offer equipment rental and keep stock of various products that are available for landowner purchase.

Technical assistance was provided to 239 cooperators in ten different priority watersheds. This assistance included septic programs, fencing, tree canopy expansion, alternative livestock water, and conservation easements. Outreach/education was provided to more than 400 participants on implementation of BMPs to reduce the effects of the drought. Those practices included but were not limited to reseeding of feeding areas and rotational grazing. Assistance was also provided for District field days related to soil sampling and WVCA programs.

Northern Basin

BRWA volunteers constructing a "flow-pipe" flow monitoring system for an acid mine drainage source in the Buckhannon River watershed.

The Northern Basin Coordinator (NBC) Martin Christ supported subgrantees in the Northern Basin of West Virginia with advice, information, and assistance with data collection and quality assurance. He also aids in maintaining records of BMPs and load reductions in GRTS, attended the regional NPS Conference, and helped to develop several quality assurance project plans (QAPPs). Note: The NBC takes a lead role in our QAPP approval and training processes.

The partners that the NBC worked with included WVU's *West Virginia Water Research Institute* (WVWRI), *Save the Tygart Watershed Association* (STTWA), *Buckhannon River Watershed Association* (BRWA), *Guardians of the West Fork* (GWF), *Friends of the Cheat* (FOC), *Friends of Deckers Creek* (FODC), *Friends of Blackwater* (FOB), *Buckhannon River Watershed Association (BRWA)*, the *Wheeling Creek Watershed Alliance* (WCWA) plus a variety of agencies and others.

Planning and Implementation

- Identifying, planning, carrying out, and recording data for maintenance of past projects built by WVWRI and BRWA.
- Participating in drafting applications for matching grants for AMD projects.
- Summarizing for BRWA the current state and next steps required for two NPS Watershed Projects and two NPS Program projects.
- Monitored Bull Run for fecal coliform bacteria with BRWA.
- Wrote and reviewed outreach documents concerning water quality in the Bull Run watershed and in the Buckhannon River watershed.
- Advised FOB about completing two NPS watershed projects.

- Assisted in drafting a Request for Proposals (ROPs) to procure an engineer for an FOB NPS project.
- Performed final inspections for two completed NPS projects for FOC.
- Advised FODC concerning the timing of their work on NPS projects.
- Advised the GWF on procuring a surveyor for the Lambert Run 4 project, and planned Lambert Run Sites 4, 7, and 8.
- Oriented engineers to projects in the Roaring Creek watershed for STTWA.

Outreach and Education

- Presented information about Glenns Run to stakeholders at a tour of water quality issues convened by the WCWA.
- Demonstrated water quality monitoring at a Watershed Day carried out by GWF.
- Participated in a demonstration stream monitoring event with STTWA for Grafton High School.
- Coordinating a series of webinars about NPS to fecal coliform pollution.
- Teaching and testing aquatic science knowledge for the West Virginia Envirothon.
- Teaching watershed science and West Virginia Senior Conservation Camp.
- Teaching watershed science at the Water Explorers Camp.

Western Basin

The Western BC (WBC) Tomi Bergstrom provides technical assistance, helps with planning, grant writing and performs a tremendous amount of outreach statewide due to her Project WET Coordinator position. The WBC worked with a wide range of partners and WGs, but was especially involved with *Coal River Group* (CRG) and *Fourpole Creek Watershed Association* (FCWA) as they completed their 319 projects and submitted a watershed based plan, respectively. She also provided technical assistance to *Friends of the Tug Fork River* on their draft WBP. She also manages the rain garden as the WVDEP headquarters and hired a summer intern to assist with the outreach requests and workload.

Cy Pres

Photo of Morris Creek before and after

Six watershed groups in the impacted area of the Elk River chemical spill on January 9, 2014, received $105,142 in January of 2022 through a federal order to implement watershed improvement projects within their basins. Three groups have completed their projects: 1) *Morris Creek Watershed Association* (MCWA) with a streambank erosion and channel project, 2) *Davis Creek Watershed Association* (DCWA) with a septic replacement project, and *Buffalo Creek Watershed Improvement Association* with a stream habitat rehabilitation project. CRG is nearing completion of their streambank restoration project. *Paint Creek Watershed Association* (PCWA) is partnering with the WVCA to install stream

structures and the FCWA has replaced multiple septic systems and are now working with the Marshall University Engineering Department to have students design an infiltration trench for a large dog park on the hillside of Ritter Park.

Project WET

As part of the *Project WET* (Water Education Today) Program, the WBC certified 102 educators in various Project WET Curriculum Guides, including stipends and supplies for wetland education through an EPA Wetland Development Grant. She reached over 3,000 students, teachers, and citizens of West Virginia with outreach events at Water Explorers STEAM Summer Camps, WV Envirothon, Berkeley County Youth Fair, Earth Day events, Wetland Master Naturalist Program, Camp WALDO, World Water Day events, and others. Over 1,280 students were reached through programming conducted at *Water Festivals* across the state.

Chesapeake Bay Analyst

This position was created and filled in October 2024. The position combined the duties of the Urban BMP Specialist (Formally the Stormwater Specialist role) and the Chesapeake Bay Technical Analyst duties of the Potomac BC. The Chesapeake Bay Analyst (CBA) provides technical assistance for regulated and unregulated urban stormwater management by promoting low impact development (LID) and BMPs. The CBA works with stakeholders to reduce the amounts of nitrogen, phosphorus, and sediment delivered to the Bay. This includes the collection, verification, submission, and analyzing of BMP data utilized in the Chesapeake Assessment Scenario Tool (CAST) model. The position is funded through the Chesapeake Bay Regulatory and Accountability grant. The CBA represents WVDEP's interests in the urban stormwater workgroup (WG), watershed technical WG, modeling WG, land use WG, and any additional CB Program meeting.

- Planning and Implementation: The CBA provided technical assistance to several local governments and NGOs to promote adequate implementation of BMPs and to ensure LID in the first place. Collaboration with the CB Trust resulted in multiple projects being funded for planning, engineered designs, or implementation. The CBA verified and reverified the occurrence and function of stormwater treatment/runoff reduction BMPs for the CBP. Additional BMP information was collected and QA/QC from partners to submit to the CBP.
- Outreach and education: The CBA attended Region 8 Planning Commission meetings and other events to promote adequate stormwater management through LID. Local governments were contacted and encouraged to participate in the Division of Forestry Tree City USA program. The CBA participated in a tree maintenance presentation at the Romney Middle School, co-taught an environmental class for the Hampshire County 4H, and cohead a WVDEP booth at the Cacapon Riverfest.
- §319 Program: The CBA has provided guidance on several current and potential future §319 projects.

BC Joint Efforts

BC's have been working together to provide technical assistance in their area of expertise to watershed groups until vacancies have been filled. They each hosted a regional watershed group gathering with support of the *WV Watershed Network* (WVWN) and helped run the WV Envirothon Aquatic station with the leadership of the SOS Coordinator. The Stream Partners VISTA Program is offering additional support to watershed groups in each basin and BC support and partner with the VISTAs on the work in their respective basin. *Learn more about the VISTA's here*.

WV Save Our Streams

A workshop participant uses the SOS guides to identify benthic macroinvertebrates in Evitts Run in Ranson and Charlestown.

In the calendar year for 2024, the *WV Save Our Streams* (SOS) Coordinator led five *WV Vernal Pool Program* workshops, 17 SOS workshops, and participated in 11 outreach events. The spring vernal pool workshops taught 115 participants how to identify and evaluate ephemeral wetlands in West Virginia. Workshop locations include the WV Botanic Garden, Fort Mill Ridge Wildlife Management Area, Kanawha State Forest, New River Gorge National Park, and Cranberry Mountain Nature Center. The WV Vernal Pool Monitoring Program was developed in partnership with the WVDEP Water Quality Standards and Assessment (WQSAS), WVDEP-WIB, WV Division of Natural Resources, and US Geological Survey Amphibian Research and Monitoring Initiative via a USEPA Wetlands Program Development Grant.

1. In the Northern Basin, six workshops were held, including the Middle Fork River in Barbour County at Audra State Park, Blackwater River at Canaan Valley State Park, Waddles Run of Wheeling Creek at Oglebay Schrader Environmental Education Center, Left Fork of Files Creek in Tygarts Valley River watershed, Morgan Run of the Cheat watershed and Keith Fork of Skin Creek in West Fork watershed.
2. In the Eastern Panhandle, SOS hosted five training workshops: on Opequon Creek in Bunker Hill with Blue Ridge Community & Technical College and City of Martinsburg Stormwater Dept., Evitts Run with Ranson Community Garden, North Fork South Branch of the Potomac at Seneca Rocks with U.S. Forest Service staff and AmeriCorps members, Town Run in Shepherdstown, and Indian Run in Sleepy Creek watershed at Cacapon State Park with Cacapon Institute's Stream Scholars Camp.
3. In the Southern Basin, the SOS program held three training workshops, including the Gauley River in Webster County at WV State Conservation Camp at Camp Caesar, Piney Creek with the Master Naturalists, New River Gorge National Park staff, *Plateau Action Network* (PAN), and *Piney Creek Watershed Association* (PCWA), and Second Creek with WWCA staff.
4. In the Western Basin, the SOS program held three SOS workshops on Davis Creek with the DCWA and the WVDEP summer interns, Hughes River with the Mid-Ohio Valley Master Naturalists at North Bend State Park, and on the Little Kanawha River with Glenville State University.

Additionally, the SOS Coordinator participated in 11 outreach events, providing stream ecology and water quality education to a wide range of audiences in West Virginia. Events included the inaugural Appalachian Fly Fishing Festival, Water Explorers Camp with National Youth Science Academy, Adventure Pocahontas school programming, Forks of Coal Water Festival, WV Envirothon Teacher Training and Competition, Leading Creek Elementary School's World Water Day, and the West Virginia Science Teachers Conference. In total, SOS outreach education reached nearly 1,200 individuals across the state.

