Virginia Nonpoint Source Pollution Management Program

2023 Annual Nonpoint Source Report

July 1, 2022 through June 30, 2023

Final: 4/23/2024

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2023 Virginia Nonpoint Source Annual Report

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Executive Summary

This report fulfills the Virginia Department of Environmental Quality's (DEQ) legislative requirement under § 319(h)(8) and (11) of the Federal Clean Water Act (33 USC 1329). It describes Nonpoint Source (NPS) Pollution Management Program activities undertaken by DEQ and cooperating agencies during Virginia fiscal year 2023 (FY2023), which covers a period from July 1, 2022 through June 30, 2023. In addition, it communicates the success of Virginia's NPS pollution management program to the citizens of the Commonwealth and elected officials. Progress towards meeting Virginia's 5-year NPS goals can be found on the Virginia NPS Reporting website at the 2023 NPS Milestone Reporting Tool.

DEQ and its partners made significant progress in addressing the five programmatic NPS goals identified in the 2019-2024 Virginia NPS Pollution Management Plan. This included documentation of pollution reductions for nitrogen (~15 million pounds), phosphorous (~221,000 pounds), and sediment (~220,000 tons) from agricultural sources; the development of one implementation plans (IPs) addressing 9 impairments and the documented installation of 4,369 BMPs in 79 approved IP project areas in FY2023, resulting in the exclusion of livestock from over 250 miles of stream and the creation of 3,684 acres of riparian buffers. DEQ and its agency partners utilized over $25 million of state and federal (excluding federal Natural Resource Conservation Service (NRCS) sources of funding to implement BMPs throughout the Commonwealth.

Virginia made significant progress in planning for how NPS pollution in the Commonwealth would be addressed through the completion of the state's Chesapeake Bay Watershed Implementation Plan – Phase III (Phase 3 WIP) and 2019-2024 Virginia NPS Management Program Plan, and in reporting the state's progress in addressing water quality issues through the issuance of both the 2022 305(b)/303(d) Water Quality Assessment Integrated Report (IR) and the 2023 Chesapeake Bay and Virginia Waters Cleanup Report.

Agency partners demonstrated their commitment to addressing sources of NPS pollution through their robust implementation of policies and programs. FY2023 accomplishments included:

- Over 4,300 Best Management Practices (BMPs) were installed in over 234 Implementation Plan watersheds leading to over 1.3 million linear feet of stream protected, over 3,600 acres of buffer creation, and reduction in pollution of over 4.0 million tons of nitrogen.
- Virginia Department of Forestry (VDOF) permanently protected 4,108 acres of open space and more than 19 miles of water courses through six conservation easements. One of the easements, comprising 370 acres and protecting approximately 2.4 miles of water courses, were within the Chesapeake Bay watershed.
- Virginia Department of Conservation and Recreation (DCR) reported within the Bay watershed: 64 animal waste facilities were installed, nearly 1.9 million linear feet of livestock stream exclusion and the establishment of 4,839 acres of riparian buffers on agricultural lands.

- Virginia Energy's (formerly Department of Mines, Minerals, and Energy) Abandoned and Orphaned Mine Land Programs have prioritized and remediated 16 sites across Virginia between July 1, 2022 and June 30, 2023.
- In August 2021, the Virginia General Assembly approved $11.5 million in funding from the American Rescue Act Plan for improvements to well and septic systems for homeowners at or below 200% of the federal poverty guidelines. This program is known as Septic and Well Assistance Program (SWAP). VDH opened the application process for direct project in January 2022. By September 2, 2022, VDH received 270 direct project applications for 344 SWAP projects totaling an estimated $7,204,100. VDH has also provided nearly $1,800,000 in funding to local government partners and non-profits to implement the SWAP program in their area. VDH has completed the installation of 136 repairs thus far.
- Virginia Department of Health identified a strategic vision to shift evaluation for onsite sewage systems and private wells to the private sector. This shift in services is complete, although per the Code of Virginia VDH remains a provider of last resort for system owners able to demonstrate qualifying hardship. This effort has allowed VDH to focus its limited resources on health monitoring and sharing, providing quality assurance inspections of private sector work, developing policies to improve health, and providing reasonable enforcement and programmatic oversight. VDH has also developed the Septic and Well Assistance Program (SWAP), utilizing designated American Rescue Plan Act funds to assist homeowners at or below 200% of the federal poverty index to repair or replace failing onsite sewage systems and private wells.

Chapter 1: Virginia's NPS Management Program

1.1 What is the Virginia NPS Pollution Management Program and Plan?

Virginia's NPS Pollution Management Program is a diverse network of state and local government programs which collectively promote and fund local watershed planning efforts, stream and wetland restoration and protection, education and outreach, and other measures. The Program's goal is to reduce NPS pollution and prevent it from impacting the Commonwealth's lakes, rivers, and streams to help restore their health and prevent further water quality degradation. The 2019 NPS Pollution Management Plan (Plan), developed by DEQ in cooperation with other state, federal, regional, and local agencies and other organizations was approved by EPA in March 2020 and summarizes the Commonwealth's strategy and programs to prevent and control NPS pollution. The Plan is a comprehensive blueprint for addressing sources of NPS pollution within the Commonwealth of Virginia for the years 2019-2024. The Plan also describes other Virginia initiatives that work toward common goals, such as the implementation of the Chesapeake Bay Watershed Implementation Plan (WIP).

1.2 What is the Virginia 2023 NPS Annual Report?

The 2023 Virginia NPS Program Annual Report describes the achievements of Virginia's NPS Pollution Management Program, where DEQ and its partners address NPS pollution during the reporting period of July 2022 through June 2023 (FY2023). This work is guided and accomplished by implementing the Virginia NPS Pollution Management Program Plan. This report fulfills the legislative requirement under § 319(h)(8) and (11) of the Federal Clean Water Act (33 USC 1329). In addition, it communicates the success of Virginia's NPS pollution management programs to the citizens of the Commonwealth and elected officials.

1.3 Accomplishments of the Virginia NPS Pollution Management Program

As demonstrated in this report, Virginia's NPS program is highly successful and incorporates efforts from many partners across many sectors. The program has a long history of significant accomplishments from implementation plan development to achieving IP goals as documented in success stories. This reporting year continued that tradition, and DEQ anticipates continued growth of the program and achievement of its goals.

Progress in Addressing Key NPS Program Goals

In the Plan, DEQ identified five programmatic goals for the NPS program. As described below, DEQ is pleased to report substantial progress on each of these goals. Through their efforts in each of the Plan's component programs, DEQ and its partners have made significant advancements in reducing NPS pollution. Table 1.1 below provides examples of this progress, while the respective sections in Chapter 2 provide greater detail.

Table 1.1: Progress on achieving NPS goals

Goal 1 – Address NPS Pollutants: *Eliminate or reduce priority pollutants and causes*
• Progress in addressing bacteria and benthic impairments is evident. Implementation of initiatives have resulted in significant progress toward meeting Chesapeake Bay 2025 load reduction goals (Figures 1.1-1.3 below). Within local watershed-based plan areas across the Commonwealth, 4,369 BMPs were installed that resulted in reductions of bacterial pollution of 5.87E+16 CFU, 4.09 million lbs/year nitrogen, 67,004 lbs/year phosphorous and 80,125 tons/year of sediment (Table 2.6). Agricultural BMP funding in FY2023 reduced 15.8 million pounds of nitrogen, 221,877 pounds of phosphorus, and 220,297 tons of sediment (Table 2.15). • **Chapter 2 References: Sections 2.1-2.8**
Goal 2 – Watershed Planning & Implementation*: Develop and implement Total Maximum Daily Loads (TMDL) and watershed-based plans (WBP's)*
• Progress was made in the development and implementation of TMDLs and watershed-based plans (WBPs). To date 1,115 TMDL equations and 100 watershed plans addressing 648 impairments have been developed. The residential septic and agricultural BMPs implemented within WBP areas in FY2023 resulted in the protection and exclusion of 250 miles of stream from livestock access, creating 3,684 acres of riparian buffer. In addition, 311 homes had their septic systems pumped or had straight pipes or failing septic systems addressed. • **Chapter 2 References: Sections 2.1, 2.3, and 2.4**
Goal 3 – Document Improvement*: Focus effort to document pollutant reductions and water quality improvements.*
• Progress has been made in documenting water quality and programmatic improvements as seen in the 2022 IR along with associated water quality delistings and success stories. For FY2023, VA has been granted EPA-approval on two success stories addressing two segments. Future success stories may come from any of the 4 segments within four implementation plans covering 27.57 miles that are proposed for delisting (See Table 2.11). • **Chapter 2 References: Sections 2.1-2.4, 2.6 and 2.7**
Goal 4 – Public Awareness: *Increase public awareness of NPS pollutants and causes of impairments and encourage individuals to adopt behaviors to reduce NPS pollutants*
• Every program in Chapter 2 included education and outreach components aimed at increasing public awareness and involvement in NPS pollution reduction activities. This included hundreds of events, trainings, stewardship programs, and meetings held through June 2023 to increase public engagement. • **Chapter 2 References: Section 2.1-2.8**

Goal 5 – NPS Funding: ***Identify and effectively leverage financial and technical resources.***
• Agency partners expended or committed more than $93 million in state and federal resources to restore or protect our aquatic and natural resources from sources of NPS pollution. • This funding included a total of $950,000 in federal Section 319(h) funds from EPA. to grants and contracts for on-the-ground activity. Over $59 million in state resources funded agricultural BMPs and associated technical assistance, in addition to $34 million of state funds for the installation of stormwater BMPs. • **Chapter 2 References: Sections 2.1-2.4 and 2.7**

Progress in Addressing NPS Pollution within the Chesapeake Bay

Virginia continues to address NPS pollution in the Chesapeake Bay through implementation of the Phase 3 WIP. Virginia is aggressively implementing its Phase III WIP to achieve nutrient and sediment reductions needed to restore the Chesapeake Bay and its tidal tributaries. This roadmap details BMPs and programmatic actions necessary to achieve state basin planning targets for nitrogen, phosphorus and sediment to meet the Chesapeake Bay TMDL goals. Virginia completed 2022-2023 programmatic and numeric milestones and reported its progress in Fall 2022. Figures 1.1, 1.2, and 1.3 show Virginia's progress in addressing annual load reductions of nitrogen, phosphorous, and sediment, respectively, within the Chesapeake Bay from 2009 through 2021, as well as projecting the load reductions to be achieved with the implementation of the Phase III WIP goals.

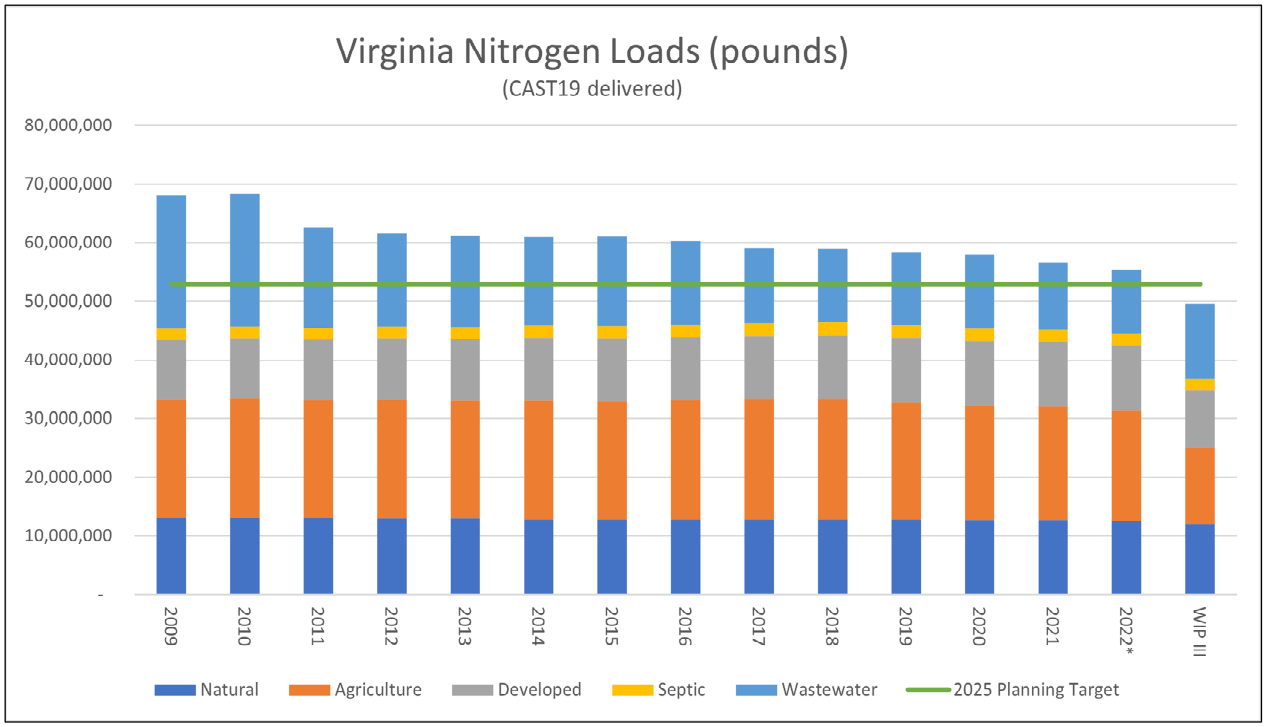

Figure 1.1: Virginia's annual nitrogen load progress within the Chesapeake Bay 2009-2022, including WIP III 2025 loads

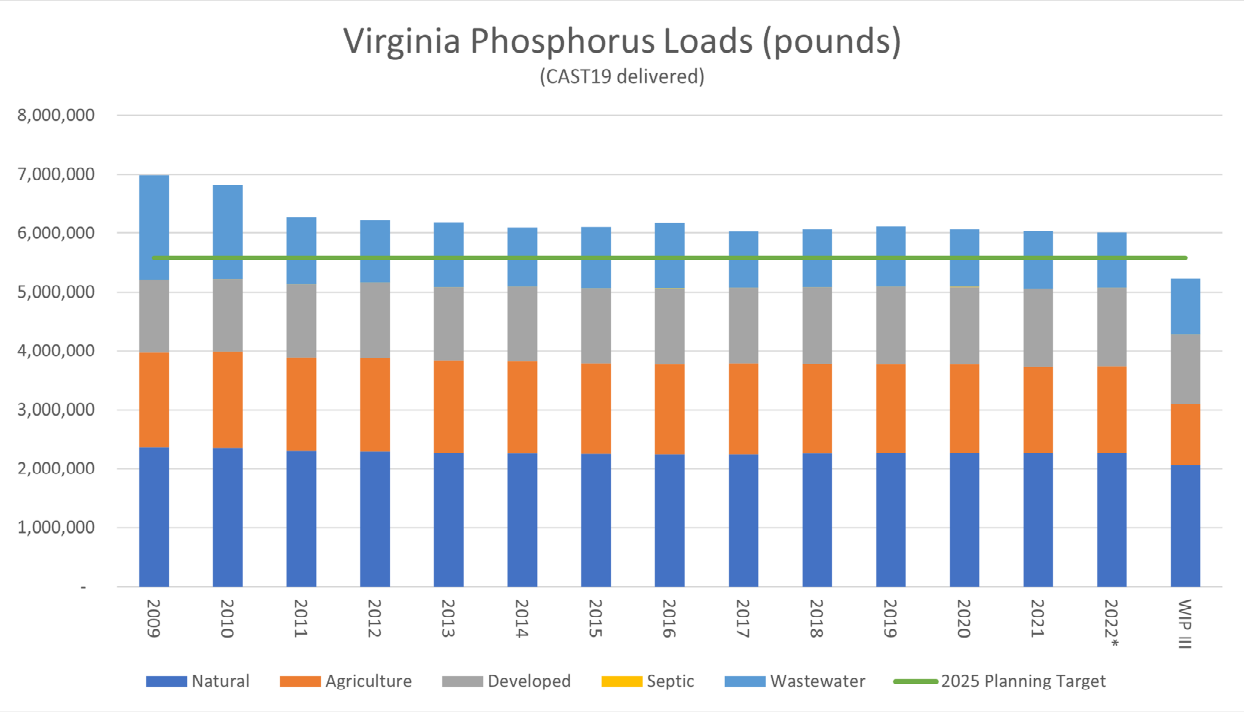

Figure 1.2: Virginia's annual phosphorous load progress within the Chesapeake Bay 2009-2022, including WIP III planned 2025 loads.