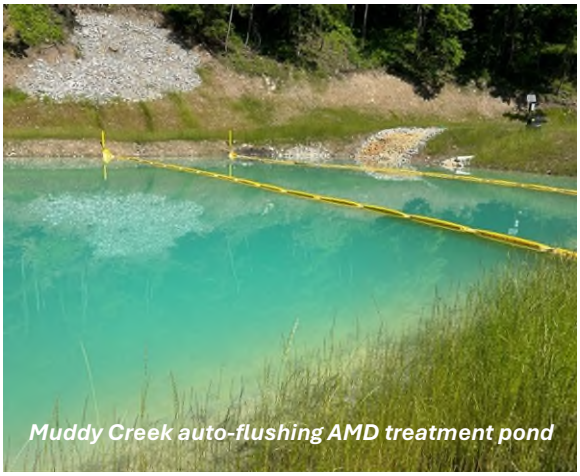
Workshop participants conduct chemistry and physical tests on Davis Creek at Kanawha State Forest.

The SOS Coordinator serves as the Education Committee Co-Chair for the *West Virginia Envirothon* competition, a statewide competition for high school students. The winning team competes at the national competition and receives scholarship awards to go toward college education. The SOS Coordinator leads the WV Envirothon Aquatics Team and participates in teacher training and team training events.

The SOS Coordinator is working with the *Chesapeake Monitoring Collaborative*, the Virginia Institute of Marine Science, and WVDEP colleagues to upgrade the Volunteer *Volunteer Assessment Database* (VAD) so that it aligns with the *Chesapeake Bay Data Explorer*. The new platform will better serve volunteer water quality monitoring organizations across the state of West Virginia and allow water data to be easily shared and utilized by the public and partner organizations. The SOS Program Coordinator looks forward to the continuing success of the SOS program in 2025 and beyond.

To learn about all WVDEP's Watershed Improvement Branch Programs go to: *https://go.wv.gov/wib*

Nonpoint Source Management Plan updates



Muddy Creek auto-flushing AMD treatment pond

The current Nonpoint Source Management Plan (NPSMP) was extended by one year, and a revised management plan was submitted to the EPA in the fall of 2023. Reviews are currently underway. The NPSMP progress was evaluated several years ago, and an update is provided in *Appendix 4*.

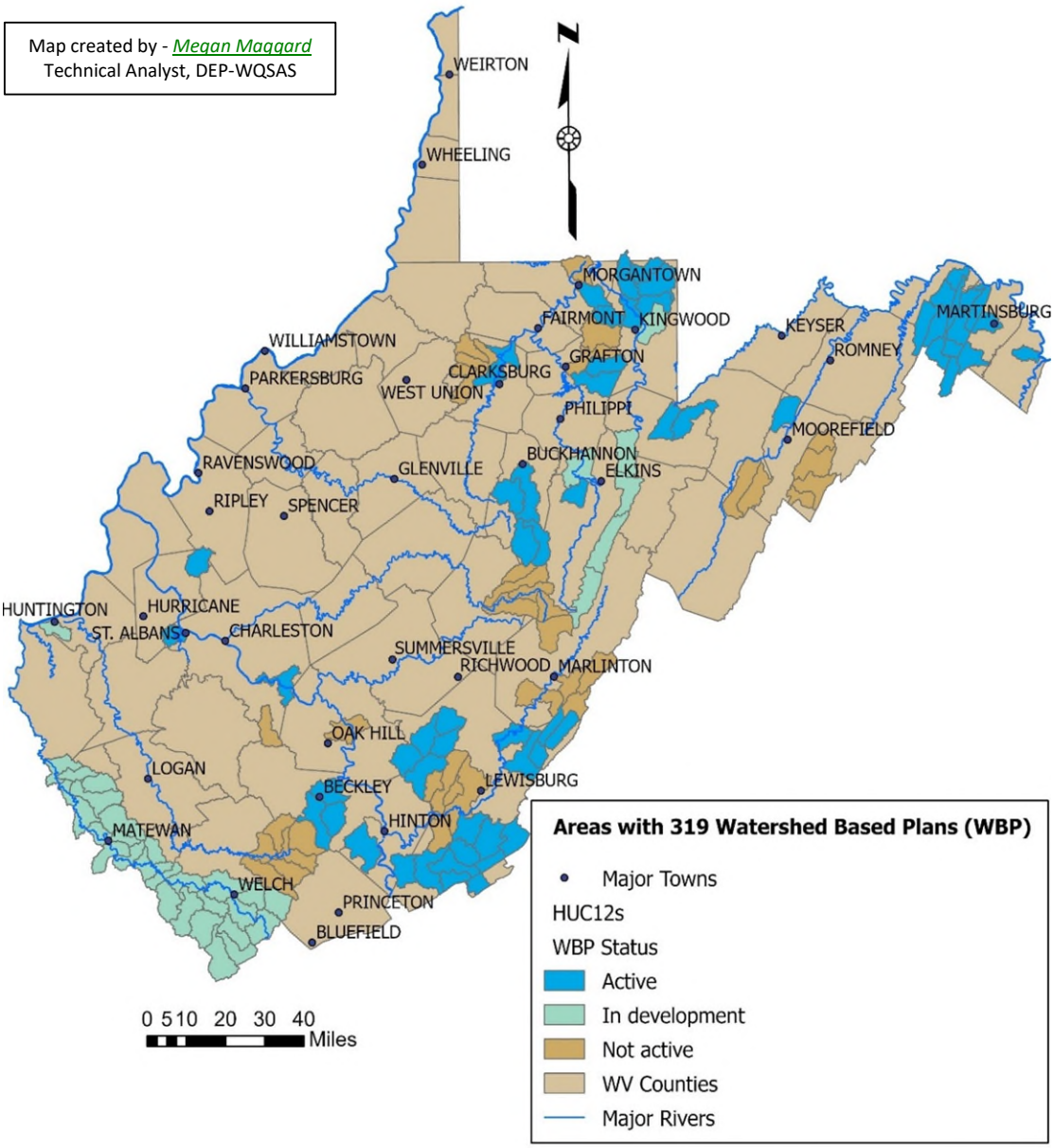
West Virginia's NPS Program has achieved 4 of 6 of the goals established for the pollutant categories (*Appendix 5*). These targets are based on an assessment of previous years as well as future projections. Without the pandemic years my confidence is high that all targets would have been met. There may have been other factors that contributed to the underperformance of projects but those are unknown at this time. Moving forward, evaluating our processes earlier will likely improve results. In 2024 we are already seeing improved results, as load reductions and BMPs implementation increased by 67% from the previous year.

2024 §319 Tours

On June 4th and 5th 2024 representatives from WVDEP-WIB in coordination with our partners FOC and FODC hosted EPA Region III and guests on a tour of §319 project sites. Most of the sites were acid mine drainage treatment systems, both active and passive, plus a few future sedimentation projects. A map, photos and a summary of the tour sites are provided *here*.

Watershed-based plans

Figure 4. West Virginia §319 watershed-based plans



West Virginia has a renewed commitment to watershed planning, especially healthy watershed opportunities. There is at least one WBP being developed for our active award from FY22 – FY24, and one of those will include a protection focus. In years to come WV's NPS Program will partner with agencies and others to develop additional *watershed protection plans* (WPPs). We are currently exploring the potential of WPPs adjacent to and/or including *Wildlife Management Areas* (WMA's). Approximately 35-40% of the WMA's have potential for WPP development

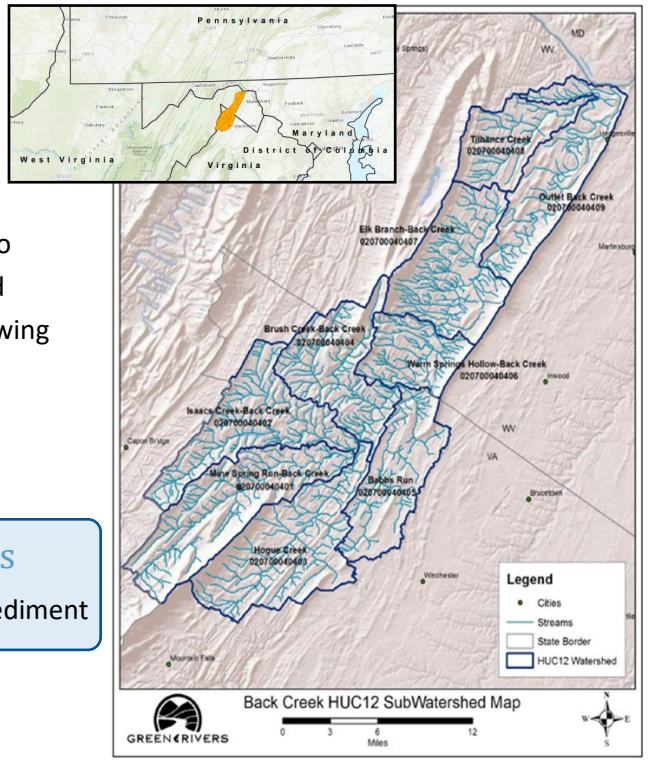
All of West Virginia's §319 WBPs are posted on the revised NPS Program's *watershed-based plan website*. The Back Creek WPP was presented at the 2024 regional NPS conference and is highlighted in this report. The presentation is available upon request.

West Virginia Conservation Agency

Back Creek Watershed

Berkeley & Morgan Counties, WV

- Empties into Potomac River
- Flows north from Frederick Co., VA
- 274 square mile drainage area
- Unique shale barren ecosystems with multiple rare, threatened, and endangered species
- Currently unimpaired
- Watershed Protection Plan approved in 2014; strategies to protect and restore watershed
- Berkeley County is fastest growing county in state



Project Highlights

- Conservation easement purchases (251 ac)
- Natural stream restoration (1,851 linear ft)
- Porous pavers (1,100 sq ft)
- Forestry workshop
- Water monitoring

Reductions

- 416.21 tons/year sediment

Phase I
2012—2014

- Watershed Protection Plan developed, stream restoration sites identified.