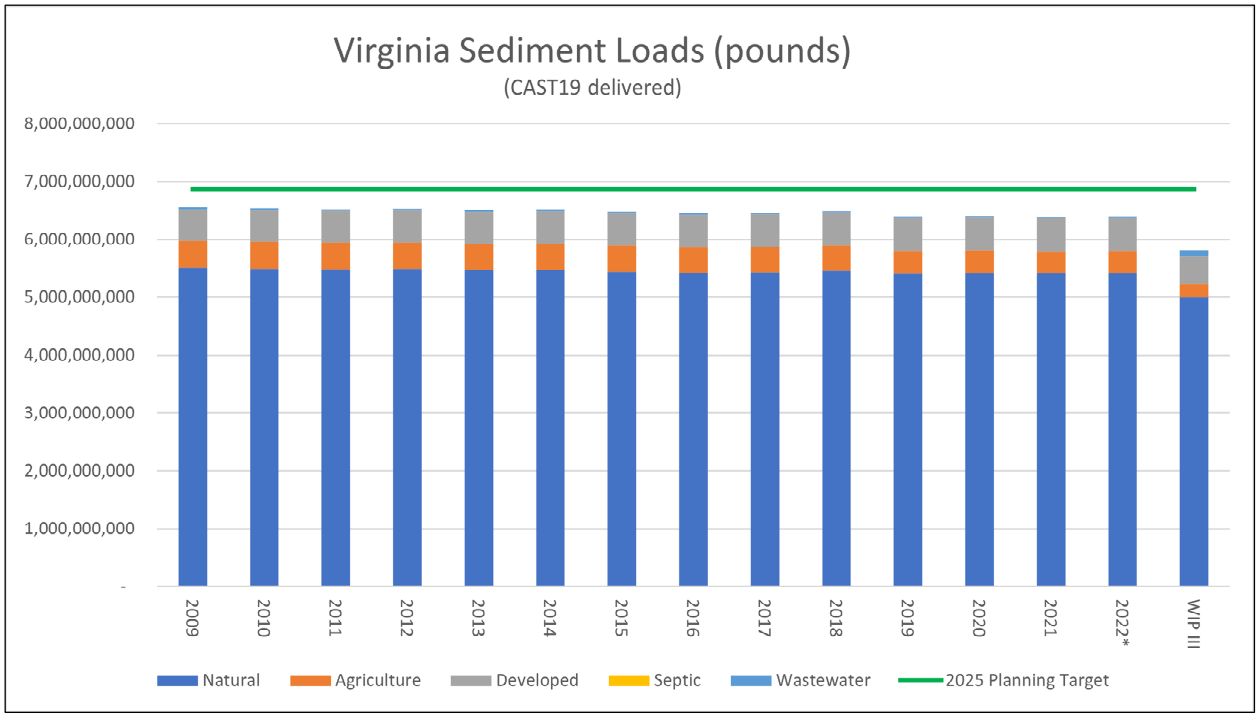

Figure 1.3: Virginia's annual sediment load progress within the Chesapeake Bay 2009-2022, including WIP III planned 2025 loads.

1.4 Challenges for Virginia's NPS Pollution Management Program

DEQ has also identified challenges facing the NPS program that could affect the Commonwealth's ability to continue on its successful path.

Challenge #1: Resources

Like many other states, Virginia is facing a growing list of activities to be completed with a fixed or dwindling pool of federal resources. Over the long term, this can impact Virginia's ability to meet all NPS goals, objectives, and milestones.

Challenge #2: Partner Engagement

Additional funding options such as other state or federal funding opportunities have increased. This, in addition to fewer applications and increased requirements of 319 funding, has decreased the number of partners seeking funding.

Challenge #3: Cost of BMP Implementation

Currently the program's partners are experiencing increased costs to implement BMPs. The cost of supplies and materials have significantly increased over the last year. Inflation also increased during the past year.

1.5 Future Opportunities for the Virginia NPS Pollution Management Program

DEQ continues to identify opportunities for new partner engagement and increased efficiency in the program. This includes more coordination with Bay WIP implementation efforts and enhanced outreach with the addition of new staff. Virginia has begun the process to examine the Non-Point Source Management Plan prior to the next cycle.

1.6 Environmental Justice (EJ) and Climate Change in the NPS Program

DEQ has committed to environmental justice work throughout the Agency including the hiring of EJ coordinators. The NPS Program has coordinated outreach with the EJ coordinators. Specifically, within the NPS program, questions were added to the Request for Applications (RFA) process for 319 funding for EJ and noted during the process. A 319 grantee directly works with a Tribe in Virginia on BMP implementation and several grantees utilize income in determining the cost-share provided for bmp implementation. Virginia received additional 319 funding to support a training for all Tribes in Virginia on the 604 and 319 programs and the training is set to take place in 2024.

Additional state partner work in this area includes that for fiscal year 2022 and 2023, DCR contracted with Virginia State University's Small Farm Outreach Program to target farmers/ranchers of color and other socially disadvantaged farmers to increase their awareness of financial incentives offered by DCR and SWCDs. Also, Virginia CZM submitted a proposal on behalf of the UMIT (Upper Mattaponi Indian Tribe) and is currently serving as fiscal agent for the project. The UMIT closed on the property sale in July of 2023 and will begin work on a Baseline Habitat Monitoring Plan. The anticipated date of completion for the whole project is March of 2024. The expansion of the onsite sewage indemnification fund provided in SB 1396 (in 2021) provides VDH with an ongoing financial resource (Indemnification Funds) to assist low-income households in repairing their onsite sewage systems. This legislation allows VDH to use the fund to provide grants and loans to households at or below 200% of the federal poverty guidelines to assist in repairing failed onsite sewage systems. In FY23 VDH intends to use FY24 to develop the mechanism to utilize Indemnification Funds to fund onsite repairs

Virginia continues to address resiliency efforts including the updated Virginia Coastal Resilience Master Plan. Additionally, efforts on resiliency and environmental justice in the TMDL program will be outlined in the 2024 Integrated Report as part of Virginia's next Vision Framework.

1.7 No Discharge Zones (NDZ)

Federal law prohibits the discharge of untreated sewage from vessels within all navigable waters. A "No Discharge Zone" (NDZ) is an area in which both treated and untreated sewage discharges from vessels are prohibited. In 2021, EPA provided an affirmative determination for the

establishment of an NDZ for Sarah Creek and Perrin River in Gloucester County, Virginia. The NDZs were finalized in Virginia regulations in June 2021. Implementation efforts in the form of signage and outreach continues for these waters as well as other waters with previously established NDZs.

DEQ is in the process of completing an NDZ application for many of the tidal waters in the four counties of Virginia's Northern Neck: Richmond, Lancaster, Northumberland, and Westmoreland. The tidal waters included are tributaries of the Rappahannock River, Potomac River, or Chesapeake Bay.

In 2022, DEQ completed an investigation of options for additional NDZs in the Chesapeake Bay's tidal tributaries as a part of the strategy in Virginia's Phase III WIP, which provides that "[t]he Commonwealth, in consultation with stakeholders, will consider options available under the Clean Water Act to apply to the Administrator of the EPA for a No Discharge Zone (NDZ) for all or portions of the Chesapeake Bay mainstem and its tributaries." As a result of this investigation, DEQ is developing a strategy for additional NDZ development in the Chesapeake Bay's smaller and secondary tidal tributaries. The development of the strategy will include the collection and analysis of a multitude of datasets and performing stakeholder outreach.

1.8 About This Document

This report fulfills the DEQ's legislative requirement under § 319(h)(8) and (11) of the Federal Clean Water Act (33 USC 1329). The format of this report meets the annual reporting requirements outlined in the most recent EPA § 319(h) guidance "Nonpoint Source Program and Grants Guidelines for States and Territories" that was issued on April 12, 2013. It provides:

- A brief summary of progress toward meeting approved milestones as well as the short- and long-term goals and objectives identified in the state NPS management program.
- A table of relevant information on milestones from the current year.
- A summary of the available information on NPS pollutant reductions achieved as a result of NPS program implementation.
- A summary of the available information on the improvement in water quality as a result of NPS program implementation.
- Brief case studies of particularly successful NPS control efforts.
- Information on increased public awareness of NPS pollution and engagement.
- Successful efforts to integrate and align Clean Water Act programs to better deliver water quality results, or other especially successful partnerships.

Chapter 2: Summary of FY2023 NPS Program Activities contains information on all progress and achievements of the various programs and statewide partners; it is the substance of the programmatic activity for the past year. Chapter 2 outlines the many layers of programmatic planning and implementation activities. To present this information in a logical way, this report follows the structure of the *Virginia NPS Pollution*

Management Program Plan (referred hence forth as "2019 Plan" or "Plan"). Within each program element (e.g., water planning, agriculture), there are *objectives* that lay out the different segments and work to achieve the goals. Within each objective, there are specific *activities* that the NPS program performs; these are the day-to-day tasks leading to program success. Each of these activities can be quantified in one of the *milestones*, providing a way to measure our progress.

Chapter 3: Virginia 2019-2024 NPS Program Milestones summarizes progress on the individual milestones Virginia made a commitment to address in the 2019 Plan. This chapter includes a description of an associated milestone tracking tool used to help monitor progress.

Chapter 2: Summary of FY2023 NPS Program Activities

This chapter highlights state and local agency initiatives, accomplishments, and implementation of goals for every program that contributed to Virginia's 2019-2024 NPS Pollution Management Program Plan. For key plan areas, the original objectives and accomplishments related to program activities are presented. More detailed implementation information is provided in Chapter 3: Virginia 2019-2024 NPS Program Milestones.

2.1 Watershed Planning and Implementation

Virginia's Watershed Programs include the development of total maximum daily loads (TMDL) and TMDL implementation plans, as well as NPS implementation. The goal is to implement targeted, on-the-ground actions (BMPs, education and outreach, technical assistance) identified in TMDLs and implementation plans, which will result in water quality improvements, attainment of water quality standards, and the subsequent delisting of impaired waters. Table 2.1 summarizes the relationships among the Water Planning Programs' objectives, activities, and milestones, as well as which NPS Plan goals they address.

Table 2.1: Water Planning Program Objectives

Water Planning Programs Objectives	Goals	Activities	Milestones
A: Watershed Assessment and TMDL Development	1-3	1-4	W01, W07
B: Implementation Plan Development	2	5-6	W02
C: Watershed Implementation Project	1-5	7-11	W03, W06, W08, W09
D: Compliant NPS Pollution Management Program	1-5	12	W00
E: Water Quality Improvement	1-5	13-15	W010, W011, W012, W013

Objective A: Watershed Assessment and TMDL Development
Summary: Based on the 2022 IR, Virginia estimates that 8,470 miles of rivers, 85,368 acres of lakes, and 2,060 square miles of estuary are impaired and require TMDLs. To maintain a robust pace of TMDL development with level funding, Virginia has developed several strategies including: a) developing TMDLs using a watershed approach to address multiple impairments in watersheds with similar characteristics; b) developing TMDLs in-house; c) identifying non-TMDL solutions, such as plans that outline BMP implementation strategies in predominantly NPS polluted watersheds; and d) developing TMDLs that are more easily implemented. Virginia continues to explore tools and options for restoring and protecting water quality, both for environmental benefit and efficient program management.
Activity 1: Biennially assess NPS pollution potential and indicators for prioritizing NPS corrective actions. The 2022 305(b)/303(d) Water Quality Assessment IR, approved by EPA in October 2022, includes chapter 5 "Nonpoint Source Assessment." This report assesses data and information through December 31, 2020.

Activity 2: Complete plans to address priority impaired waters so that 100% of our priority areas for 2016-2022 are met by September 2022.

DEQ implemented the national 2013 Vision for Implementing the CWA Section 303(d) Impaired Waters Program Responsibilities, which promoted the prioritization of impaired waters for TMDL or TMDL alternative development over a six year window (2016-2022). TMDL development for some of those priorities is continuing and included in the 2023-2024 two-year commitments discussed in Activity 3. Since 2000, a total of 1115 TMDLS have been developed. Figure 2.1 shows the number of TMDL equations by pollutant set across Virginia since the inception of the TMDL program.