Federal 319	$30,000
Match	$20,000
Total	$50,000

Phase II
2016—2019

- Conservation easement purchases, stream restoration.

Federal 319	$209,450
Match	$221,689
Total	$431,139

Add'l Grant Opportunity
2017

- Porous pavers.

Federal 319	$20,000
Match	$14,000
Total	$34,000

Phase III
2018—2022

- Conservation easement purchases, stream restoration, forestry workshop.

Federal 319	$263,071
Match	$176,733
Total	$439,804

Phase IV
2021- 2024

- Conservation easement purchases.

Federal 319	$156,000
Match	$162,824
Total	$318,824

Partnerships

- WV Conservation Agency
- Eastern Panhandle Conservation District
- Berkeley County Farmland Protection Board
- WV Division of Forestry
- WV Division of Natural Resources
- US Dept of Agriculture
- Berkeley County Extension
- Blue Heron Environmental Network

Watershed project highlights

In this section we highlight three completed watershed projects and one success story. The watershed projects include AMD remediation, agricultural implementation, and on-site wastewater rehabilitation. The 2024 success story tells of an improving stream devasted by many years of AMD damage.

Pipestem Creek

Pipestem Creek in Summers County of West Virginia is a tributary of the Bluestone River. This stream is impacted by cattle and other livestock feeding near the stream and other surface waterways. Agriculture in this area consists primarily of beef cattle and some horse production.

Problem

Pipestem Creek was put on the 303(d) list in 2006 due to high concentration of fecal coliform bacteria. Source tracking indicated several beef cattle farms throughout the watershed and failing septic systems, which drained directly into tributaries of Pipestem Creek.

The main goal of this project is reduction of fecal coliform loads through the implementation of nutrient management plans and grazing plans, as well as 15 septic pumping's and 10 septic repairs.

Figure 5. Pipestem Creek watershed

Project highlights

Project results included the development of one nutrient management plan and two grazing plans, along with fencing to facilitate rotational grazing and exclude woodlands and tributaries. A total of 1,454 feet (ft) of woodland exclusion fence and 5,278 ft of pasture division fence were constructed. Two alternative water systems were established, which included two pumping plants for water control, six water troughs, and heavy use areas, along with 3,199 ft of pipeline. An additional water trough will be placed with a feed pad which is to be constructed in the fall of 2025 utilizing alternative funding.

Two farms with various cattle operations received assistance, impacting approximately 39.5 animal units on the first farm and about 8.9 animal units on the second farm. The total acres was 75.2. In the near future the nutrient reductions from these practices will be determined.

***Table 3**. Pipestem Creek BMPs implemented and load reductions achieved*

BMPs	Unit planned	Units achieved	LR goal	LR achieved	% Achieved
Nutrient management and other Ag BMPs	1 farm	1 ½ farms	6.06E+11	9.76E+11	161%
Septic pumpout	10	7	4.15E+10	2.90E+11	70%
Septic repair/replace	15	5	2.49E+11	8.30E+11	33%

Fencing is established as part of the nutrient management plans.

Woodland exclusion fence

Pasture division fence

Partners and funding

The project was managed by the WVCA through a sub-grant provided by WVDEP's NPS Program. The Southern CD was the local contact and housed WVCA's conservation specialist that managed the project. Other partners included local landowners, the Natural Resource Conservation Service (NRCS), the Summer Conty Health Dept. (SCHD) and Concord College. NRCS provided technical support and recommendations to WVCA regarding the types of BMPs, The SCHD provided oversight regarding the septic portion of the program, and certified installations. Concord College leads the monitoring efforts, which are on-going.

***Table 4**. Final Pipestem Creek project budget*

§319 funds	Match	Total	Amont spent
$117,663	$91,950	$209,613	$84,503
	Remaining Balance		$33,160

Anthony Creek

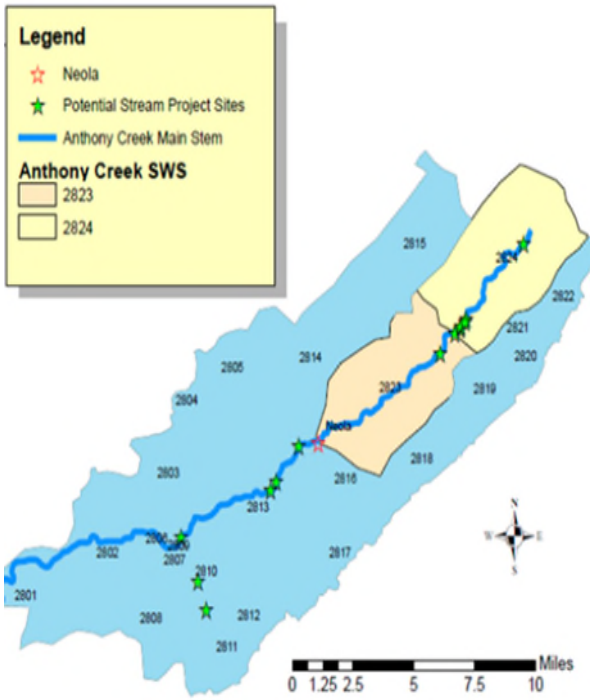


***Figure 6**. Anthong Creek watershed and project areas.*

This project is located within the Anthony Creek watershed, spanning Greenbrier and Pocahontas Counties in West Virginia. Anthony Creek served as a significant tributary to the Greenbrier River, with its confluence situated just upstream of the source water protection area for Lewisburg. Most of the watershed is composed of National Forest, private forest land, and uninhabited areas. Human impact in the Anthony Creek watershed is primarily concentrated in the more populated regions.

Problem

Anthony Creek was listed on the 303(d) list in 1996 due to fecal coliform bacteria contamination from unknown sources. In 2008, a Total Maximum Daily Load (TMDL) study was conducted for Anthony Creek, which assigned fecal coliform load limits to agricultural land and failing onsite sewage treatment systems. Source tracking revealed several beef cattle farms within the watershed that exhibited streambank erosion.

Additionally, the soil in these riparian areas showed elevated levels of fecal coliform bacteria, resulting from years of manure deposition by livestock. The objectives of this project were to decrease fecal coliform and sediment loading in Anthony Creek

Project highlights

During the grant period, two septic systems were replaced, and one septic system was pumped, which accounted for 17% of the septic load reduction goal. Outreach efforts in the Anthony Creek area were challenging due to absentee landowners and unwilling participation. Luckily the septic portion of the project was the initial focus and because of the limited number of septic projects, the proposal was amended to reallocate funds from septic initiatives to stream restoration efforts within the grant period.

The stream restoration portion was a success. Approximately 1,200 ft of stream was restored using log vanes, toe wood, and boulders to redirect water away from easily erodible banks, effectively stabilizing the eroded areas. This amount nearly doubled the original expectation of saving 100 tons, thus achieving an impressive load reduction goal.

***Table 5**. Anthony Creek BMPs implemented, and load reductions achieved*

BMPs	Unit planned	Units achieved	LR goal	LR achieved	% Achieved
Stream restoration	1,412 ft	1,200 ft	1.02E+10	4.06E+10	398%
Septic pumpout	20	1	8.30E+10	4.15E+9	5%
Septic repair/replace	8	2	1.33E+11	3.29E+10	25%

Restoration photos.

Before

After

Partners and funding

***Table 6**. Final Anthony Creek project budget*

§319 funds	Match	Total	Amont spent
$150,000	$76,840	$226,840	$114,329
	Remaining Balance		$35,671

The project was managed by the WVCA through a sub-grant provided by WVDEP's NPS Program. The Greenbrier Conservation District was the local contact and housed WVCA's conservation specialist that managed the project. Other partners included local landowners, the NRCS, Trout Unlimited (TU) and the Greenbrier County Health Dept. (GCHD). TU and NRCS provided technical support in addition on the stream restoration project, and the GCHD certified the septic installations. TU also provided monitoring support.

Muddy Creek Dream Mountain Phase II

Friends of the Cheat (FOC) has worked collaboratively with federal, state, and local agencies to restore Muddy Creek from the damaging effects of AMD since 1994. The *WVDEP Office of Special Reclamation* (OSR) has taken a new approach to restore the lower 3.4 miles of Muddy Creek by constructing the T&T active treatment facility in 2017 to improve pH between upper Muddy Creek and the Cheat River. However, the upper reaches still contributed significant metal, and acidity loads to the stream. The goal of this project was to improve the system performance by adding additional treatment and expanding the capacity of the current treatment systems. Thus far, monitoring has shown a reduction in overall metals of 85% and a 100% acidity reduction.

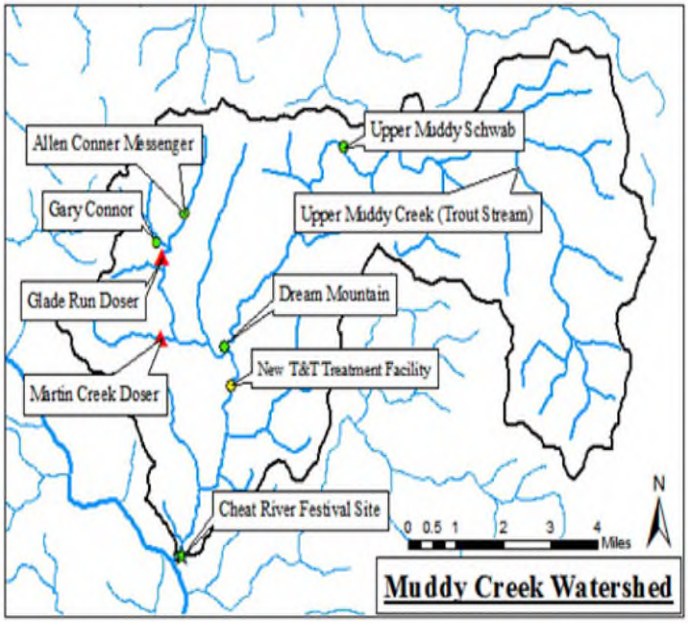


***Figure 7**. Muddy Creek watershed with key AMD treatment sites identified.*

Problem

Settling Pond during Phase II construction.