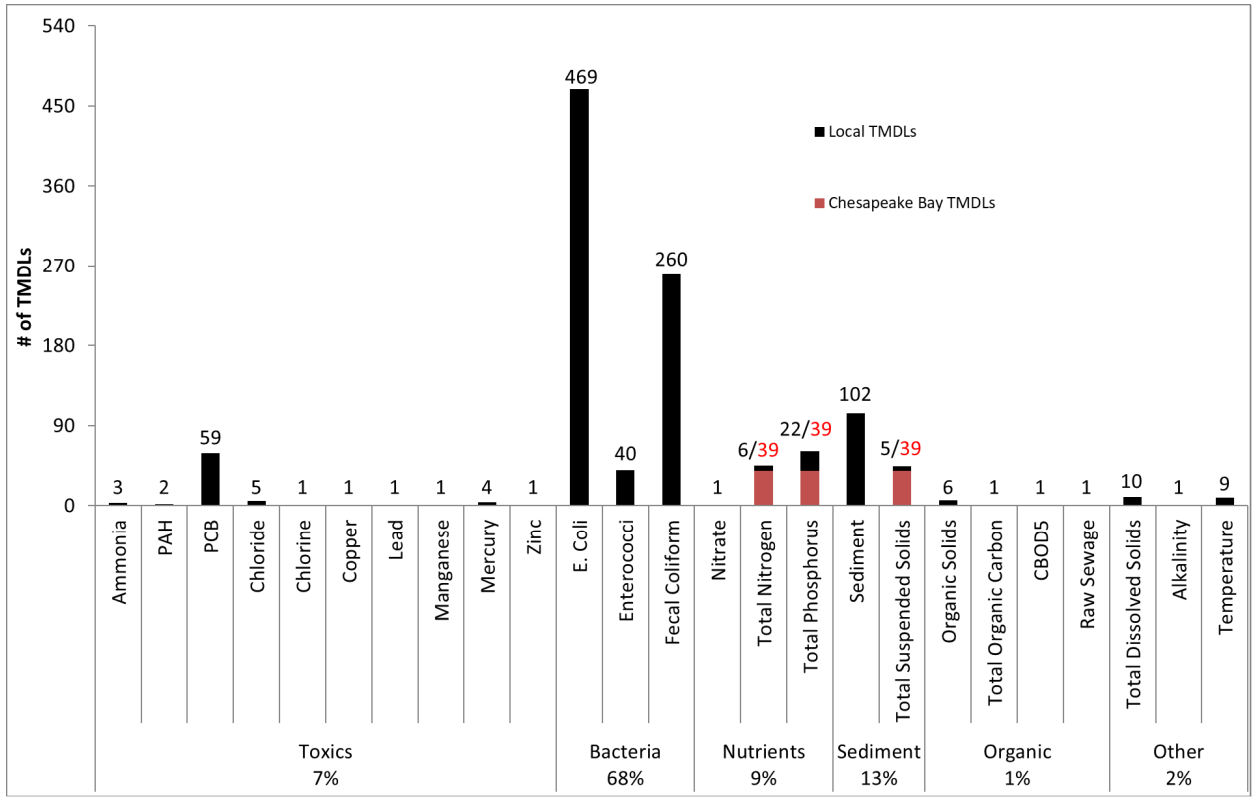

Figure 2.1: TMDL equations by pollutant since inception of TMDL program[1]
Activity 3: Establish a new set of priority waters. DEQ is implementing the second cycle of the 303(d) Vision (aka "2022 Vision") finalized in September 2022 and effective through 2032. The 2022 Vision asks states, territories, and tribes to develop a long-term Prioritization Framework outlining water quality goals through 2032. It also calls for states, territories, and tribes to provide shorter-term commitments for TMDL or Advance Restoration Plan (ARP) development every two years in conjunction with the Integrated Report cycle from 2024-2032. In preparation for the 2022 Vision, DEQ sought public input in September 2020 to inform the process of identifying types of water quality impairments and other strategic measures that may be considered for the 2022 Vision. DEQ is currently developing the Prioritization Framework as well as the two-year commitments for the 2025-2026 period, both of which will be included in the 2024 Integrated Report and related public process. While EPA was finalizing the 2022 Vision, each state was asked to develop two-year commitments for TDML or ARP development for the 2023-2024 period. This list of two-year commitments was included in the 2022 Integrated Report that included the solicitation of public comment in June 2022 and that was approved by EPA. The final list of 2023-2024 commitments can be found on VA DEQ's TMDL Development website.
Activity 4: Continue to develop TMDLs to work toward meeting 100% of priority areas DEQ is currently working on developing TMDLs or Advance Restoration Plans for the priority waters included in the 2023-2024 commitments noted in Activity 3. An ARP is a near-term plan, or description of actions, with a schedule and milestones. It can be used in advance of a TMDL for watersheds in which an ARP is determined to be more immediately beneficial or practicable to achieving water quality standards. DEQ currently has an ARP in development for a benthic impairment in Black Creek and Hat Creek. The causes were determined to be sediment and phosphorus.

Objective B: Implementation Plan Development
Summary: To address the load allocations prescribed in TMDLs, TMDL Implementation Plans (IPs) or watershed-based plans (WBP) are developed, which describe actions (i.e. BMPs) to address water quality impairments. To maximize the use of resources, DEQ has developed a long-term prioritization process for IP development to mirror its TMDL prioritization process and has also identified geographic priority areas for IP development.
Activity 5: Develop approximately three (3) implementation plans (IPs) per year that address fifteen (15) total impaired waterbody segments.

[1] The graph includes TMDL equations reported previously and newly adopted equations. In some instances, previously established TMDLs were superseded by revised TMDLs. Supersession can be one equation replacing another or one equation replacing many equations.

In FY2023, DEQ and partners finalized 1 IP covering 9 impairments. Two IPs covering 16 impairments were under development at the end of the fiscal year. Since 2001, Virginia has developed 84 IPs addressing 551 impairments. Figure 2.2 summarizes IP development since 2001. Figure 2.3 illustrates the locations of the 84 EPA approved IPs as well as the 2 IPs currently under review by EPA that are not yet approved.

In the following figures and tables there will be mentions of the following terminology:

Under Development: IP report is being drafted as part of a process that involves data gathering, modeling, and public participation either in house and/or with a contractor to meet EPA's nine elements of watershed-based planning.

Developed: IP report that is developed after the final public comment period with any comments (public or internal) incorporated; date generated once final draft of the implementation plan is e-mailed to technical reviewer.

Approved: IP has been reviewed by EPA and satisfies the nine elements of watershed based planning; the IP and its associated watershed area is eligible for CWA Section 319(h) funds

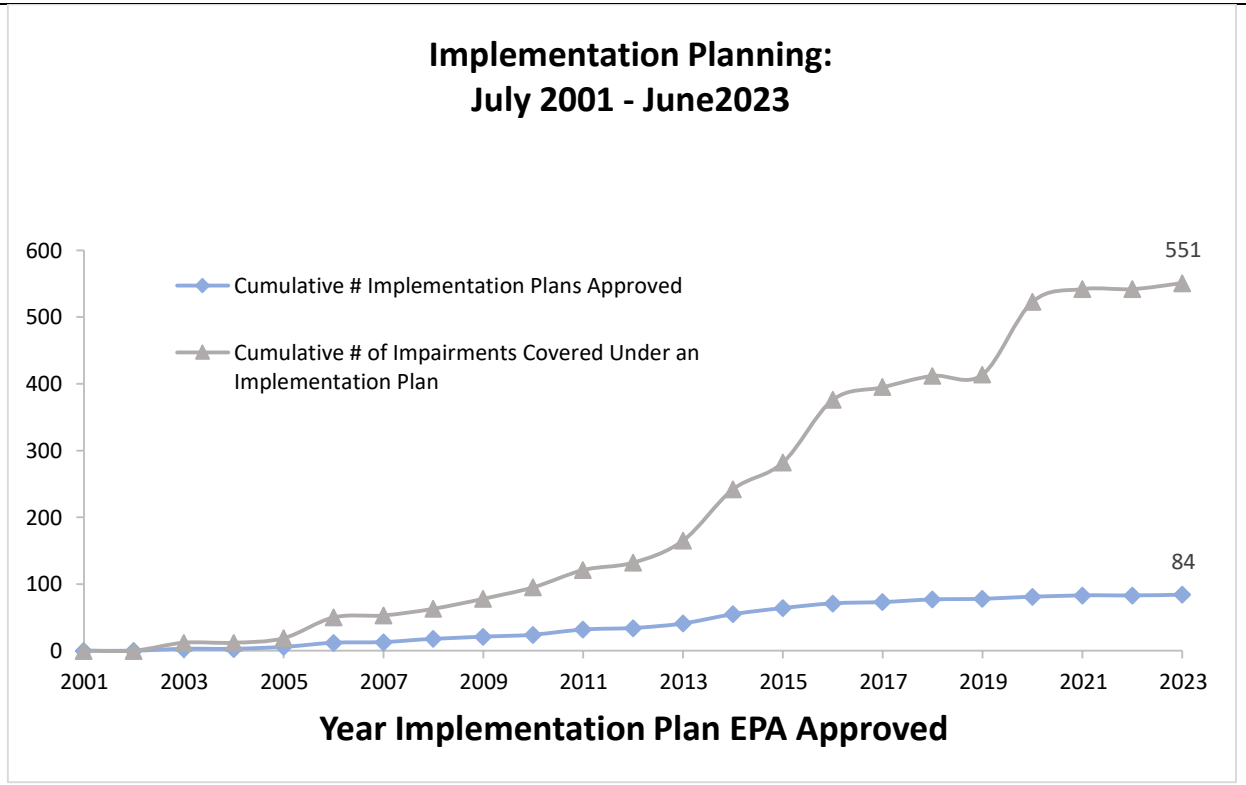

Figure 2.2: Cumulative Summary of Implementation Plan Development (July 2001 – June 2023)

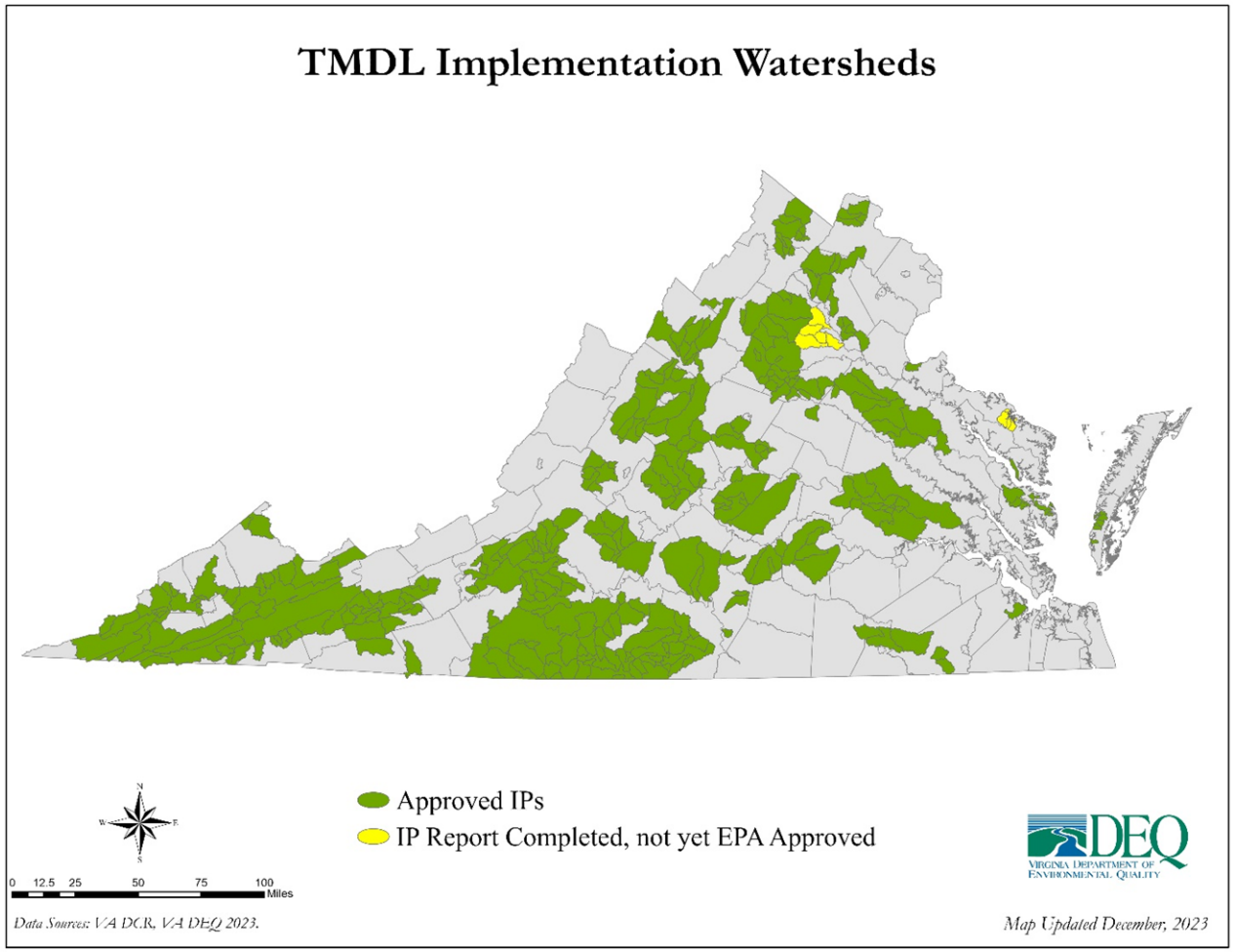

Figure 2.3: Implementation Report Status (July 2001 – June 2023)

In FY2023, DEQ has achieved 46% of the FY2024 goal for number of plans completed and 120% of the goal for number of impairments addressed. Table 2.2 summarizes progress toward meeting five-year goals.

Table 2.2: Progress of implementation planning based on FY2024 NPS goals and milestones

Goal	FY2020 Actual	FY2021 Actual	FY2022 Actual	FY2023 Actual	Total FY2020-23	FY2024 Goal	% Progress of FY2024 Goal
# Implementation and Watershed Plans Developed	2	2	2	1	7	15	46%
# Impairments Addressed by Implementation Plans	16	19	28	9	72	60	120%

A list of plans developed in FY2023 can be found in Table 2.3; a partial but growing list of developed implementation plans can be found on DEQ's Implementation Planning webpage.

Table 2.3: Developed implementation plans (July 2022 – June 2023)

Watershed (# of impairments / # of impaired segments)	Location (county or city)	Impairment[2]	Fiscal Year Developed
Yeocomico River (13/13)	Northumberland, Westmoreland Counties	Bc	2023
South Fork Holston River (14/14)	Washington, Smyth Counties	Bc	2024*
Moores and Mill Creek (2/2)	Rockbridge, Augusta Counties	Be	UD*

[2] *Impairment types: Bc = bacteria, Be = Benthic, UD indicates IP under development. *IP awaiting EPA approval*

Activity 6: Develop a long-term prioritization process for IP development and a biennial prioritized list of existing TMDLs to be addressed by IPs.

As funding limitations have continued over the years, it has become increasingly important to evolve the implementation planning program. DEQ is continuing to evaluate the prioritization methods of developing implementation plans, as well as how these plans are written. Several strategies are being looked at to increase efficiencies in the development of IPs. This includes increasing efforts to pursue the production of joint TMDL-IP reports (i.e., where an IP is developed alongside each TMDL), exploring TMDL alternatives, evaluating larger watershed areas, pursuing more watershed-based plans, and simplifying modeling efforts. These efforts have allowed the implementation planning program to seek new opportunities to perform more development work in-house. Sediment/benthic impairments were prioritized in FY2021 in the development of implementation plans following suit to FY2021 TMDL priorities. Bacteria impairments continue to be the most common pollutant to Virgina waterbodies and are addressed through many already approved IPs developed since 2001.

Objective C: Watershed Implementation Projects

Summary: The goal of the NPS Implementation Program is to implement targeted actions identified in implementation plans, which will result in water quality improvements, attainment of water quality standards, and the subsequent delisting of impaired waters. To meet this goal, DEQ maintains up-to-date BMP guidelines, funds implementation, and tracks and reports BMPs installed, funds spent, and associated pollution reductions. A mix of federal grants (319(h) and CBIG) and state resources are used to support project management and technical support from both DEQ and partner staff, as well as to fund a cost-share program for BMP implementation.

Activity 7: Continually fund 10-15 implementation projects annually.

Requests for Applications (RFA) are issued annually to identify candidates for Section 319(h) funding. The 2023 RFA was issued in April 22, 2022 and closed August 31, 2022; applications for three new project areas and ten continuing project areas were received requesting a total of over $650,000 and providing over $630,000 of match. All three projects were granted a total of over $650,000 of 319(h) funding to start projects in 2023. The results of the 2024 RFA, which closed August 2023 will be discussed next year and will be used to develop Virginia's application for 2025 funding that will be submitted in May 2025.