As identified under the Muddy Creek WBP, the seeps associated with the Dream Mountain site contribute the highest acidity, aluminum, and iron loadings to Muddy Creek upstream of Martin Creek. Additionally, the Dream Mountain site has the worst water chemistry combined with the largest, most variable flows that FOC has ever attempted to treat in its history as an organization. Upgrades to the Dream Mountain system are a key priority for restoration work and an absolute must for improving the lower reaches of Muddy Creek.

Project highlights

FOC procured BioMost, Inc. to design the Dream Mountain passive treatment system improvements. The design consisted of converting the existing steel slag bed into multiple auto flushing vertical flow pond filled with high quality limestone, converting the mixing basin to settling pond, and improving the existing connections between treatment components. After some preliminary design work and data collection, it became clear that the current construction budget would not suffice to complete all tasks as needed to improve the site, a trend FOC has seen routinely in recent years as costs to complete work have increased. FOC

secured matching construction funds through the *Watershed Cooperative Agreement Program* (WCAP) and *WVDEP's Office of Abandoned Minelands* (AML) Program.

Modifications of the original design were necessary. The available funds would be used to continue to rehab existing non-functioning or low-functioning treatment system components into alkalinity-generating components such as additional limestone leach beds, and/or a Jennings-Style vertical flow pond. Construction could not be completed before the end of the §319 performance period; however, all §319 funds were spent before the September deadline, and construction continued using matching WCAP and AML funding. Construction was completed in January of 2023 and since then the site has been monitored monthly.

***Table 7**. Muddy Creek BMPs implemented and load reductions*

Best management practices (Sqft)		Load reductions (lbs/yr)		% Achieved
Two Autoflushing vertical flow ponds	30,940	Acidity	79,774	98
Jenning's vertical flow pond	23,107	Dissolved Aluminum	8,232.4	100
Two setting ponds	34,927	Dissolved Iron	5,126.2	97
One polishing pond	16,819	Dissolved Manganese	252.8	59

While the system out effluent met water quality goals of 90% or greater load reductions for acidity, and dissolved metals, it has been clear after over two years of sampling this is seasonally variable, with loading reduction goals are sometimes falling below 90%. Ultimately from the efforts of the Dream Mountain Project Phase II, FOC anticipates the system out effluent will meet water quality standards for pH, iron, and aluminum and reduce loads by with consistency across all seasons and flow patterns.

Partners and funding

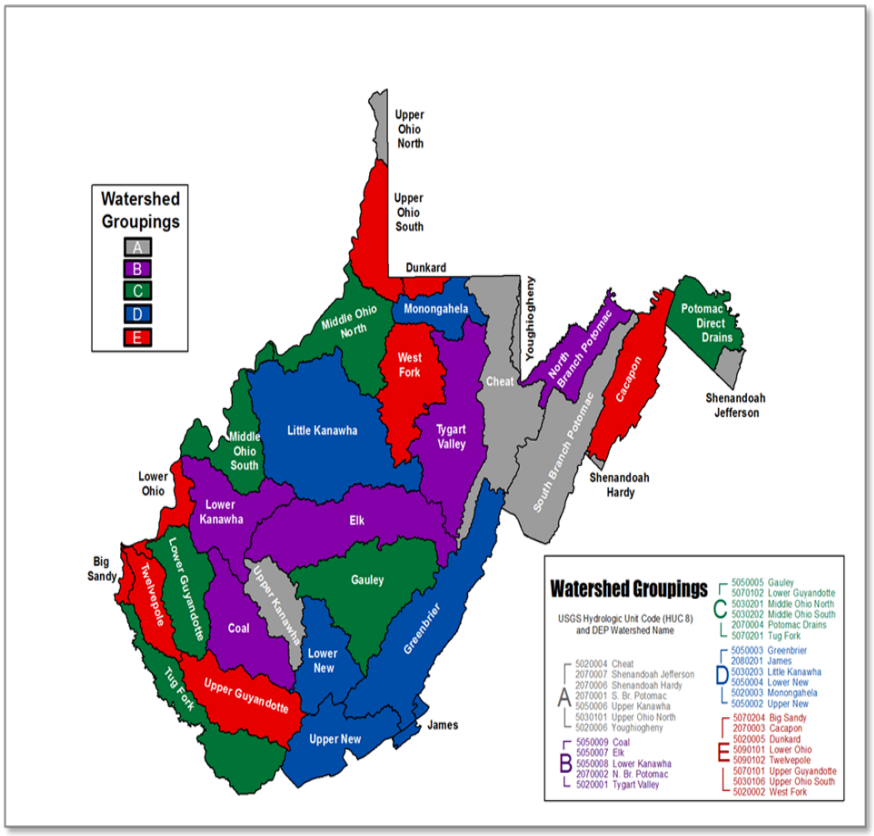
Funding was secured through the EPA's §319 funds administered by WVDEP's NPS Program, the Department of Interior – Office of Surface Mining WCAP grant and WVDEP-AML. Additional match was also provided by WVDEP-AML and FOC. The landowner of Dream Mountain provided access for construction, maintenance, post-construction monitoring and future monitoring.

***Table 8**. Muddy Creek final budget*

Line items	§319 Funds	OSM WCAP	AML (in-kind)	WVDEP AML	FOC	**Total**
Personnel/benefits	$7,493	$5,000		$5,000	$49	**$17,541**
Equipment/supplies	$232				$47	**$278**
Engineering	$105,775					**$105,775**
Construction oversight				$30,000		**$30,000**
Construction	$1,429	$95,000	$1,850	$717,300		**$815,579**
As builds						**$0**
Travel	$242				$108	**$350**
Lab fees	$3,230					**$3,230**
Operating cost	$5,321				$625	**$5,946**
Monitoring/Planning	$3,970					**$3,970**
Total	**$127,691**	**$100,000**	**$1,850**	**$752,300**	**$828**	**$982,669**

Water Quality Improvements from NPS implementation

Water quality improvements are documented and applied through a variety of programmatic methods as implemented by the WVDEP. The targeting of NPS projects for results is being tracked by the Water Quality Standards & Assessment Section (WQSAS) by active communication of project locations in a data share dashboard. This dashboard is utilized when annual monitoring efforts are developed to determine stations where pre-319 project data exists and comparable post-319 project data can be collected to show improvements. Improvements can be parameter specific to show how streams now meet numeric water quality standards, as well as benthic macroinvertebrate data to show Aquatic Life Use attainment. Other physical habitat improvements are documented such as Bank Stability or Instream Sediment levels which are resulting from 319 projects.



One example of water quality improvement from joint efforts is the proposed delisting of a 12-mile portion of Three Fork Creek in the Tygart Valley Watershed. Its **Dissolved Aluminum** as well as **Total Iron** criteria for the **Warm Water Fishery Designated Use** had been Not Meeting Attainment previously; but new data as collected by various contributors show improvement and attainment of the Designated Use and Water Quality Standards.

Selection of monitoring locations is primarily based around the rotating HUC8 basin framework as adopted by the agency where potential basins may be targeted every five years. For example, 319 project streams were considered for monitoring efforts when the New and Greenbrier River basins were planned in 2024 to 2025 sampling. Related monitoring efforts from the WVCA will supplement the monitoring efforts in these watersheds; and such 3rd party data will be submitted and used for assessment decisions in the appropriate *Integrated Reports*.

In the same mindset as many 319 projects, the WQSAS is working to implement an Advanced Restoration Plan (ARP) in select subwatersheds of the Cacapon River basin. To potentially support/develop a WBP, this and potential future ARP's will include post implementation monitoring. Current and future WIB projects will be considered in ARP development and associated monitoring as applicable. Post-TMDL monitoring also follows the rotating basin framework, where improvements from load and wasteload allocations can be documented for assessment and reporting.

Has past NPS implementation impacted water quality? Supporting evidence can be found in the supplemental categories of the *Integrated Report*. Table 9 provides a summary of selected waterbodies that were most likely influenced by NPS implementation.

***Table 9**. Waterbodies likely influenced by NPS implementation*

Stream code	Waterbody Name	Waterbody Extent Description	Parameter
WVJ-1	Potts Creek	WV/VA border at RM 47.41 to Forks	CNA-Biology
WVKN-26	Piney Creek	RM 21.3 to RM 27.7	Fecal Coliform
WVKN-26-K.5	UNT/Piney Creek RM 23.62	Entire length	CNA-Biology
WVKNG-23	Second Creek	RM 4.2 to RM 10.7	CNA-Biology
WVKNG-23	Second Creek	Mouth to RM 4.2	CNA-Biology
WVM-8	Deckers Creek	RM 18.1 to RM 20.4	Manganese
WVM-8	Deckers Creek	RM 6.2 to RM 16.2	pH
WVM-8	Deckers Creek	RM 6.2 to RM 16.2	DO
WVM-8	Deckers Creek	Mouth to RM 6.2	DO
WVM-8	Deckers Creek	Mouth to RM 6.2	pH
WVM-8-0.5A	Hartman Run	Entire length	pH
WVMC	Cheat River	RM 51.0 to Forks	Iron
WVMC	Cheat River	RM 51.0 to Forks	pH
WVMC	Cheat River	Above Cheat Lake at RM 12.6 to RM 28.6	pH
WVMC-17	Muddy Creek	RM 3.3 to RM 9.8	CNA-Biology
WVMC-17	Muddy Creek	Mouth to RM 3.3	DO
WVMC-18	Roaring Creek	RM 10.5 to HW	Aluminum-D
WVMC-18	Roaring Creek	RM 9.2 to RM 10.5	Aluminum-D
WVMC-27-A	UNT/Pringle Run RM 1.75	Entire length	Iron
WVMC-27-A	UNT/Pringle Run RM 1.75	Entire length	pH
WVMC-27-A	UNT/Pringle Run RM 1.75	Entire length	Manganese
WVMC-60-D-3	North Fork/Blackwater River	RM 2.4 to Pond at RM 3.6	pH
WVMT-12	Three Fork Creek	Mouth to RM 12.8	pH
WVMT-12	Three Fork Creek	Mouth to RM 12.8	DO
WVMTB-5	Pecks Run	Mouth to RM 2.2	pH
WVMW-16	Lambert Run	Entire length	pH
WVP-9	Sleepy Creek	RM 31.5 to WV/VA border to RM 36.2	Fecal Coliform
WVP-9	Sleepy Creek	Mouth to RM 7.7	Fecal Coliform
WVP-9-0.5A	UNT/Sleepy Creek RM 3.49	Entire length	CNA-Biology
WVP-9-E	Middle Fork/Sleepy Creek	Mouth to RM 1.2	CNA-Biology
WVP-9-G	Indian Run	Mouth to HW Lake at RM 2.0	Fecal Coliform
WVPC-24	Lost River	Mouth to RM 11.5	CNA-Biology
WVPC-24	Lost River	Mouth to RM 11.5	Fecal Coliform

NONPOINT SOURCE SUCCESS STORY WEST VIRGINIA

Lime Dosing is Improving Tributaries of Little Sandy Creek

Abstract | Water Quality | Highlights | Results | Partners & Funding

Water Body Improved

Little Sandy Creek receives polluted water from abandoned and bond-forfeiture coal mines along its tributaries, Maple Run and the Left Fork of Little Sandy Creek (LFLSC). The West Virginia Department of Environmental Protection (WVDEP) added Little Sandy Creek to the Clean Water Act Section 303(d) List of Impaired Waters in 1996 for pH and iron impairments associated with its public water supply and warm water fishery designated uses. WVDEP operates a lime-dosing station on each of the polluted tributaries (through a water-quality variance). This practice has reduced the tributary loads, and Little Sandy now meets standards for dissolved aluminum and pH. The WVDEP Nonpoint Source Program supported construction of a treatment plant that will further reduce the iron load in LFLSC.

Contact
Kelley Flaherty, Executive Director
Save the Tygart Watershed Association

Click-Here to read the full story.

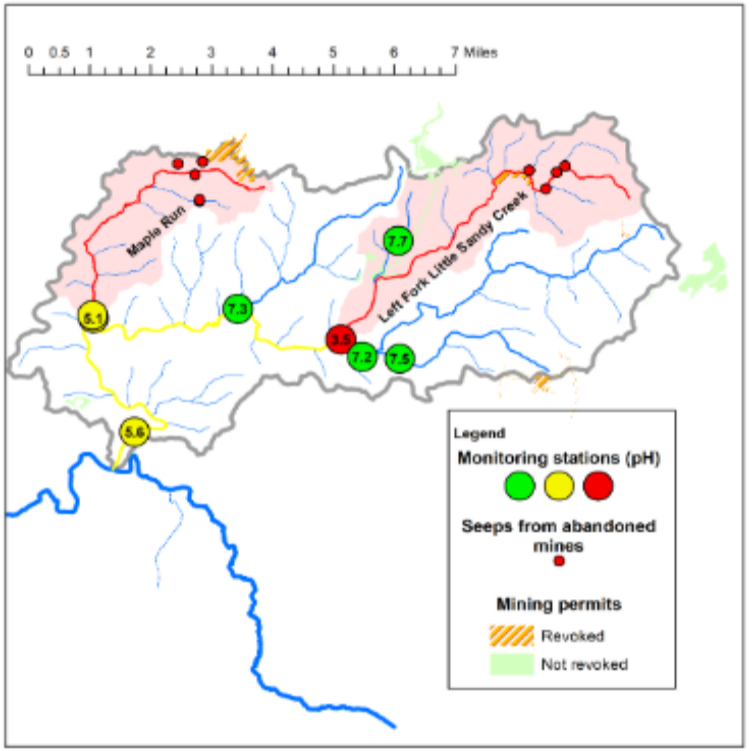


Figure 8. AMD from abandoned mines and from mines with revoked permits (bond forfeitures) pollute Maple Run and the Left Fork of Little Sandy Creek. These tributaries drain to Little Sandy Creek, which fail to attain pH 6, which is the minimum level required by state standards, even though York Run, which drains to Little Sandy Creek between Maple Run and the Left Fork, adds water that does meet the standard.

Appendices

Appendix 1. Project status FY20-FY24

2024

Watershed	*Organization*	*Project*	Allocation	Amount Encumbered	Amount Spent	Project Balance	Match Budgeted	Match Spent
Program	A-EPA	WV Allocation	$665,350				$517,529	
	CRG	Watershed Pilot Program		$22,500	$1,875	$20,625	$15,061	
	DEP	NPS Statewide Program		$408,539		$408,539	$415,935	
	FotTFR	Tug Fork Watershed Planning		$39,500	$3,282	$36,218	$26,333	$1,752
	PCWA	Watershed Pilot Program		$22,500		$22,500	$15,000	
	STTWA	Watershed Pilot Program		$22,500	$3,639	$18,861	$15,864	
	WVCA	WVCA Statewide NPS Program		$44,000		$44,000	$29,333	
Program Total			$665,350	$559,539	$8,795	$550,744	$1,035,055	$1,752
Watershed	A-EPA	WV Allocation	$1,216,650	$ -	$ -	$ -	$835,693	
	CRG	Browns Creek Phase 3		$200,000	$ -	$200,000	$133,000	
	CVI	Mill Creek Stream Design/Restoration		$280,169	$ -	$280,169	$186,877	
		Tuscarora Creek Stream Design/Restoration		$161,031	$ -	$161,031	$111,355	
	FOC	Cheat Canyon Sediment Remediation		$162,450	$ -	$162,450	$113,000	
	WVCA	Upper Meadow River Phase 2		$50,000	$ -	$50,000	$49,461	
	WVU NMLRC	Mars Portal Phase 4		$300,000	$ -	$300,000	$200,000	
Watershed Total			$1,216,650	$1,153,650	$ -	$1,153,650	$1,629,386	
Grand Total			**$1,882,000**	**$1,713,189**	**$8,795**	**$1,704,394**	**$2,664,441**	**$1,752**

2023

Watershed	*Organization*	*Project*	Allocation	Amount Encumbered	Amount Spent	Project Balance	Match Budgeted	Match Spent
Program	A-EPA	WV Allocation	$759,961					
	BRWA	Investigating Swamp Run		$15,000		$15,000	$10,193	
	DEP	NPS Statewide Program		$528,461		$528,461	$414,466	
	Experience Learning	Appalachian Watershed Stream Monitors		$15,000		$15,000	$10,000	$1,584
	FOB	Beaver Creek Monitoring		$9,000	-$9,000	$18,000	$4,000	
				$9,000		$9,000		$1,253
	FOC	Hellbender Heros		$20,000	$7,113	$12,887	$13,250	$11,002
		Shavers Fork WBP/WPP Development		$60,500	$22,906	$37,594	$42,000	$10,000
	FODC	AMD System Improvements		-$36,000		-$36,000		

				$18,000		$18,000	$12,100	
				$18,000		$18,000		
		Marilla Streambank Repair		$20,000		$20,000		
	FotTFR	Tug Fork WBP Development		$60,500	$60,500		$24,625	$4,983
	PCWA	DNA Source Tracking		$4,000		$4,000	$3,000	
	STTWA	NPS Sedimentation and Outreach					$4,778	
				$4,989		$4,989	$4,778	
	WVCA	NPS Statewide Ag Implementation		$100,500		$100,500	$67,500	
Program Total			$759,961	$846,950	$81,519	$765,431	$610,690	$28,822
Watershed	A-EPA	WV Allocation	$1,165,539					
	CVI	Mill Creek Survey & Design		$51,463	$5,267	$46,196	$33,710	$1,472
	PCWA	Piney Creek Wastewater Phase 2		$52,250		$52,250	$34,833	
	WVCA	Anthony Creek Phase 2		$150,000		$150,000	$100,000	
		Spring Creek Phase 2		$145,000		$145,000	$111,000	
	WVU NMLRC	Lambert Site 8 Phase 2		$242,073	$8,200	$233,873	$175,000	
		Mars Portals Phase 3		$300,000	$2,995	$297,005	$200,000	
		Smooth Rock Lick Phase 3		$224,753	$15,310	$209,443	$155,000	
Watershed Total			$1,165,539	$1,165,539	$31,772	$1,133,767	$809,543	$1,472

2022

Watershed	*Organization*	*Project*	Allocation	Amount Encumbered	Amount Spent	Project Balance	Match Budgeted	Match Spent
Program	A-EPA	WV Allocation	$870,349					
	CDC	Stormwater LID buildouts		$20,000	$20,000			
	DEP	NPS Implementation		$418,456	$330,239	$88,217	$414,466	$1,133,700
		Southern WV GI Phase 2 Design		$85,693		$85,693		
								$15,600
		Watershed Plan Tracker		$10,000	$10,000			
	FOC	Cheat River monitoring		$20,000	$17,257	$2,743		$1,241
	MRVA	Bioswale at park						
	WVCA	NPS Implementation		$156,200		$156,200	$104,133	
	WVRC	Integrating SWPP Integration		$100,000	$20,482	$79,518	$66,667	$52,148
		TU/WVRC volunteer monitoring		$15,000	$27,510	-$12,510		$19,919
Program Total			$870,349	$825,349	$425,487	$399,862	$585,266	$1,222,608
Watershed	A-EPA	WV Allocation	$984,651					
	FOC	Dinkenburg Improvements	$0	$173,400	$36,128	$137,272	$116,000	
	FODC	Beulah Chapel Upgrade	$0	$262,100	$4,126	$257,974	$175,400	
	PCWA	Wastewater Treatment		$52,250		$52,250	$34,833	$1,495