The NPS Management Plan has a goal to provide 319(h) funding for active implementation projects in 38 of the approved IP areas between 2020-2024 and to have by 2024 some level of implementation (funded with state and 319(h) funding) in 73 IPs. During FY2023, DEQ has approached 87% (33/38) of the goal to provide 319(h) funding for projects in approved IP areas. Virginia has also exceeded the 2001-2024 goal of having some level of implementation in 73 IPs, a total of 92 IPs have had some sort of implementation within them.

Table 2.4: Implementation project activity in developed IPs; a comparison between planning cycles

Timing of Implementation Activity	# IPs	# IP Watersheds
IPs Developed by June 30, 2023	100	364
IPs Approved by EPA, as of June 30, 2023	84	323
• **Target: IPs with 319(h)-funded Implementation Projects, 2020-2024**	**38**	**195**
○ **Actual: IPs with 319(h) funded projects during FY2023**	29 (76%)	144 (73%)
○ **Actual: IPs with 319(h) funded projects during FY2020-FY2023**	30 (79%)	170 (87%)
• **Target: Cumulative Implementation Activity, 2001-2024**	**73**	**284**
○ **Actual Cumulative Implementation Activity, 2001-2023**	92 (126%)	306 (107%)
▪ **All BMP Activity in all Completed IPs During FY2023**	80 (109%)	328 (115%)
▪ **All BMP Activity in Approved IP Areas During FY2023**	70 (95%)	301 (105%)

Since the NPS Implementation Program began in 2001, a total of 80 NPS projects have actively targeted implementation in developed TMDL IPs (Figure 2.3). Some IPs have more than one active project at a time, thereby simultaneously addressing different source sectors or subwatersheds within the same IP (Figure 2.4).

Approximately 55% of these projects were funded exclusively with federal 319(h) funding, the remaining 45% of the projects were funded with a combination of state and federal 319(h) funding. During FY2023, 27 approved implementation plans had 29 active 319(h)-funded projects.

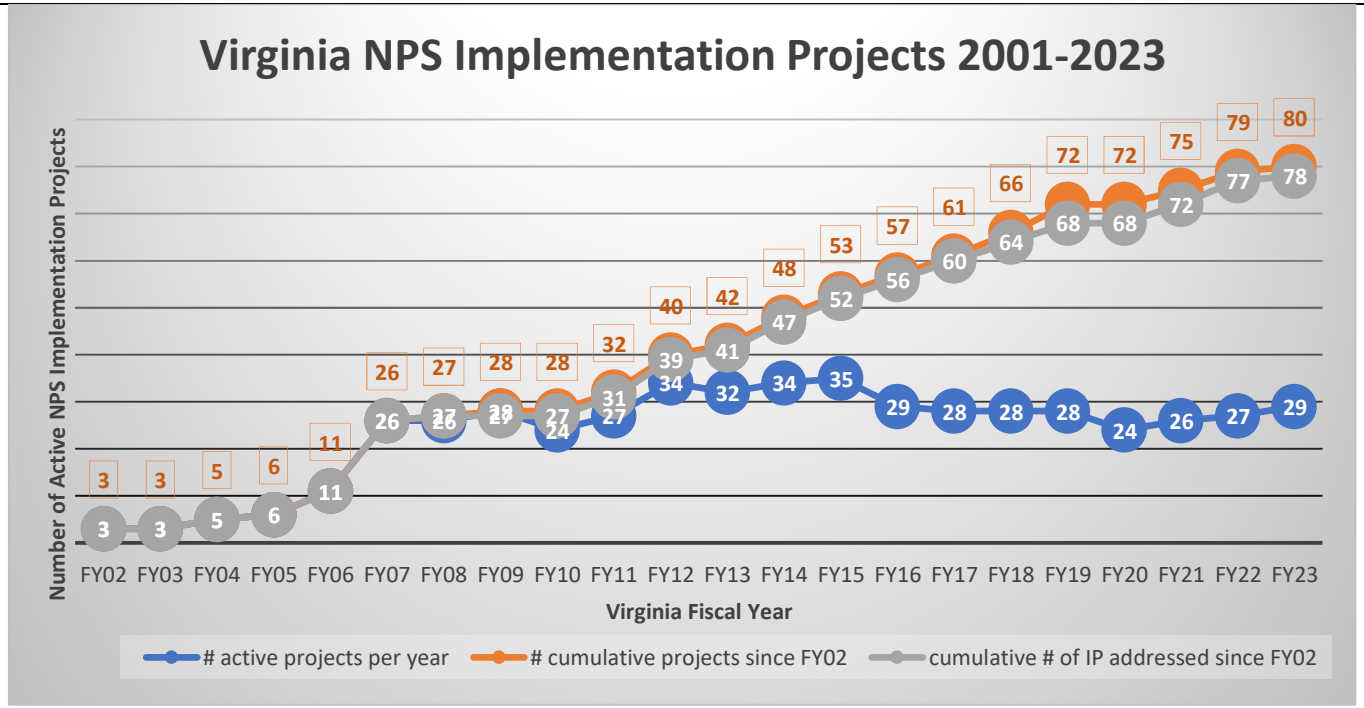

Figure 2.3: Summary of Virginia NPS implementation projects, 2001-2023

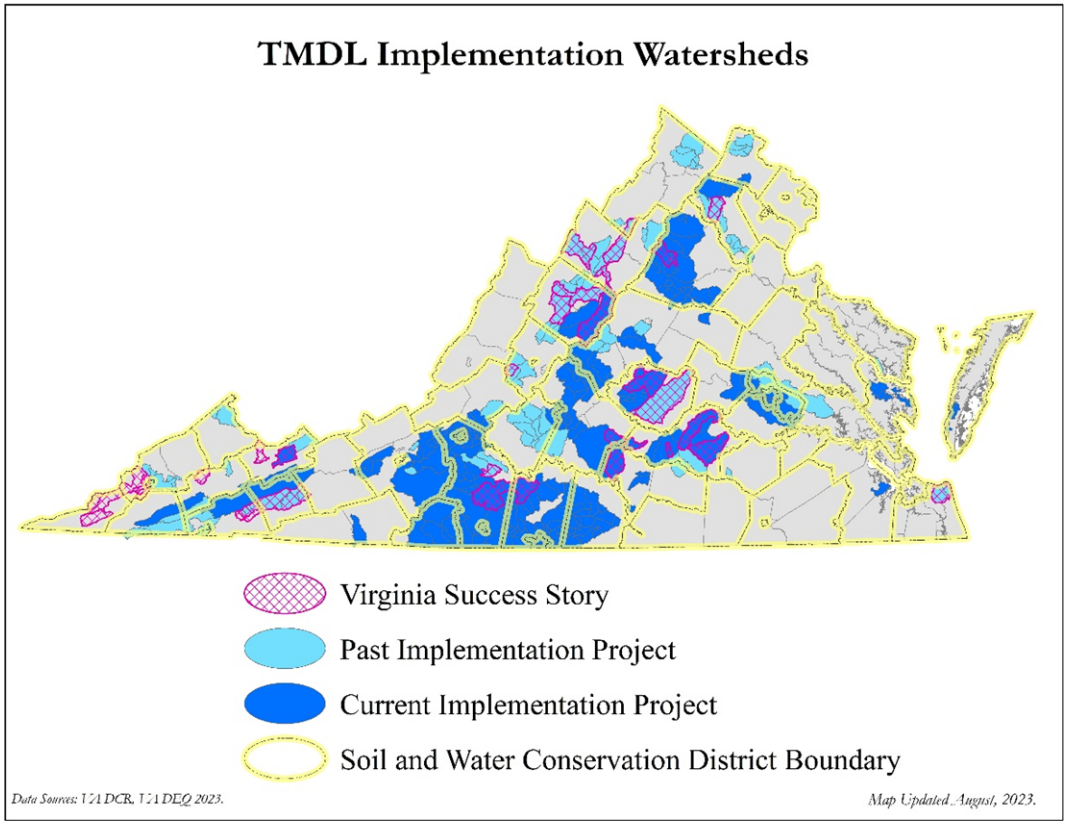

Figure 2.4: Map of Virginia TMDL implementation watersheds

In FY2023, DEQ funded 29 individual projects covering 27 separate implementation plan areas with Section 319(h) funds. Other state and federal funds administered by either DEQ or DCR were also available. Collectively, 4,369 residential septic and agricultural BMPs were installed within 79 IP areas that addressed 234 IP watersheds (Table 2.5). These BMPs cost a total of $28.5 million, of which $24.4 million was provided by DEQ and DCR in the form of either state or federal cost-share assistance (excluding funds from USDA). Projects that were not run through Soil and Water Conservation Districts (SWCDs) or had urban BMPs are not included in table 2.5 and the following analysis.

Table 2.5: Comparison of key measures of implementation, FY2023 vs the NPS program (FY2002-2023)

Metric	FY2023	FY2002-2023

# Active Implementation Plans with BMP Installation	79	91
# IP Watersheds with BMP Installation	234	305
#BMPs Installed in IP Areas	4,369	43,502
Total BMP Cost	$28,523,247	$232,235,763
Total Cost-share Paid	$24,468,003	$164,427,135
Total 319(h) Cost-share Paid (does not include funds for technical assistance, outreach, BMP design, urban BMPS, or BMPs not developed by SWCDs)	$948,814	$17,510,096

Activity 8: Update DEQ TMDL BMP Cost-share Guidelines biannually.

DEQ updated its NPS BMP Guidelines and associated BMP specifications in July 2022. These guidelines provide the framework by which project partners implement BMPs associated with implementation projects using Section 319(h) funds and provide assurance that intended water quality benefits could be achieved by the installed BMPs.

Activity 9: Estimate and report annual reductions in nitrogen, phosphorous, sediment, and bacteria achieved via BMP implementation.

The residential septic and agricultural BMPs implemented within IP areas in FY2023 (Table 2.6) resulted in the protection and exclusion of 250 miles (1,320,319 linear feet) of the stream from livestock access, excluded 13,278 animal units, and created 3,684 acres of riparian buffer. In addition, 311 homes had their septic systems pumped or had straight pipes or failing septic systems addressed

Table 2.6: Comparison of BMP outputs of implementation plan watersheds, FY2023 vs the NPS program (FY2002-2023)

Metric	VA FY2023	FY2002-2023
# Active Implementation Plans	79	91
# IP Watersheds	234	305
#BMPs Installed	4,369	43,502
Stream Protected (Linear Feet)	1,320,319	14,417,407
Stream Exclusion Buffer Created (Acres)	3,684	18,938
Animal Units Excluded	13,278	571,291

Residential Septic Systems	311	5,980
Bacteria (CFU)	5.87E+16	6.57E+17
Total Nitrogen (lbs/yr)	4,089,752	25,189,751
Total Phosphorous (Lbs/yr)	67,004	449,758
Total Sediment (Tons/yr)	80,125	541,160

DEQ has calculated that these BMPs resulted in the reduction of 4.08 million pounds of nitrogen, 67,004 pounds of phosphorous, 80,125 tons of sediment, and 5.87E+16 CFU of bacteria in IP areas. A detailed listing of BMP activity within IP areas is shown in Table 2.7. Virginia also reported all Section 319(h)-funded BMPs and pollution reductions in the Grants Reporting and Tracking System (GRTS) by September 30, 2023 (for BMPs installed by 6/30/2023), and DEQ continues to work with EPA to see that non-Section-319(h)-funded BMPs for select implementation plans are provided to EPA for entry into the Watershed Plan Tracker (WPT), a separate module within GRTS. Please note that these values only account for specific BMPs within IP areas and do not address all agricultural or septic BMPs installed throughout the Commonwealth which may be addressed in other parts of this report. Nor do these figures account for the work not completed by SWCDs (including urban and septic). This information is currently entered into DEQ's BMP Warehouse, and DEQ is working to integrate that information into NPS annual reporting.

Table 2.7: BMP installation within IP areas in FY2023 (July 1, 2022-June 30, 2023)

BMP Name	# BMPs	Extent Installed	Unit
Animal Waste or Composter Facilities	59	59	Count
Cover Crops	3,381	159,605	Acres
Extension of Watering System	43	1,850	Acres
Exclusion of Livestock from Stream Exclusion Practices	-	13,278	Animals
Farm Road, Animal Travel Lane, Heavy Use Area Stabilization	1	0.2	Acres
Loafing Lot Management System	1	1	Count
No-Till or Minimal Till	176	10,745	Acres
Pasture or Grazing Land Management	24	2,108	Acres
Pasture Management Calculated from Grazing Stream Exclusion	-	14,636	Acres

Riparian, Forested, Woodland or Vegetated Buffer	32	164	Acres	
Riparian Buffers Created from Stream Exclusion Practices	-	3,684	Acres	
Roof Runoff Management System	1	1,550	Sq. Feet	
Sediment Retention, Erosion, or Water Control Structures	2	2	Count	
Septic Connection to Public Sewer	1	1	Count	
Septic System Alternative system	8	8	Count	
Septic System Repair	45	45	Count	
Septic System Replacement	35	35	Count	
Septic Tank Pump-out	222	222	Count	
Sod Waterway	4	5	Acres	
Stream Exclusion, Grazing Land Management or Stream Protection and Stream Exclusion Maintenance	312	1,320,319	Lin. Feet	
Tree Planting (crop, hay, and pasture)	22	389	Acres	
Total	**4,369**			

Activity 10: Report on the progress of meeting goals and milestones of select number of implementation plans.

As demonstrated in Activity 9 above, DEQ calculates the pollution reductions for nitrogen, phosphorus, sediment, and bacteria by tracking BMP installations in IP areas. Each year, DEQ presents progress reports on implementation plans with active projects regarding their status of meeting goals and milestones. Progress reports are produced for implementation plans that receive Section 319(h) funds, but in some instances progress reports can be written in implementation plan areas that have had a significant level of implementation not funded by Section 319(h).

Implementation plan progress reports will first be reported in the year after the project starts and will continue for one year after the project's funding has ended (to allow for one year of post-implementation water quality monitoring data). Reports are generally updated every two years when the project is active. For a list of all implementation projects with progress reports can be found on the Implementation Projects webpage.

DEQ plans to report on 50% of the actively Section-319(h)-funded implementation plans annually. Table 2.8 shows the schedule of individual progress reports for the five-year management plan reporting cycle for 319(h) active projects. In FY2023, because of resource limitations and staff vacancies in the NPS program implementation plan project reports were not created and reports will be completed in FY24.

As new implementation plan projects are funded, this table will be amended. In the table 'New' indicates the first progress report for a new 319 implementation grant area, 'Final' indicates a close out report was written, and '1' indicates a progress report for an ongoing 319 project area.