	WVU NMLRC	Lambert Site 7 Phase 2 - GWF		$148,920	$10,358	$138,562	$100,000	
		North Portals Phase 2 - STT		$197,982	$45,677	$152,305	$130,000	
		Swamp Run Phase 2 - BRWA		$149,999	$14,165	$135,834	$100,000	
Watershed Total			$984,651	$984,651	$110,453	$874,198	$656,233	$1,495
Grand Total			**$1,855,000**	**$1,810,000**	**$535,940**	**$1,274,060**	**$1,241,499**	**$1,224,103**

2021

Watershed	*Organization*	*Project*	Allocation	Amount Encumbered	Amount Spent	Project Balance	Match Budgeted	Match Spent
Program	A-EPA	WV Allocation	$554,390					
	BRWC	Bacteria Source Tracking		$2,750	$2,750			$1,323
	BRWA	Septic pumping		$2,500		$2,500		$144
	DEP	NPS Implementation						-$508,929
				$375,240	$355,532	$19,708	$174,068	$682,997
		Watershed Plan Tracker		$10,000	$10,000			
	FOC	Roaring Creek - Cheat River WBP		$52,250	$30,969	$21,281	$35,300	$894
	FODC	Richard Mine Enhanced Monitoring		$41,083	$10,234	$30,849	$41,861	
		Richard Mine Monitoring		$15,226	$7,676	$7,550		
	WVCA	NPS Implementation		$116,900	$116,900		$77,933	$87,400
Program Total			$554,390	$615,949	$534,060	$81,888	$329,162	$263,829
Watershed	A-EPA	WV Allocation	$1,300,810					$77,810
	CVI	Tuscarora Creek III		$95,477	$48,660	$46,817	$63,660	$55,136
	FOB	Beaver Creek AMD Dom-1		$132,252	$40,759	$91,493	$111,700	$146,433
	FOC	Sovern Tom Clark Phase III - CANCELLED					$131,500	
	FODC	Slabcamp OLD-650 Phase III		$270,031	$47,993	$222,038	$177,000	
	WVCA	Back Creek Phase IV		$156,000	$156,000		$162,824	$157,824
		Elks Run Phase III		$96,800	$64,573	$32,227	$64,780	$2,231
		Indian Creek III		$150,000	$130,717	$19,283	$100,000	$197,626
		Indian Creek IV		$67,000		$67,000	$45,000	
		Mudlick Run of Anderson Run I		$110,000		$110,000	$73,335	$7,154
		Second Creek VI		$14,500		$14,500	$11,236	$1,330
	WVU NMLRC	Lambert Run Site 2		$150,000	$42,852	$107,148	$100,000	
Watershed Total			$1,300,810	$1,242,060	$531,554	$710,506	$1,041,035	$645,544
Grand Total			**$1,855,200**	**$1,858,009**	**$1,065,615**	**$792,394**	**$1,370,197**	**$909,372**

2020

Watershed	*Organization*	*Project*	Allocation	Amount Encumbered	Amount Spent	Project Balance	Match Budgeted	Match Spent
Program	A-EPA	WV Allocation	$546,612					
	DEP	GI in Southern WV		$68,353	$53,278	$15,075		
		NPS Implementation		$363,611	$363,611		$314,408	$922,143
		Rain Garden		$6,000	$454	$5,546		
	ExL	Appalachian Watershed Stream Monitors		$15,000	$15,000			$11,380
	FCWA	Rain barrel workshops		$1,395	$1,285	$110	$1,031	$1,031
	NRC	Green infrastructure training Total		$6,800	$5,164	$1,636	$15,500	$15,500
	PCWA	Rain barrels/nonpoint education		$3,200	$2,328	$872		$2,987
	STTWA	Beaver Creek WBP		$10,000	$3,128	$6,872	$6,160	$4,586
	WSRA	Monitoring		$2,000	$1,307	$693		$1,894
	WVCA	NPS Implementation		$68,000	$57,904	$10,096	$45,334	$45,334
	WVRC	WVWN and capacity		$15,000	$15,000			$21,156
Program Total			$546,612	$559,359	$518,458	$40,901	$382,433	$1,026,011
Watershed	A-EPA	WV Allocation	$1,259,388					
	FOB	Beaver Creek Seep 100-02		$90,000	$90,000	$0	$121,000	$38,099
	FOC	Sovern 62 to replace Tom Clark		$172,937	$259,251	-$86,315	$120,500	$148,190
		Sovern Tom Clark Passive Treatment		$11,781	$11,781		$141,500	
	FODC	Dillan Creek Phase II			$5,099	-$5,099	$127,500	$4,420
		Marilla Gully Sedimentation		$224,126	$81,665	$142,461		$95,400
	PCWA	Little League Convention Center 2		$97,132	$112,132	-$15,000	$64,750	$91,901
	WVCA	Anthony Creek septic & riparian BMPs		$150,000	$114,329	$35,671	$100,000	$76,840
		Cherry Fork Ag BMPs		$132,034	$132,034		$101,002	$87,033
		Pipestem Creek Ag BMPs		$104,503	$84,503	$20,000	$78,444	$91,905
		Sleepy Creek septic and urban SW		$92,130	$81,107	$11,023	$64,500	$82,208
	WVU NMLRC	Lambert Site 7 Passive Treatment		$65,252	$65,252		$42,638	$42,638
Watershed Total			$1,259,388	$1,139,894	$1,037,153	$102,741	$961,834	$758,634
Grand Total			**$1,806,000**	**$1,699,253**	**$1,555,611**	**$143,642**	**$1,344,267**	**$1,784,645**

Note: The above is based upon the tracking tools utilized by the NPS Program and may not reflect the exact financial status. The expenditures, encumbrances and all financial things are also checked and verified by WVDEP's Fiscal Section.

Appendix 2. BMPs that were implemented in 2024.

FY	NPS#	Subgrantee	Project	Drainage Area Name	HUC12	BMP	Installed	Units	Date
21	1782	WV Conservation Agency	Mudlick Run	Anderson Run	020700010602	Onsite Waste Water Treatment System (Pumpout)	1.0	IU	Sep-24
21	1779	WV Conservation Agency	Back Creek Phase IV	Elk Branch-Back Creek	020700040407	Conservation Easements	80.8	AC	Sep-24
21	1779	WV Conservation Agency	Back Creek Phase IV	Outlet Back Creek	020700040409	Conservation Easements	129.6	AC	Sep-24
21	1780	WV Conservation Agency	Elks Run Phase 3	Elks Run	020700041107	Onsite Waste Water System [Repair/Upkeep]	1.0	IU	Sep-24
21	1780	WV Conservation Agency	Elks Run Phase 3	Elks Run	020700041107	Tree/Shrub Establishment	1.8	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Skin Creek	050200020102	Nutrient Management	14.6	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Gnatty Creek	050200020201	Nutrient Management	20.0	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Outlet Elk Creek	050200020204	Nutrient Management	21.7	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Hackers Creek	050200020303	Nutrient Management	20.0	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Outlet Simpson Creek	050200020402	Nutrient Management	20.0	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Headwaters Tenmile Creek	050200020502	Nutrient Management	20.0	AC	Sep-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	AMD Treatment System	1.0	SYS	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	AMD: Constructed Wetland Aerobic	4,340.0	SQFT	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	AMD: Limestone Leach Bed/Pond	2,073.8	SQFT	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	AMD: Limestone Leach Bed/Pond	6,007.5	SQFT	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	AMD: Limestone Open Channel	60.0	FT	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	AMD: Polishing Pond	1,606.5	SQFT	Jun-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD Treatment System	1.0	SYS	Aug-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD: Autoflush vertical flow pond	16,327.0	SQFT	Aug-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD: Autoflush vertical flow pond	14,613.0	SQFT	Aug-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD: Jenning's vertical flow pond	23,107.0	SQFT	Aug-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD: Settling pond	17,246.0	SQFT	Aug-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD: Settling pond	17,681.0	SQFT	Aug-24
19	1789	Friends of the Cheat	Muddy Creek Phase 2	Lower Big Sandy Creek	050200040605	AMD: Polishing Pond	16,819.0	SQFT	Aug-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Muddy Creek	050200060106	Nutrient Management	20.0	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Salt Block Run-Youghiogheny River	050200060301	Nutrient Management	40.0	AC	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Tanner Creek	050302031201	Nutrient Management	20.0	AC	Sep-24
21	1781	WV Conservation Agency	Indian Creek 3	Burnside Branch	050500020701	Onsite Waste Water System [Repair/Upkeep]	3	IU	Sep-24
21	1781	WV Conservation Agency	Indian Creek 3	Burnside Branch	050500020701	Onsite Waste Water Treatment System (Pumpout)	2	IU	Sep-24
21	1781	WV Conservation Agency	Indian Creek 3	Burnside Branch	050500020701	Onsite Waste Water System [Repair/Upkeep]	1	IU	May-24
21	1781	WV Conservation Agency	Indian Creek 3	Burnside Branch	050500020701	Onsite Waste Water Treatment System (Pumpout)	1	IU	May-24
21	1781	WV Conservation Agency	Indian Creek 3	Upper Indian Creek	050500020703	Onsite Waste Water System [Repair/Upkeep]	1	IU	May-24
21	1781	WV Conservation Agency	Indian Creek 3	Upper Indian Creek	050500020703	Onsite Waste Water Treatment System (Pumpout)	1	IU	May-24
21	1781	WV Conservation Agency	Indian Creek 3	Middle Indian Creek	050500020704	Onsite Waste Water System [Repair/Upkeep]	4	IU	May-24
21	1781	WV Conservation Agency	Indian Creek 3	Middle Indian Creek	050500020704	Onsite Waste Water Treatment System (Pumpout)	4	IU	May-24
21	1781	WV Conservation Agency	Indian Creek 3	Lower Indian Creek	050500020705	Onsite Waste Water System [Repair/Upkeep]	2	IU	Sep-24
20	1738	WV Conservation Agency	Pipestem Creek	Little Bluestone River-Bluestone River	050500020909	Onsite Waste Water System [Repair/Upkeep]	7	IU	May-24
20	1738	WV Conservation Agency	Pipestem Creek	Little Bluestone River-Bluestone River	050500020909	Onsite Waste Water Treatment System (pumpout)	5	IU	May-24
20	1737	WV Conservation Agency	Anthony Creek 3	Upper Anthony Creek	050500030503	Onsite Waste Water Treatment System (Pumpout)	1	IU	Jun-24
20	1737	WV Conservation Agency	Anthony Creek 3	Middle Anthony Creek	050500030504	Onsite Waste Water System [Repair/Upkeep]	2	IU	Sep-24
20	1737	WV Conservation Agency	Anthony Creek 3	Middle Anthony Creek	050500030504	Riparian Forest Buffer	1200	FT	Jun-24
20	1834	Piney Creek Watershed Assoc.	Piney Creek Wastewater Phase 2	Headwaters Piney Creek	050500040102	Onsite Wastewater Treatement System (New/Existing)	6.0	IU	Sep-24
20	1834	Piney Creek Watershed Assoc.	Piney Creek Wastewater Phase 2	Headwaters Piney Creek	050500040102	Onsite Waste Water Treatment System (Pumpout)	20.0	IU	Sep-24
20	1736	Piney Creek Watershed Assoc.	Little League Convention Center 2	Outlet Piney Creek	050500040103	Raingarden/ bioretention basin	11,569.0	SQFT	Sep-24
20	1739	WV Conservation Agency	Cherry Fork	Headwaters Eighteenmile Creek	050500080401	Onsite Waste Water System [Repair/Upkeep]	1	IU	Sep-24
20	1739	WV Conservation Agency	Cherry Fork	Headwaters Eighteenmile Creek	050500080401	Stream Channel Stabilization	1412	FT	Sep-24

Appendix 3. Load reductions that were achieved in 2024.

FY	NPS#	Subgrantee	Project	Drainage Area	HUC12	Pollutant	LR Estimate	Units	Date
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	Acidity	1,953.0	LBS/YR	Jun-24
19	1789	Friends of the Cheat	Muddy Creek Phase II	Muddy Creek	050200040703	Acidity	79,774.1	LBS/YR	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	Metals (Aluminum)	169.4	LBS/YR	Jun-24
18	1789	Friends of the Cheat	Muddy Creek Phase II	Muddy Creek	050200040703	Metals (Aluminum)	8,232.4	LBS/YR	Jun-24
20	1792	Friends of the Cheat	Sovern 62 Improvements	Lower Big Sandy Creek	050200040605	Metals (Iron)	279.6	LBS/YR	Jun-24
19	1789	Friends of the Cheat	Muddy Creek Phase II	Muddy Creek	050200040703	Metals (Iron)	5,126.2	LBS/YR	Jun-24
18	1798	Friends of the Cheat	Muddy Creek Phase II	Muddy Creek	050200040703	Metals (Manganese)	252.8	LBS/YR	Jun-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Skin Creek	050200020102	Nutrients - Nitrogen	973.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Gnatty Creek	050200020201	Nutrients - Nitrogen	1,333.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Outlet Elk Creek	050200020204	Nutrients - Nitrogen	1,447.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Hackers Creek	050200020303	Nutrients - Nitrogen	1,333.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Outlet Simpson Creek	050200020402	Nutrients - Nitrogen	1,333.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Headwaters Tenmile Creek	050200020502	Nutrients - Nitrogen	1,333.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Muddy Creek	050200060106	Nutrients - Nitrogen	1,333.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Salt Block Run-Youghiogheny River	050200060301	Nutrients - Nitrogen	2,667.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Tanner Creek	050302031201	Nutrients - Nitrogen	1,333.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Skin Creek	050200020102	Nutrients - Phosphorus	521.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Gnatty Creek	050200020201	Nutrients - Phosphorus	714.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Outlet Elk Creek	050200020204	Nutrients - Phosphorus	775.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Hackers Creek	050200020303	Nutrients - Phosphorus	714.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Outlet Simpson Creek	050200020402	Nutrients - Phosphorus	714.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Headwaters Tenmile Creek	050200020502	Nutrients - Phosphorus	714.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Muddy Creek	050200060106	Nutrients - Phosphorus	714.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Salt Block Run-Youghiogheny River	050200060301	Nutrients - Phosphorus	1,429.0	LBS/YR	Sep-24
23	1825	WV Conservation Agency	WVCA Statewide NPS Program	Tanner Creek	050302031201	Nutrients - Phosphorus	714.0	LBS/YR	Sep-24
21	1782	WV Conservation Agency	Mudlick Run	Anderson Run	020700010602	Pathogens (Coliform)	3.67E+08	CFU/YEAR	Sep-24
20	1735	WV Conservation Agency	Sleepy Creek VI	Middle Sleepy Creek	020700040203	Pathogens (Coliform)	1.24E+10	CFU/YEAR	May-24
21	1780	WV Conservation Agency	Elks Run Phase III	Elks Run	020700041107	Pathogens (Coliform)	1.23E+10	CFU/YEAR	Sep-24
21	1781	WV Conservation Agency	Indain Creek Phase 3	Burnside Branch	050500020701	Pathogens (Coliform)	8.30E+09	CFU/YEAR	Sep-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Burnside Branch	050500020701	Pathogens (Coliform)	4.93E+10	CFU/YEAR	Sep-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Burnside Branch	050500020701	Pathogens (Coliform)	4.15E+09	CFU/YEAR	May-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Burnside Branch	050500020701	Pathogens (Coliform)	1.66E+10	CFU/YEAR	May-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Upper Indian Creek	050500020703	Pathogens (Coliform)	4.15E+09	CFU/YEAR	May-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Upper Indian Creek	050500020703	Pathogens (Coliform)	1.66E+10	CFU/YEAR	May-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Middle Indian Creek	050500020704	Pathogens (Coliform)	6.64E+10	CFU/YEAR	May-25
21	1781	WV Conservation Agency	Indain Creek Phase 3	Lower Indian Creek	050500020705	Pathogens (Coliform)	1.64E+10	CFU/YEAR	Sep-25
20	1738	WV Conservation Agency	Pipestem Creek	Little Bluestone River-Bluestone River	050500020909	Pathogens (Coliform)	4.18E+11	CFU/YEAR	May-24
20	1738	WV Conservation Agency	Pipestem Creek	Little Bluestone River-Bluestone River	050500020909	Pathogens (Coliform)	1.44E+11	CFU/YEAR	Sep-24
20	1737	WV Conservation Agency	Anthony Creek 3	Upper Anthony Creek	050500030503	Pathogens (Coliform)	4.15E+09	CFU/YEAR	May-24
20	1737	WV Conservation Agency	Anthony Creek 3	Upper Anthony Creek	050500030503	Pathogens (Coliform)	3.30E+10	CFU/YEAR	Sep-24
20	1737	WV Conservation Agency	Anthony Creek 3	Middle Anthony Creek	050500030504	Pathogens (Coliform)	4.06E+10	CFU/YEAR	Sep-24
23	1834	Piney Creek Watershed Assoc.	Piney Creek Wastewater Phase II	Headwaters Piney Creek	050500040102	Pathogens (Coliform)	2.63E+11	CFU/YEAR	Sep-24
20	1739	WV Conservation Agency	Cherry Fork	Headwaters Eighteenmile Creek	050500080401	Pathogens (Coliform)	1.64E+10	CFU/YEAR	Sep-24
20	1739	WV Conservation Agency	Cherry Fork	Headwaters Eighteenmile Creek	050500080401	Pathogens (Coliform)	1.71E+09	CFU/YEAR	Sep-24
21	1780	WV Conservation Agency	Elks Run Phase III	Elks Run	020700041107	Sedimentation-Siltation	620.0	LBS/YR	Sep-24
20	1737	WV Conservation Agency	Anthony Creek Ag BMPs	Middle Anthony Creek	050500030504	Sedimentation-Siltation	398,200.0	LBS/YR	Sep-24
20	1736	Piney Creek Watershed Assoc.	Little League Convention Center II	Outlet Piney Creek	050500040103	Sedimentation-Siltation	4,000.0	LBS/YR	Sep-24
20	1739	WV Conservation Agency	Cherry Fork	Headwaters Eighteenmile Creek	050500080401	Sedimentation-Siltation	5,800.0	LBS/YR	Sep-24