Table 2.8: Schedule of Individual implementation project reports by IP report name included in the NPS Annual Report, FY2019 through FY2024

IP Report Name	FY2023 Active Projects	FY19 AR	FY20 AR	FY21 AR	FY22 AR	FY23 AR	FY24 AR
Banister River, Winn Creek, and Terrible Creek	1	1	-	1	-	-	-
Birch Creek and Dan River	1	-	New	-	-	-	1
Buffalo, Colliers, and Cedar Creeks Watershed	0	1	-	Final	-	-	-
Chestnut Creek	1	-	-	1	-	-	1
Clinch River and Cove Creek- Copper and Molls Creeks	1	1	1	-	-	-	1
Crab Creek	1	-	-	-	-	-	-
Flat, Nibbs, Deep and West Creeks	1	1	-	1	-	-	-
Hardware and North Fork Hardware River	1	1	1	-	-	-	1
James River and Tributaries - City of Richmond	1	-	-	1	-	-	1
Little Calf Pasture	1	-	-	-	-	-	-
Mattaponi River	1	-	-	-	-	-	-
Robinson River and Little Dark Run	1	1	-	1	-	-	-
Middle Clinch River	1	-	-	-	-	-	-
North Fork Holston River: Scott, Smyth and Washington Counties	1	1	1	-	-	-	1
Piankatank River, Gwynns Island, Milford Haven	1	-	-	-	-	-	-
Slate River and Rock Island Creek	1	1	1	-	-	-	1
Smith River, Mayo River and Blackberry Creeks	0	1	-	Final	-	-	-
South River and Christians Creek Watershed	0	1	-	Final	-	-	-
Spring, Briery, and Saylers Creeks and Bush and Little Sandy Rivers	1	1	-	1	-	-	1
The Gulf, Barlow, Mattawoman, Jacobus and Hungars Creeks	0	1	-	1	-	-	-
Tye River, Hat Creek, Rucker Run and Piney River Watershed	1	1	1	-	-	-	-
Upper Clinch River Watershed	2	1	-	1	-	-	-
Upper Goose Creek, Cromwells Run and Little River Watershed	1	1	-	1	-	-	-
Upper Hazel River, Hughes River, Rush River and Thornton River	1	1	1	-	-	-	1
Upper Rapidan River	1	1	1	-	-	-	1
Upper Roanoke River - Part 1: Mudlick, Glade and Tinker Creeks	2	1	1	-	-	-	1
Upper Roanoke River – Part 2: North Fork and South Fork	1	-	-	-	-	-	-
Upper York River Watershed	1	1	1	-	-	-	1
Sub-total	**27**	**19**	**9**	**12**	**0**	**0**	**12**

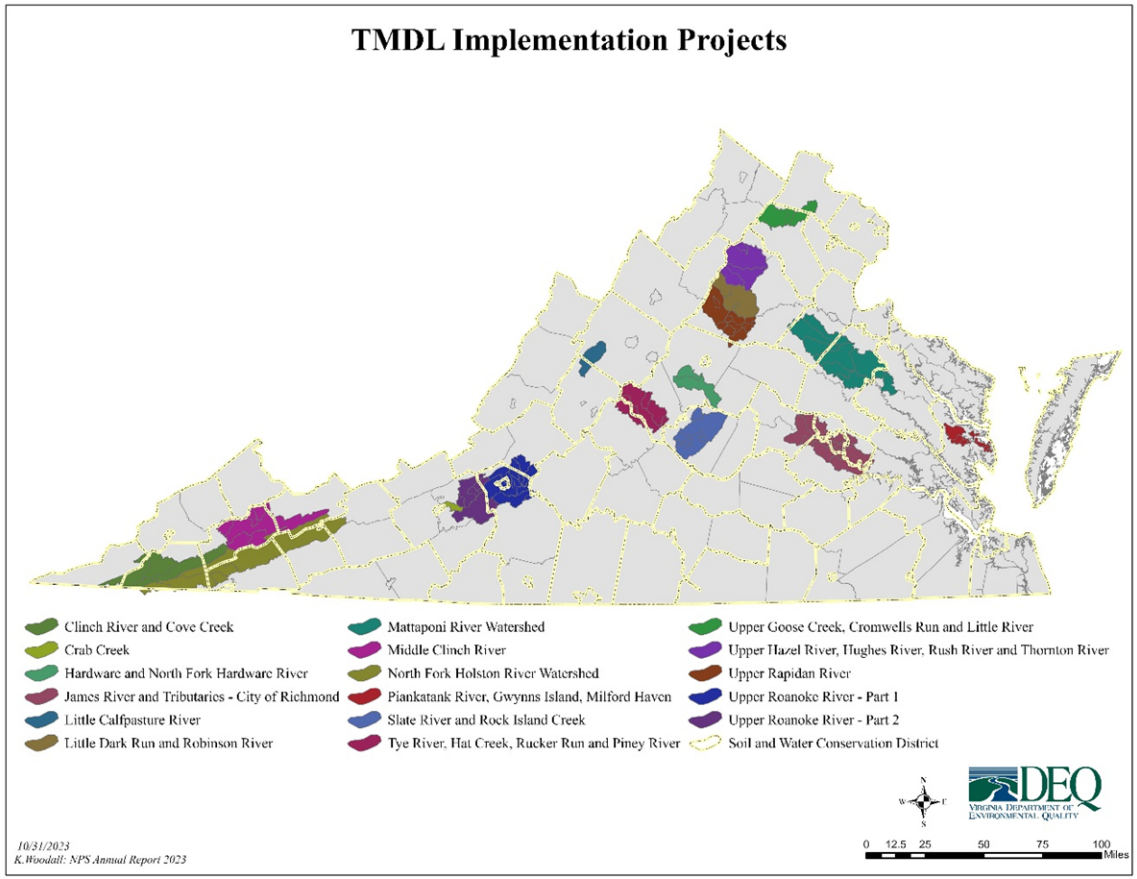

Figure 2.5: Map of implementation projects through June 30, 2023

Activity 11: Further develop databases and tools to track implementation progress.

In fall of 2019, DEQ contracted for the development of a requirements document to create the methodology and plan to address any system issues and updates related to the BMP Warehouse and various modules within DEQ's Comprehensive Environmental Data System, CEDS

(including Water Quality Assessment, TMDL, and TMDL IP modules), as well as for the creation of the Section 319(h) grant program management module. In early 2020, DEQ contracted to make substantial edits to several existing modules within CEDS, as well as edits to the BMP Warehouse. Development of user interface components will address a variety of functionality requirements. By December 2020, 100% percent of the 15 individual updates were completed. These integrated the Water Quality Assessment, TMDL, and TMDL IP modules related to tracking impairments and assessment units. The TMDL IP module and the BMP Warehouse were also updated to better assist in the tracking of BMPs related to implementation efforts. On-going efforts to continue to improve implementation tracking continues.

Objective D: Compliant NPS Pollution Management Program

Summary: DEQ is currently working under the EPA-approved 2019 Virginia NPS Pollution Management Program Plan, which is effective through September 2024.

Activity 12: Update VA's NPS management plan every five years.

The 2019 Plan, approved in Spring 2020, does not expire until September 30, 2024. Work on developing the next version of the management plan will not start in earnest until 2023. However, DEQ has met with partner agencies to kick off the discussion of plan development for 2024.

Objective E: Water Quality Improvement

Summary: Water quality improvements achieved through BMP implementation are evaluated through the monitoring of selected NPS implementation watersheds with active BMP installation. Successes are reported through the development of water quality success stories addressing either delistings or water quality improvements.

Activity 13: Support the monitoring of key implementation plan watersheds with active BMP installation.

DEQ has a robust water quality monitoring program. The annual monitoring plan encompasses all monitoring needs including monitoring within implementation plan areas to gauge the impact of implementation. DEQ utilizes Section 319(h) funding for formal "post-implementation monitoring" with monitoring locations shown in Figures 2.6 and 2.7. Additionally, DEQ uses other funding sources which provide critical water quality monitoring information in IP areas.

DEQ's monitoring plan is based on the calendar year. As such, the reporting period of FY2023 coincides with two separate water quality monitoring plans, 2022 and 2023. Table 2.9 shows the number of monitoring stations within IP areas, including a subset of those stations that were specifically funded with 319(h) resources for calendar year 2022 and 2023. A total of 616 stations within 69 IP areas (181 IP watersheds) are being monitored from January 1, 2023 through December 31, 2023.

DEQ has an EPA approved QAPP that covers monitoring for implementation activities.

Table 2.9: Comparison of DEQ water quality monitoring within IP areas in calendar years 2023 and 2022

Metric	Calendar Year 2023	Calendar Year 2022
Total # of WQM Stations within IP Areas	616	440
# of IP Reports with Monitoring	69	68
# of IP Watersheds with Monitoring	181	321
# of WQM Stations Funded with 319(h)	74	92
# of IP Reports with 319(h)-Funded Monitoring	29	30
# of IP Watersheds with 319(h)-Funded Monitoring	52	62

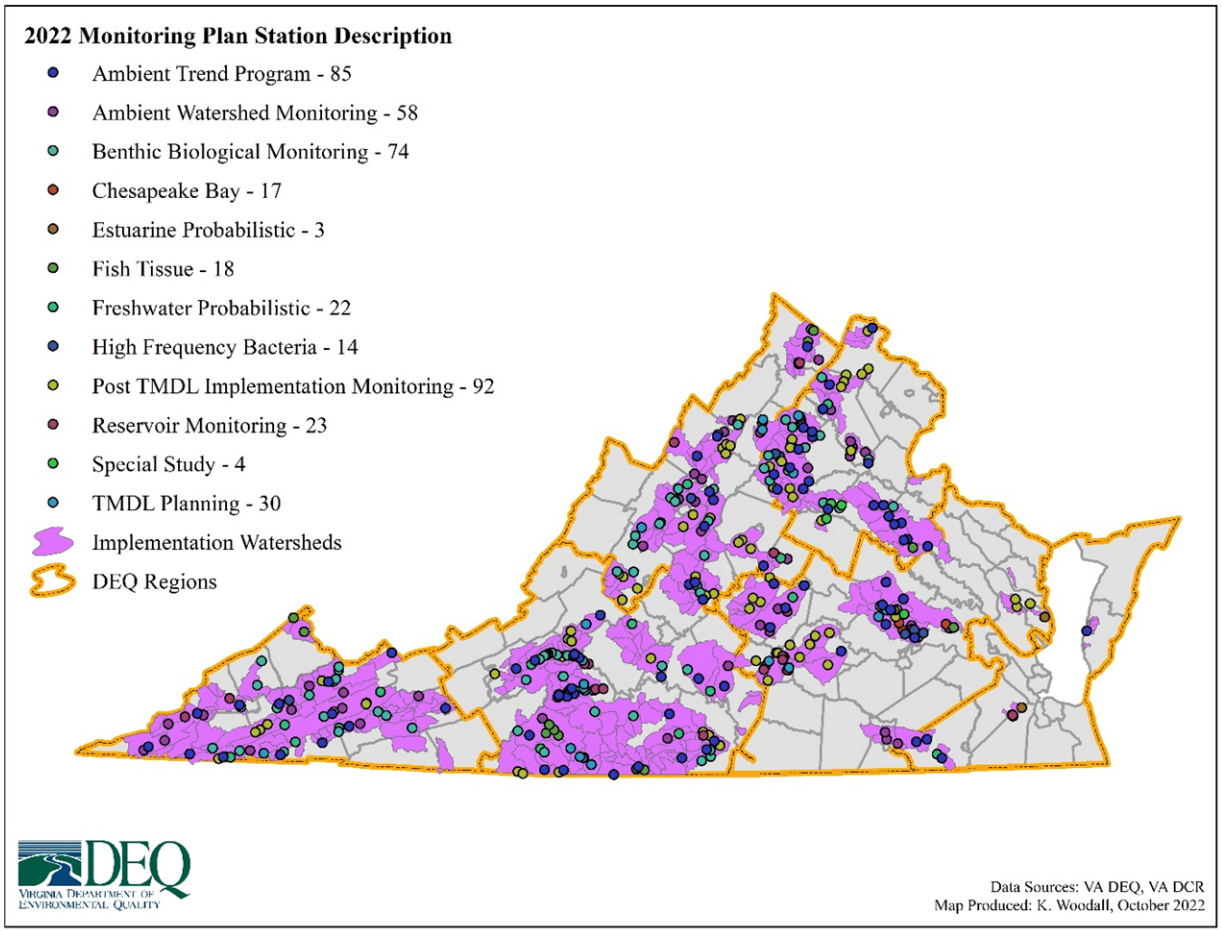

Figure 2.6: Calendar year 2022 DEQ monitoring stations within implementation plan areas

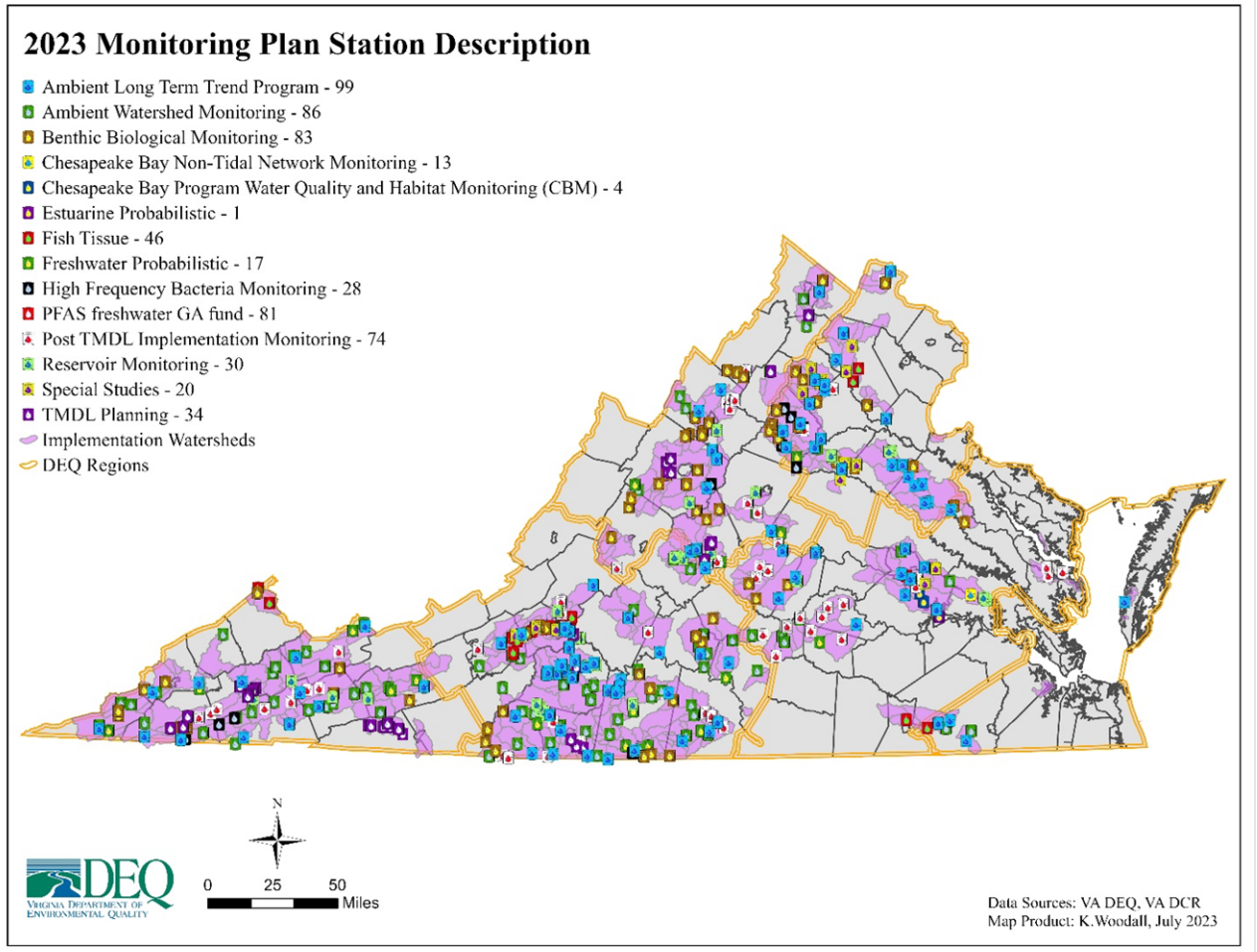

Figure 2.7: Calendar year 2023 DEQ monitoring stations within implementation plan areas

In addition, DEQ monitored for bacteria in Fifteenmile *Creek, War Branch and Mountain Run,* designated National Water Quality Initiative (NWQI) watersheds; NRCS/USGS monitored for other parameters (nutrients, etc.), as well.

Activity 14: Identify waterbodies in state's 303(d) list and IR that are primarily impaired by NPS pollutants and demonstrate a significant trend of improved water quality.

In 2023 two success stories were completed for two delisted segments (Table 2.10).

The stories in Table 2.10 are classified as Type 1 stories. Type 1 stories are defined as the delisting of impairments related to partial or full restoration of water bodies.

Table 2.10: Virginia TMDL Success Stories 2023

Water Quality Improvements	Success Story Waterbody Name(s)	Year
1	Spring Creek	2023
1	Turpin Creek in Slate River Watershed	2023

Figure 2.8 shows the location of success stories in Virginia from 2002-Present. These stories can be found on the Virginia's Nonpoint Source Pollution Success Stories webpage. Since 2002, Virginia's Nonpoint Source Management Program and its partners have written 35 approved success stories that address delisting and/or water quality improvement of 53 impaired stream segments.

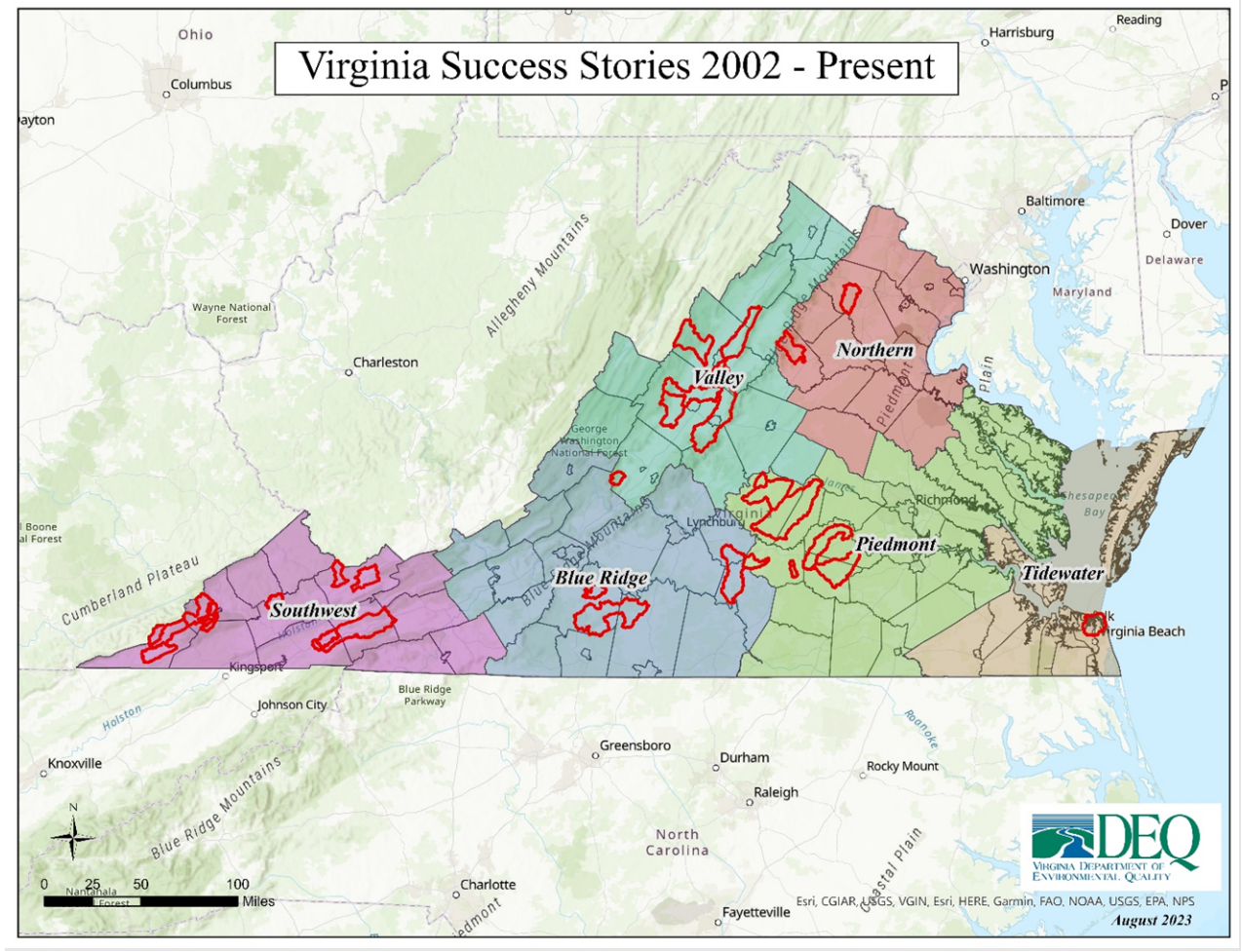

Figure 2.8: Virginia Success Stories (2002 – Present)

Table 2.11 lists delisted segments associated with Success Stories that are currently underway but not yet approved by EPA. These delistings were based on the 2022 approved 303d/305b Integrated Report. Reviewing the data from the 2022 305(b)/303(d) Water Quality Assessment Integrated Report and comparing it to the list of developed implementation plans, there were four delisted segments spanning four implementation plans covering 27.57 miles approved for delisting.

Table 2.11: Delistings within approved IP areas Proposed for Success Stories for FY24

IP Name	ID305	Sub-watershed Name	Category	Partial or Full	Cause	Miles
Buffalo, Colliers and Cedar Creek	VAV-I38R_CLL01A00	Colliers Creek	4A	Partial	Benthic Macroinvertebrates	15.11
Willis River Watershed	VAP-H36R_BFC01A08	Buffalo Creek	2A	Full	Benthic Macroinvertebrates	7.11
Upper Hazel, Hughes, Rush and Thornton River Watershed	VAN-E05R_RUS01B08	Rush River	2C	Full	Escherichia coli	3.35
Guest River Watershed	VAS-P11R_EAS01A06	Eastland Creek	2A	Full	Benthic Macroinvertebrates	2

Activity 15: Hold interagency meetings with target agency programs to further water quality improvement opportunities.

DEQ continued its effort to strengthen its relationships with other agencies to further NPS efforts. During FY2023, DEQ staff engaged in or participated in at least two agency/partner meetings or events per month for a total of at least 20 in the last year. These included:

- 12 meetings with DCR (to discuss interagency priorities and agricultural programs and practices)
- 1 meetings with VDH (including discussion on septic requirements and programs)
- 2 meetings with Virginia Energy (formerly DMME) (to identify priorities in resource extraction)

DEQ NPS staff also regularly engage with other programs within DEQ, such as the Clean Water Finance (to integrate revolving fund programs) and Coastal Zone Management.

2.2 Agricultural and Nutrient Management Programs

Guided by an annual Agricultural Needs Assessment, Virginia's agricultural programs use funding from the Virginia General Assembly to help meet water quality goals established in the Chesapeake Bay Watershed Implementation Plan, the Virginia NPS Pollution Management Plan, and the Chesapeake Bay and Virginia Waters Clean-up Plan. DCR administers funds for conservation programs that SWCDs deliver to the agricultural community. These programs include the Virginia Agricultural BMP Cost-Share Program (VACS), Virginia Resource Management Planning (RMP),the BMP Tax Credit Program, the Conservation Reserve Enhancement Program (CREP), and the Virginia Nutrient Management Program. Another Virginia agricultural NPS pollution control program is the Agricultural Stewardship Act (ASA) Program, administered by the Virginia Department of Agriculture and Consumer Services. Table 2.13 summarizes the Agricultural and Nutrient Management Programs' objectives, activities, milestones, and NPS Goals.

Table 2.13: Agricultural and Nutrient Management Programs Objectives

Agricultural and Nutrient Management Programs Objectives	Goals	Activities	Milestones
A: Agricultural BMP Implementation	1-5	1-6	A01, A02, A03, A05, A08, A09
B: Nutrient Management	1,3,4	7-9	A04
C: Resource Management Planning	1,3,4	10-11	A05, A06
D: Agricultural Stewardship Act Program	1,3,4	12-14	A07

Objective A: Agricultural BMP Implementation
Summary: Administered by DCR through local SWCDs, the Virginia Agricultural BMP Cost-Share Program (VACS) provides cost-share and technical assistance to promote implementation of cost-effective agricultural BMPs to reduce NPS pollution and improve water quality across the Commonwealth. The Program prioritizes BMPs providing the greatest reduction of nutrients and sediment with implementation targeted in TMDL watersheds including the Chesapeake Bay TMDL goals.
Activity 1: Complete an annual Agricultural Needs Assessment to guide funding and program allocation decisions. As reported in the FY2023 Chesapeake Bay and Virginia Waters Clean-up Report, the most recent Agricultural Needs Assessment projects a revised estimate of nearly $2.7 billion from state and federal funds as well as farmer financial contributions to meet water quality goals for the fiscal years 2020– 2030 (Figure 1 and Table 1). Approximately 38.5% of this total (nearly $1.0 billion) could be needed from state sources, the vast majority of which is direct funding of the Virginia Agricultural Cost-Share (VACS) Program and support for SWCDs implementing the VACS program.

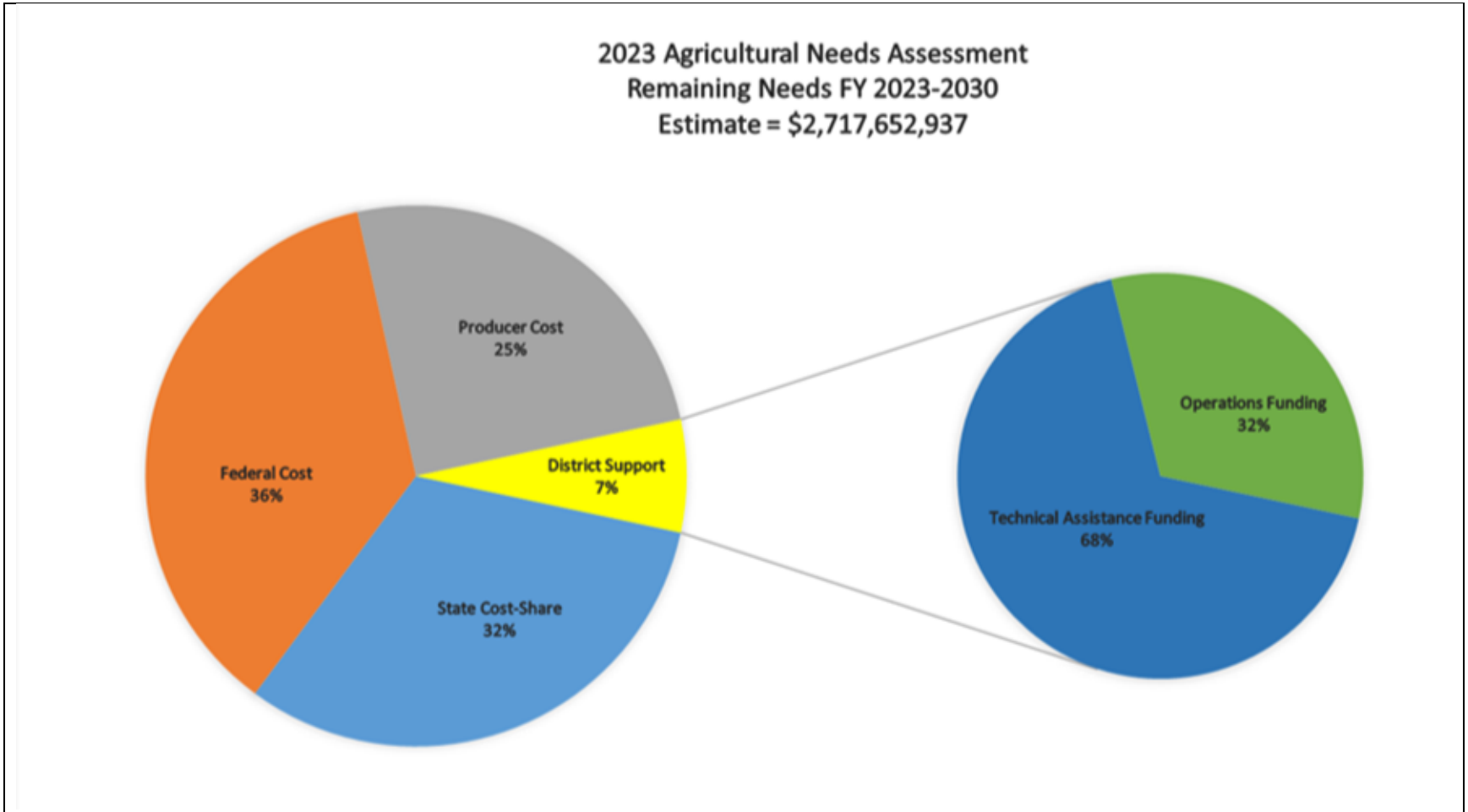

Figure 2.9: Summary of 2023 Agricultural Needs Assessment

Activity 2: Foster widespread adoption of cost-effective agricultural BMPs

Cost-share funds promote BMP implementation for pollution reduction while easing financial burden on producers. Hydrologic units with the highest potential to contribute agricultural NPS pollution to surface and ground waters receive the greatest amounts of cost-share funds, which

are then prioritized by SWCDs for projects maximizing local water quality benefits (Table 2.14). Pollution reductions from FY2023 state funding are summarized in Table 2.15.

Table 2.14: Cost data for agricultural BMPs completed in FY2023*

Actual BMP Cost	Total Cost-Share Paid	State Cost-Share Paid	Non-State Cost-Share Paid	Other Funding Amount	Farmer Cost Before Tax Credit	Tax Credit Amount Issued
$63,648,929.90	$59,192,959.07	$58,891,633.94	$301,325.13	$694,159.03	$3,761,811.80	$192,375.34

*2023 figures do not include approved BMPs carried forward into FY2023 that are awaiting completion.

Table 2.15: Pollutant reductions from agricultural BMP implementation in FY2023 – state funding only[3]

Nitrogen Reduction (lbs/year)	Phosphorus Reduction (lbs/year)	Sediment Reduction (tons/year)
15,808,525.81	221,877.36	220,297.61

Starting in FY2020, the VACS stream exclusion options were widely expanded, giving farmers a variety of cost-share options including continued funding for up to 100% of the practice cost based upon buffer width and contract lifespan (five to 15 years). Wide width buffers greater than or equal to 35 feet also receive a per acre buffer payment to incentivize the most valuable practices. The wide variety of options and buffer payment should significantly increase farmer sign-up. In FY2022, a portable stream fencing practice became state cost share eligible for the first time.