Appendix 4. Summary progress of West Virginia's NPSMP

Administration	Status	Comments
Provide leadership in managing the NPS Program		The majority of these are annual goals that are consistent with §319 workplans. Each of these goals are either complete or progress was satisfactory except for the urban runoff management program. However, two projects, one funded by §319 and the other with CB funding, assisted two communities in the planning and design of green infrastructure projects for their communities. The next phase is to find funding to support the projects. The WVWN and WPP were the main vehicles for building watershed capacity.
Represent the DWWM in multi-agency and stakeholder organizations		
Project management of all watershed projects includes tasks such as technical guidance, support, and oversight and compliance management.		
Coordinate and oversee NPS Program grant projects relating to nonpoint source issues in non-priority watersheds to foster a better understanding of NPS pollution, as well as more recognition for the NPS Program.		
Participate and coordinate in the development of work plans and grant proposals in priority watersheds.		
Maximize the use of all funds to achieve water quality standards in NPS impaired streams		
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.		
Participate in and coordinate with the WVWN.		
Coordinate with appropriate agencies, watershed associations and Public Service Districts to address failing on-site wastewater systems.		
Coordinate with project teams to propose additional funding opportunities and activities to conduct streambank stabilization projects in priority watersheds.		
Participate in the Cheat and Monongahela River TMDL implementation plans		
Develop guidelines for an urban runoff management program that promotes low impact development practices		
Coordinate with WVCA and NRCS to implement CREP/EQIP programs in priority watersheds		
Provide conservation education and information to educators, youth, and the public		
Increase capacity for watershed associations to actively participate in and provide leadership for NPS watershed projects		

Watershed Management	Status	Comments
Conduct restoration activities and BMP implementation in priority watersheds with the goal of achieving load reductions that will meet their designated uses by 2025.		
By 2020 develop two-four new WBPs in priority areas as designated by the Watershed Management Framework and TMDL processes.		WBP activity is on-going driven by local stakeholders, agency, and NGO support. Multiple WBPs were approved, and we are working on source water, WBP integration efforts. New and revised plans are being developed in the Potomac, Cheat and Tug Fork watersheds. Recent monitoring suggests that Second Creek is nearing completion. We have not successfully developed WPBs in the Ohio River basins but will have one in 2025.
Every two years evaluate the progress and revise existing active WBPs as needed.		
By 2020 complete the proposed watershed projects and achieve the required load reductions (LRs) that will meet the designated uses in three existing WBPs.		
Every two years or more frequently when needed or requested by EPA, report on active WBPs in accordance with the milestones established in approved plans		
By 2020 target priority basins in the Little Kanawha, Upper, Middle and Lower Ohio for the development of two new WBPs		
Support and encourage the remediation of watersheds impacted by wastewater in priority watershed and on a statewide basis by promoting the statewide efforts of the CWSRF and Agricultural Loan Programs.		
Provide funding and technical assistance within priority watersheds and on a statewide basis to stream restoration projects that restore the streams natural hydrologic conditions and reduce sedimentation.		

Support and encourage the protection of healthy watersheds and work with local stakeholders to educate their communities on their importance. This includes waters identified as high quality and outstanding national resources, as well as those that remain high quality but may be threatened by NPS pollutants.		
If there is local stakeholder interest, funding and agency support, a Watershed Protection Plan (WPP) will be developed to protect high value water bodies identified as Tier 3. The goal is to develop one WPP within the next five years		WPP is a priority, particularly in WV's Chesapeake Bay counties. WV currently has two WPPs, one is active (Back Creek) the other has been challenging (Upper Elk). There may be future WPP opportunities in association with WMA's. EPA's RPS tool has helped to identify these opportunities. Multiple CEPs have been implemented in the Back Creek watershed.
If there is local stakeholder interest, funding and agency support efforts will be made to protect high priority wetland and riparian areas and other high value watershed resources, including water quality reference streams, in priority restoration and protection watersheds. The goal is to engage land trust, local landowners, and others to implement conservation easement protection (CEP). The goal is to develop two-four CEPs within each of the approved WPPs within the next five years		
Support the development of the WVWAPP tool and encourage WVDEP to develop statewide criteria to define healthy waters that will ensure better protection of high quality watersheds		

Agriculture	Status	Comments
Target statewide opportunities and priority watersheds promote the conservation of cropland, pastureland, and other land within the agriculture community through technical assistance, BMP implementation, conservation planning, nutrient management, monitoring, and education.		
Every two-years develop 10 Conservation Plans under the Farm Bill Programs		Nearly all goals have been exceeded or nearly so. Where numbers are lower the goal is expected to be met soon. The Ag WQLP hasn't been promoted but has recently gained some attention in publications etc. WVDEP's CWSRLF and WVCA plans to put additional emphasis on the program. Some interagency discussion regarding the Ag loan program have occurred.
Every five years 25 nutrient management plans will be written or reviewed managing the estimates provided in Table 7 for pounds/year of nitrogen and phosphorus through the implementation of BMPs		
Every five years provide technical assistance to 25 agriculture producers with the development, protection, stabilization and/or maintenance of riparian areas or with resource management advice that protects surface water		
Provide estimated reduction of sediment from stabilization/restoration of failing streambank, etc.		
Provide estimated sediment reductions due in part to changes in management schemes; rotational grazing, exclusion, etc.		
Provide information on the Agriculture Water Quality Loan Program to 10 agricultural landowners on an annual basis.		
Manage pesticides to protect surface and groundwater.		
Every two years coordinate pesticide collection to protect surface and ground water in cooperation with WVDA		Efforts have been delayed due to turnover/covid and budget restraints within the WVDA.
By 2020 organize a minimum two pesticide collection pickup by in cooperation with WVU Extension and the WVDA.		
Support monitoring programs in priority watersheds impaired by agricultural nonpoint pollutants.		
WVCA staff will assist landowners, watershed associations and partner agencies with stream monitoring activities in priority watersheds as needed.		Goals complete and efforts are on-going.
Provide education and technical assistance on stormwater BMPs.		
From 2015-2020 provide five stormwater workshops or demonstration projects		These goals have been exceeded. However, position turnover and organizational changes will affect future efforts.
By 2018, we present 20 stormwater management workshops across the state.		
By 2016 provide technical advice regarding stormwater management quality and/or quantity issues to 20 clients.		

Stormwater	Status	Comments
Improve and protect West Virginia's soil and water resources by reducing the amount of erosion from earthwork sites through education and technical assistance.		
Provide technical assistance and/or information to 2,500 attendees at the WV Construction & Design Exposition over the course of five years through an informational display booth with technicians on hand to answer questions		Estimated numbers are down. The average is > 10 ECPs/yr primarily because of more local contractual assistance to smaller MS4s. Most likely this service will not continue.
Every two years review and/or provide advice with writing 40 construction erosion and sediment control plans with estimates of soil saved		

Resource Extraction	Status	Comments
If funding allows, the NPS Program will coordinate to the extent possible with DEP's OAMLR, OSR, OO&G and WVDOF on future project opportunities in watersheds impaired by resource extraction activities.		
Where projects align with current WBPs, or where TMDLs and other sources of information suggest alternate WBPs could be developed to fully restore smaller impacted watersheds; the NPS Program will partner with local stakeholders, our agency and partner agencies to develop restoration projects.		NPS projects continue to receive support from OSM-WCAP; however, AML funds have been limited. The most significant contribution is the investment in the Muddy Creek watershed. The infrastructure bill may provide opportunities to make significant future progress.
If funding allows, the NPS Program will partner with DEP's mining program and the federal OSM to provide support for long-term operation and maintenance of passive and active AMD treatment		

Support the WVDOF in their administration of the Logging and Sediment Control Act (LSCA), which reduces the potential impacts to water quality from forestry operations. The NPS Program will work with the WVDOF to support LSCA activities, the objectives listed below as well as other activities that promote the protection of water quality from NPS pollution; however, WVDOF is the primary agency for implementing all forestry management activities.		
Every three years participate in the Forestry BMP Committee that updates and revises the WVDOF BMP Manual		WVDOF layoffs have impacted NPS inspections related to LSCA and other incentives. NPS remains committed and is still a partner. AGO funding supported a WVU/WVDOF study.
Increase community/landowner involvement with Urban Forestry Program, Stewardship Incentive Program (SIP) and Forest Incentive Program		
Encourage proper forestry management on all forest lands, which will ensure a productive forest and enhance water quality		

Chesapeake Bay Program	Status	Comments
WV is a headwater state for the Chesapeake Bay watershed and the NPS Program will support the goals of the CB Agreement by serving on committees, participating in regular meetings and calls, and providing input to the future development of the Bay TMDL and models. The NPS Program will also work on specific objectives that support the general goals of the CB Program.		
Implement local TMDL WBPs and CB WIP to reduce nutrients, sediment and fecal coliform to local waters and the Chesapeake Bay		WVDEP staff continue to participate in project teams implementing WBPs and identifying CB funding opportunities. CB Program progress has been good and is on-going. There are no CAFOs.
Participate in the development of local TMDLs in Warm Springs Run and Rocky Marsh Run to enhance TMDL/NP coordination by identifying opportunities to incorporate information needed for WBP development		
Continue to work with local governments to incorporate post construction stormwater requirements in local ordinances		
Continue implementation of agriculture BMPs and WV NPDES CAFO permitting and enforcement consistent with the WIP and WBPs		

Progress legend

Status		Notes
Complete		In some cases, complete may refer to on-going particularly if the milestone is an annual goal.
Progress made		
No progress		

Appendix 5. West Virginia's NPSMP load reduction goals.

5-year goal	**350**	**180,000**	**400,000**	**300,000**	**20,000**	**2.00E+15**
units	lbs/yr	lbs/yr	lbs/yr	lbs/yr	tons/yr	CFU
Pollutants	Acidity	Total Metals	Nitrogen	Phosphorus	Sediment	Pathogens
2019		12	532,240	185,812	3	2.84E+14
2020	47	14,921	292,151	276,030	53	2.58E+13
2021	73	23,048	620	448	56	1.07E+13
2022	30,359	3,825	97,766	114,547	448	1.89E+13
2023	11,659	2,404				2.12E+13
2024	81,727	14,060	13,085	7,009	204	1.13E+12
Totals	123,865	58,270	935,862	583,846	764	3.62E+14
% Difference	+198.9	- 102.2	+80.2	+64.2	-185.2	+138.7

Overall % Difference (+194.6)

Key: Over | Under