Further progress has been made on the priority funding which has provided 100% state-funded livestock stream exclusion for applications accepted from January 2013 through June 2015. As of June 2019, partially due to a supplemental appropriation by the Virginia General Assembly of $5.2 million, a total of approximately $92 million has been provided by the Commonwealth for this initiative including $48 million to producers within Virginia's Chesapeake Bay watershed. Once all 100% reimbursed SL-6 practices have been installed, they will include almost 9.5 million feet of stream excluded (Table 2.16). Over 2,300 SL-6 practices were funded by this initiative.

Table 2.16: Benefits achieved by 100% cost-share on livestock exclusion initiative

Location	Streambank Protected (linear ft.)	Animals Excluded
Chesapeake Bay Watershed	≈9.4 million	≈78,000

[3] Pollution reductions are calculated for all agricultural BMPS installed throughout the Commonwealth of Virginia. In addition, all nitrogen and phosphorous numbers now include estimates for nutrient management BMPs. 2023 figures do not include approved BMPs carried forward into FY2022 that are awaiting completion

Statewide Total	≈12.9 million	≈123,000

Activity 3: Implement the five-priority agricultural BMPs in the Chesapeake Bay watershed in order to meet the Commonwealth's nutrient and sediment pollution goals.

While Virginia no longer has five priority agricultural BMPs, select BMPs are prioritized for implementation, installation, and cost-share funding due to their Conservation Efficiency Factor scores. Conservation Efficiency Factor (CEF) is calculated by the AgBMP Tracking Module to serve as a ranking tool and provide some guidance for ranking applications implementing different BMPs. This tool is designed to assist Districts with the ranking of their cost share practice applications. The CEF uses eleven different components. Soil loss data is inputted by the District as well as the environmental information associated with the location of the practice on the earth. This generates a factor used to rank the proposed practice compared with other instances of the same BMPs as well as instances of other BMPs.

These practices are implemented via programs independent of agricultural cost share, and/or are implemented by DCR staff working directly with farmers. They include core or enhanced nutrient management, cover crops, livestock stream exclusion, animal waste storage, poultry litter transport, grass and forested riparian buffers, conservation tillage, and conservation plans/RMPs.

Select priority BMPs installed in FY2023 within the Chesapeake Bay are summarized in Table 2.17.

Table 2.17: Priority agricultural BMPs installed within the Bay area using state cost-share, FY2023

Nutrient Management Plans	Animal Waste Facilities	Cover Crops (all)	Riparian Buffers	Livestock Exclusion
190,092 acres	64 systems	351,696 acres	4,839 acres	1,892,333 linear ft

Activity 4: Provide funding and technical assistance to Virginia's 47 SWCDs to deliver technical assistance to implement cost-share program.

Virginia's 47 SWCDs (or Districts) administer the local implementation of the VACS program with funding from DCR to cover cost-share expenditures, technical assistance to administer the program, and essential funding for District operations. During the 2021 General Assembly, a base technical assistance amount of $5.85 million was provided to Districts as part of their recurring base budget. This budget action recognized consistent funding is necessary for Districts to adequately provide technical assistance to their agricultural producers. State financial support for FY2023 was $141.2 million including BMP funding and associated technical assistance. As the lead agency in TMDL implementation, DEQ utilized federal Section 319(h) to provide additional funding to SWCDs for agricultural BMP implementation. For more information, refer to Watershed Planning and Implementation Activity 7.

Activity 5: Develop Agricultural NPS Assessment Data.

Since 1986, agricultural pollution loads have been biennially evaluated for the potential of water quality degradation due to nonpoint sources of pollution on a per hydrologic unit basis. Data have also been collected on some indicators of where such degradation might have its greatest negative impact. Results are reported in the NPS Chapter of the Virginia Water Quality Assessment (305b) Report.

Activity 6: Implement policies outlined in the Phase III WIP for the Chesapeake Bay.

On January 16, 2024, DEQ submitted Virginia's Chesapeake Bay 2022-2023 Programmatic Milestones Final Progress to EPA's Chesapeake Bay Program Office (EPA-CBPO) on behalf of the Secretary of Natural and Historic Resources. Virginia's draft 2024-2025 Programmatic Milestones and draft 2024-2025 Numeric Milestones were also submitted to EPA-CBPO at that time.

Objective B: Nutrient Management

Summary: DCR administers a comprehensive nutrient management program in which plans for hundreds of thousands of acres are developed or revised by DCR staff and certified private planners each year. In addition to increasing the acreage under nutrient management planning, the program aims to provide technical and financial assistance to producers while also educating producers and the public about nutrient management BMPs.

Activity 7: Manage urban and agricultural nutrients found in fertilizers, manure, biosolids, and other sources.

As required by §10.1-104.5 of the Code of Virginia, all golf courses have obtained and are implementing nutrient management plans. DCR continues to work with golf courses to ensure the nutrient management plans are updated and revised as required by law. Total urban areas with nutrient management now exceed 35,953 acres. Currently, there are over 1,097,795 active agriculture nutrient management planned acres in the Commonwealth developed by DCR staff (Table 2.18). Because of reporting/data collection limitations, the total urban acres with nutrient management are not reflective of the actual amount of urban acres with nutrient management. The actual acreage is much higher. Section 3.2-3602.1 of the Code of Virginia applies to the application of regulated products (fertilizer) to nonagricultural property. It calls for training requirements, establishment of proper nutrient management practices (according to Virginia's Nutrient Management Standards and Criteria), and reporting requirements for contract-applicators applying fertilizer to more than 100 acres as well as for employees, representatives, or agents of state agencies, localities, or other governmental entities applying fertilizer to nonagricultural lands. The total acreage reported to VDACS for the 2022 calendar year was 71,473 acres and can be viewed on the Certified Fertilizer Applicator (CFA) Program website.

Table 2.18: DCR Nutrient Management Planning, as of 2022

Location	Crop Acres	Hay Acres	Pasture Acres	Specialty Acres	Total Acres
Chesapeake Bay Watershed	567,280	106,017	61,249	3,932	738,478
Outside the Chesapeake Bay Watershed	296,449	32,046	29,792	1,030	359,317
Totals	**863,729**	**138,063**	**91,041**	**4,962**	**1,097,795**

Utilizing additional funding from the 2019, 2020, and 2021 General Assembly sessions, DCR has expanded the poultry litter transport program to include Accomack County while maintaining programs in Page and Rockingham counties. As a strategy in WIP III, poultry litter transported from these three key counties must increase from 5,000 – 6,000 tons annually to approximately 89,000 tons annually by year 2025. For FY2023, 7,349.67 tons of litter were transported out of Accomack County, totaling $220,490.10 in payments. Out of Rockingham County 21,549.07 tons of litter were transported, totaling $523,279.50 in payments. FY2023 contracts total of 64,926 tons of litter that will be moved, however to date there has been no participation in Page County due to lack of stakeholder sign-up on program.

Activity 8: Train staff and public in the development of nutrient management plans.

On February 2, 2023, there were four individuals who took the Turf & Landscape (T&L) nutrient management certification exam. Two agriculture technology students took the T&L nutrient management certification exam on December 8, 2023. T&L School Part 1 was conducted virtually from January 17-March 31, hosted by Virginia Tech's CampusOne platform for four individuals. T&L School Part 2 was conducted by DCR staff via Zoom platform for four individuals. T&L School Part 2 was conducted by DCR staff via Zoom on March 7-8. 2023 for seven individuals.

DCR administered an Agriculture Nutrient Management exam on December 9, 2022 for 12 participants at Virginia Tech in Blacksburg, Virginia. On February 3, 2023, a second exam was administered at Brightpoint Community College in Midlothian, Virginia for 21 individuals. A training session on nutrient management plan writing was held in the months of October-December 2022 for Virginia Tech students. There were 16 students in the class. A two-part training session was held in June of 2023 at Blue Ridge Community College in Weyers Cave, Virginia .The first portion on Soils and Crops was June 6-7 and had 42 participants. The second session was June 12-14 on Plan Writing and had 23 participants. There are 273 certified ag planners, 94 certified T&L planners, and 32 planners certified in both categories.

The Virginia Nutrient Management Training and Certification Program (NMTC) has been certifying qualifying individuals to prepare nutrient management plans since 1996. In FY 2023, DCR took actions to better integrate technology into the Program with the goal of reaching a broader audience of individuals interested in being certified to prepare nutrient management plans. These actions included: setting up online registration for the training classes attached to the certification process; streamlining and branding required forms for both planner

certification and plan reporting; providing the forms on the DCR website, as well as allowing the forms to be completed electronically. Additionally, the Program has assisted the State of Delaware in offering its nutrient management certification exam online. These are significant advances in collecting accurate and detailed data from certified nutrient management planners and making the certification process more user friendly to those who wish to become certified.

The Virginia Nutrient Management Direct Pay Program continues to expand. This Program is an incentive program paying certified Virginia nutrient management planners to prepare, revise, and certify the implementation of nutrient management plans that cover acres within certain counties in Virginia's Chesapeake Bay watershed or required by other DCR programs. For FY 2023, 187,386 acres of nutrient management plans were prepared, revised, and certified with $518,068 of state funds. Similarly, 28,339 acres were prepared revised, and certified utilizing federal CBRAP grant funds in the amount of $99,670.02 for 28,339 acres. Since its inception in FY 2019 the Program has been provided total funding of $1.85 million, which has led to 368,282 acres of preparation, revision, and certification of nutrient management plans.

Activity 9: Continue to develop and implement programs to address unpermitted dairies, precision nutrient management planning, etc.
To continue progress toward meeting goals for the Chesapeake Bay TMDL, DCR has dedicated two certified nutrient management staff to work exclusively with small dairies and other small farms to develop nutrient management plans. There are 376 dairies in Virginia, down from more than 500 in recent years. Forty-four of these permitted operations have current nutrient management plans.

Objective C: Resource Management Planning

Summary: The Virginia Resource Management Planning (RMP) program encourages farmers to voluntarily implement BMPs improving both farming operations and water quality. In return for full implementation, plan holders can be assured they are in compliance with any new state nutrient, sediment, and water quality standards in addition to regulations related to the Chesapeake Bay and all local stream segment TMDLs. The primary objective of the program is to encourage implementation of additional agricultural BMPs and increase reporting and verification of voluntary BMPs.

Activity 10: Encourage the implementation of additional agricultural BMPs and promote increased reporting and verification of voluntary BMPs.
State funding for Virginia's Agricultural BMP Cost Share (VACS) Program has increased from routine budgets of over $40M in 2017 to $116.3M in the current fiscal year (2023). In addition, DCR has worked with SWCDs to develop pilot BMP implementation projects and grants to boost the implementation of specific types of agricultural BMPs in different areas across the state but particularly within Virginia's Chesapeake Bay watershed. Examples include the Small Herd Initiative (DCR's current stream exclusion initiative), erosion mediation in the Northern Neck SWCD, and the Whole Farm Approach (WFA). During the 2022 General Assembly Special Session, $7M was provided for the Small Herd

Initiative. The WFA enables farmers to apply for cost-share funding for nutrient management practices or cover crops practices via a single application. The WFA also provides information on all related BMPs implemented on participating agricultural operations, not just information on the BMPs funded. It has been very successfully implemented in Essex, King and Queen, and King William counties, as well as the Chesapeake Bay watershed of the Eastern Shore. For FY2023, the implementation of the WFA has been expanded to seven SWCDs, several of which are located outside of the Chesapeake Bay watershed.

DCR continues to work on ways to better track and encourage reporting of voluntary BMPs. Since January 1, 2021, approximately $1.8 million in tax credits have been approved by the SWCDs for producers; these practices are tracked and reported, if needed, in the same manner as BMPs implemented using VACS cost-share funds.

Activity 11: Achieve widespread implementation of the RMP Program by agricultural producers.

The Commonwealth's RMP Program provides a voluntary way to promote the use of BMPs improving water quality and agricultural operations. As of June 30, 2023, 202 RMPs, including over 49,000 acres, have been certified as fully implemented. Additionally, 362 RMPs, including nearly 68,750 acres, are included in an RMP that is currently being implemented (*i.e.*, not yet certified). The certified RMPs within the Chesapeake Bay watershed include over 48,000 acres. Nearly 60,000 additional acres within the Chesapeake Bay watershed are included in an RMP that is currently being implemented. There are nearly 6,000 acres outside of the Chesapeake Bay watershed that are certified and approximately 7,000 acres are included in an RMP that is currently being implemented. Many of the RMPs currently being developed or certified are incentivized through the direct pay initiative DCR began in FY 2021. This successful initiative does not require RMP developers to respond to a Request for Applications (RFA) but instead provides payment for RMP development on a first-come, first-served basis until available funding has been obligated. Beginning in April 2021 and utilizing Most Effected Basin (MEB) funds provided by EPA, the Department incentivized RMP development and certification in identified basins, including the Bay portion of the Eastern Shore and Great Wicomoco in the Northern Neck. Twenty new RMPs have been written and certified as implemented through this special project, covering just over 6,000 acres. Engineered erosion projects will soon be completed in the Northern Neck, resulting in 3 more certified RMPs covering just more than 800 acres.

Objective D: Agricultural Stewardship Act Program

Summary: The Virginia Department of Agriculture and Consumer Services (VDACS) administers the Agricultural Stewardship Act (ASA) Program. The ASA program objective is to work with farmers and local SWCDs to resolve in a timely and common-sense manner water quality problems concerning nutrients, sediment, and toxins from agricultural activities that are reported to VDACS. Farmers involved in the complaint and correction process are generally cooperative in meeting the deadlines set by the ASA, but corrective orders may occasionally be issued or civil penalties may be assessed. The VDACS-ASA program also provides support to DEQ agricultural program staff on a Small Animal Feeding Operation (AFO) Evaluation and Assessment Strategy. With an increasing number of plans required to address water pollution issues, prioritization is crucial to remain effective and efficient.

Activity 12: Identify water quality problems and help farmers correct them in a commonsense manner that accommodates both the farmer and the environment.

The ASA program received numerous inquiries regarding possible agricultural pollution during the program year of April 1, 2022 through March 31, 2023. Forty-six of these cases became official complaints. The outcomes of the complaints are summarized in table 2.19.

Table 2.19: Outcomes of ASA complaints, April 2022 – March 2023

Complaint Outcome	Number	Percent of Total Inquiries
Founded; required agricultural stewardship plans to address water pollution problems	11	24
Unfounded; lack of evidence	18	39
Dismissed; no jurisdiction, incomplete information provided, or issue addressed prior to completion of the investigation	17	37

Activity 13: Respond to all water quality complaints in a timely fashion.

For complaints investigated by a local SWCD the ASA requires investigations to be completed within twenty-one days of the Commissioner of Agriculture and Consumer Services' (Commissioner) receipt of the complaint. The ASA does not specify a length of time in which the Commissioner or his staff must complete the investigation. However, it is the Commissioner's policy that investigations conducted by him or his staff are completed within that time period where possible. If the District conducts the investigation, the District will send its findings to the Commissioner, so he can determine whether a plan is necessary.

Activity 14: Provide programmatic outreach and education to SWCDs, farmers, and the general public.

DCR provides technical and financial assistance to SWCDs, institutions of higher education, and individuals for NPS pollution controls. Throughout FY2023, 37 trainings were conducted for District directors and staff. Additionally, the Department offered trainings on BMP

standards and specifications, the conservation application suite, conservation planning, other technical topics, and financial management. Outreach to producers and the general public was primarily conducted at the local level by District staff and partner organizations. For fiscal year 2022 and 2023, DCR contracted with Virginia State University's Small Farm Outreach Program to target farmers/ranchers of color and other socially disadvantaged farmers to increase their awareness of financial incentives offered by DCR and SWCDs. Additionally, SWCDs were required under the FY2023 grant agreement with the Department to host an outreach event; this should increase farmer awareness of the cost-share funding available. This requirement remains in effect for the FY2024 grant agreement as well.

2.3 Forestry Program

The Virginia Department of Forestry (VDOF) continues to focus on improving water quality by providing technical services, education opportunities, information on BMPs, and silvicultural activity enforcement on the Commonwealth's forest watersheds, non-tidal wetlands, and riparian areas. Table 2.20 summarizes the relationships among the Forestry Programs' objectives, activities, and milestones, as well as which NPS Plan goals are addressed.

Table 2.20: Forestry Programs Objectives

Forestry Programs Objectives	Goals	Activities	Milestones
A: General Forestry Program	1,2,4	1	F01, F04
B: Forestry BMP Implementation	1-5	2-7	F01, F04
C: Riparian Buffer Initiative	1,2,4,5	8-10	F02, F03, F04
D: Urban Forestry Initiative	11-13	11-13	F04

Objective A: General Forestry Program
Summary: In addition to facilitating forestry BMP implementation, the VDOF also improves and protects watersheds through project management and land conservation with a focus on conserving land permanently, establishing and maintaining riparian buffer zones, planting trees on non-forested open land, and increasing urban forest canopy by planting trees.
Activity 1: Provide technical services, BMP information, and silvicultural activity enforcement on the Commonwealth's forest watersheds, non-tidal wetlands and riparian areas to help ensure the quality of drinking and recreational waters from these areas for future generations. VDOF has a strong role in forest management planning for Virginia landowners. Forest management plans are a foundational element in meeting the needs of landowners and the broader resource objectives of the Commonwealth. In FY2023, VDOF recorded over 2,245 pre-harvest forest plans exceeding 104,642 acres in the Bay Watershed. Forest management plans lead to implementation of forest management practices. VDOF field staff provide technical assistance and administer financial assistance programs in implementing some of these practices.

In FY2023, VDOF recorded over 2,031 forest management projects on approximately 67,414 acres in the Bay Watershed. More specifically, VDOF reported tree planting on over 812 sites on nearly 29,277 acres in the Bay Watershed. Of this, nearly 1,190 acres were established on previously non-forested open land. VDOF provides a variety of services on these lands including oversight of forestry BMP implementation, inspection of harvest sites, and programs in riparian and urban forestry that collectively protect water quality.

Objective B: Forestry BMP Implementation

Summary: VDOF foresters are given regulatory authority under the Virginia Silvicultural Water Quality Law. Additionally, water quality programs focus on protecting streams from sedimentation by funding and increasing compliance with BMPs, best forest harvesting operations, inspecting harvest sites, educating loggers about BMPs, and monitoring streams for sedimentation.

Activity 2: Provide cost-share to implement forestry BMPs.

VDOF offers tree-planting grants using the Virginia Trees for Clean Water (VTCW) Program promoted through an Request for Proposals (RFP) process. The 2022 cycle allocated $1,045,977 to 63 projects in 63 watersheds utilizing funds from the Commonwealth's Water Quality Improvement Funds (WQIF). Projects for FY23 are still in process with final reports due in June 2024. These tree-planting activities are being tracked using VDOF's "My Trees Count" application.

For Tax Year 2022, VDOF issued Riparian Forest Buffer tax credits on 63 applications covering 1,222 acres of retained forested buffers. The tax benefit to forest landowners was $554,536.08 on timber valued at $2,654,919.59.

Finally, 82 stream protection projects using FY2023 funds are using portable bridges to provide stream crossing protection across the site during and after harvesting. See also Forestry Programs Activities 11 and 12 below.

Activity 3: Protect and enhance water quality by increasing compliance with BMPs on forest harvest sites.

In FY2023, VDOF field personnel conducted 6,672 inspections on 1,510 timber harvest sites in the Chesapeake Bay Watershed on 67,898 acres. During FY2023, VDOF field personnel inspected 3,319 timber harvest sites across Virginia. These inspections included 14,673 site visits (an average of 4.4 visits per site) on 157,586 acres. Figure 2.10 shows the historical data on timber harvests.

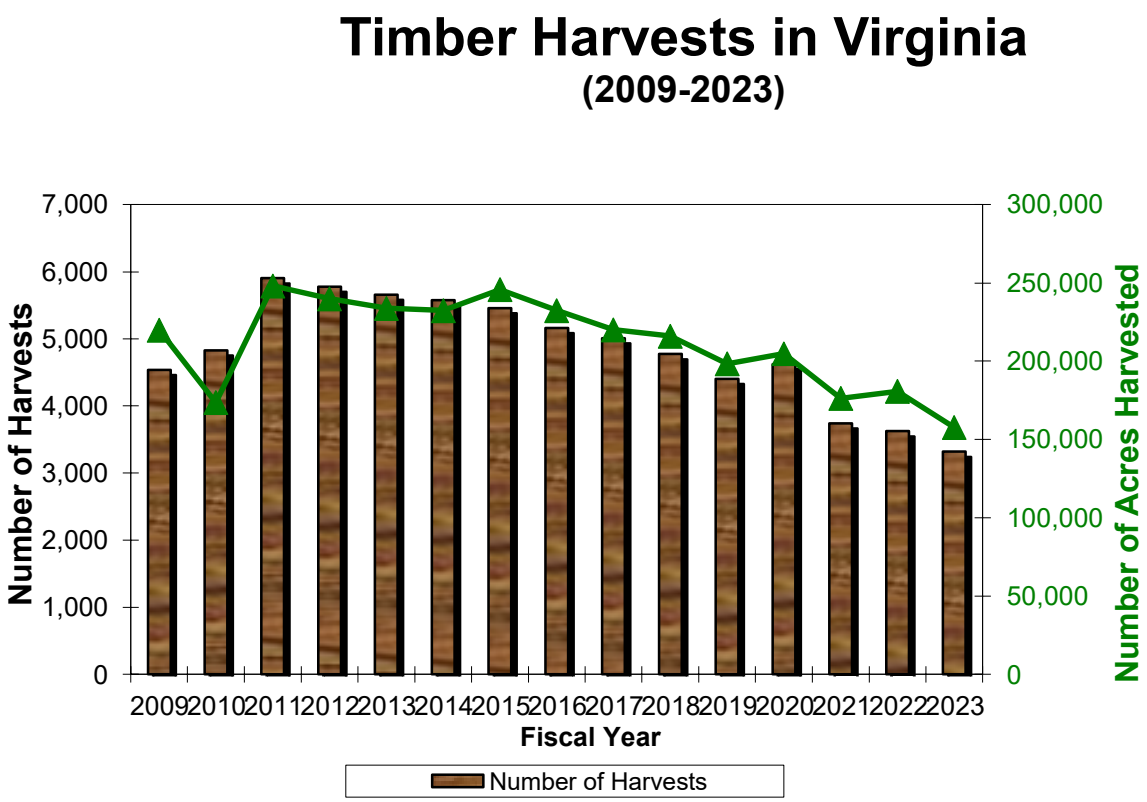

Figure 2.10: Statewide number of harvests inspected and total number of acres harvested 2007 through 2023

Activity 4: Maintain robust Harvest Inspection and Logger Education Programs.

VDOF was involved in 14 Logger education programs in FY2023; educating 504 timber harvesting professionals through the Virginia Sustainable Harvester and Resource Professional (SHARP) Logger Program in cooperation with Virginia Tech and the Sustainable Forestry Initiative (SFI®) State Implementation Committee. This program has enabled VDOF to assist in training 11,647 harvesting professionals in 385 programs relating to water quality protection since its inception. Figure 2.11 shows the historical data on logger education programs:

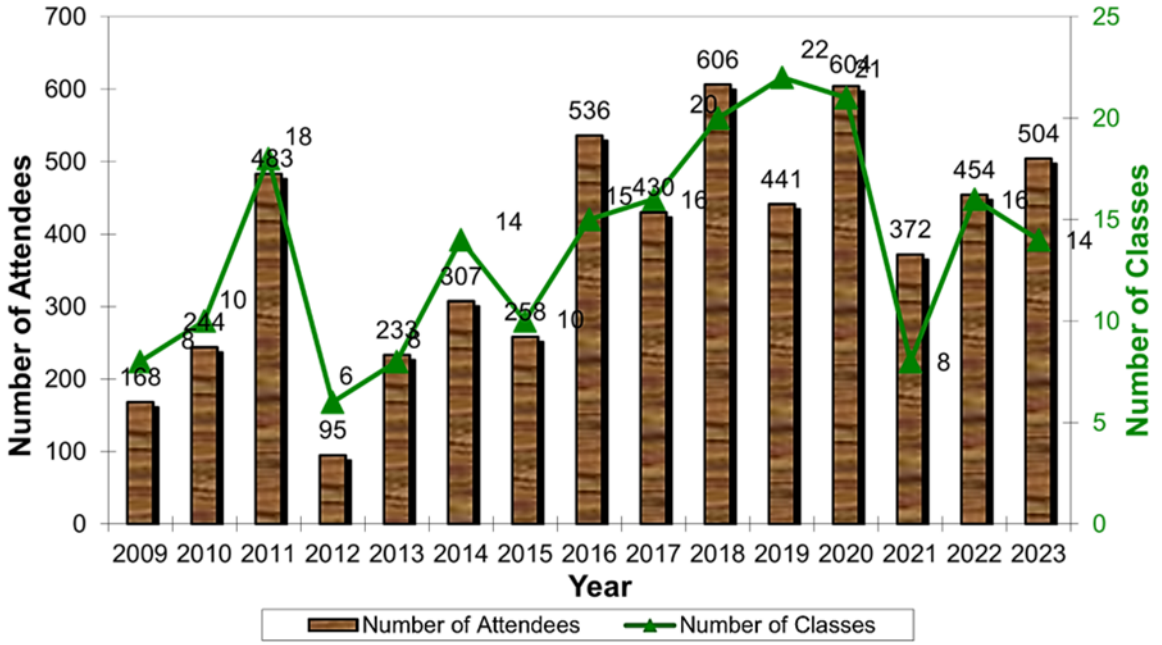

Figure 2.11: VDOF logger education 2007 through 2023

Activity 5: Utilize and support the water quality law enforcement program.

State foresters continue to enforce the Virginia Silvicultural Water Quality Law. In FY2023, VDOF was involved in 106 water quality actions. Two resulted in Special Orders being issued. Additionally, there were 11 failure-to-notify violations by timber harvesting contractors.

Activity 6: Monitor streams for sediment deposition.

A statewide audit system has been in place since 1993 to track trends in BMP implementation and effectiveness. The entire BMP Implementation Monitoring effort has also been automated to be compatible with VDOF's IFRIS (Integrated Forest Resource Information System) enterprise database system. The information compiled serves as the basis for VDOF reporting under Virginia's WIP. In calendar year 2022, 97.7 percent of the timber harvest acres in Virginia conducted within the boundaries of the Bay watershed were under BMPs, and 96.8 percent of the timber harvest acres statewide were under BMPs. The audit also showed three (1.25%) of the sites visited had any signs of active sedimentation present after the closeout of the harvesting operation. The BMP goal for WIP III is to achieve a 95 percent implementation rate by 2025.

Activity 7: Implement state policies outlined in Phase III WIP for the Chesapeake Bay.

On August 5th, 2022, DEQ submitted Virginia's Chesapeake Bay 2022-2023 Programmatic Milestones Final Progress to EPA's Chesapeake Bay Program Office (EPA-CBPO) on behalf of the Secretary of Natural and Historic Resources. Virginia's draft 2024-2025 Programmatic Milestones and draft 2024-2025 Numeric Milestones were submitted to public comment from November 20th, 2023 – December 19th, 2023 and submitted to EPA on January 16th, 2024.

Objective C: Riparian Buffer Initiative

Summary: The main goal of this activity is to conserve forest resources through voluntary agreements with landowners and qualified conservation organization or public entities.

Activity 8: Increase the amount of forestland protected and/or established in Virginia watersheds.

VDOF administers a conservation easement program to assure a sustainable forest resource. Because larger blocks of forest potentially provide the greatest range of functions and values, VDOF easements focus on keeping the forest land base intact and unfragmented as well as keeping the forest in larger, more manageable, and functional acreages. VDOF holds 205 conservation easements in 63 counties and the City of Suffolk permanently protects over 94,000 acres of vital forest and farmland. Of these, 121 easements consisting of 33,959 acres lie within the Chesapeake Bay watershed.

In FY2023, VDOF permanently protected 4,108 acres of open space and more than 19 miles of water courses through four conservation easements. One of the easements, comprising 370 acres and protecting approximately 2.4 miles of water courses, were within the Chesapeake Bay watershed.

Table 2.21: VDOF conservation easement totals

Location	Number of Easements	Total Acres Protected
Statewide	121	94,000
Chesapeake Bay Watershed	121	33,959

In Tax Year 2022, VDOF issued Riparian Forest Buffer Tax Credits to retain 1,222 acres of forest buffers. (Table 2.22)

Table 2.22: VDOF Riparian Forest Buffer Tax Credits, tax year 2022

Applications Awarded	Acres Forest Buffer Retained	Total Landowner Tax Benefit	Total Value of Timber Retained
63	1,222	$554,536.08	$2,654,919.59

Activity 9: Work with partners, agencies, and groups to establish new buffers as outlined in the Riparian Forest Buffer Implementation Plan.

VDOF foresters meet with landowners, assess sites, develop site-specific recommendations, and coordinate with contractors and owners to successfully establish buffers through tree planting or natural means. As of August, FY2023, VDOF recorded riparian forest buffer projects on 183 sites for a total of 471.1 acres within the Bay watershed.

The James River Buffer Program (Buffer Program) was established in December 2018 and is funded through the Virginia Environmental Endowment's James River Water Quality Improvement Program. The Commonwealth specifically targeted the James River for riparian forest buffer installations to mitigate concentrated flows in that area and to meet Virginia's 2025 WIP III goals. The Buffer Program is designed to work in tandem with existing programs and seeks to target currently unengaged landowners who have not participated or who do not qualify for existing programs. The Buffer Program within the Middle James River Watershed is carried out by two partners, VDOF and the James River Association. In Spring of 2021 a new partner, the Chesapeake Bay Foundation, joined to serve landowners in the Upper James River Watershed. In FY2023, VDOF carried out 16 buffer projects, adding 60.2 acres of riparian buffers within the Middle James River Watershed. Table 2.23 shows the associated pollutants and sediment reductions linked to these established buffer acres.

Table 2.23: James River Buffer Program accomplishments and load reductions to James River, FY2023

Total Buffer Acres	Approximate Trees Planted (#)	Nitrogen Reduction (lbs)	Phosphorus Reduction (lbs)	Total Suspended Solids (TSS) Reduction (lbs)
60.2	24,842	3505.2	999.2	1,109,441.9

Activity 10: Provide educational opportunities aimed at promoting an increase in riparian plantings and educating landowners on the importance of forests for water quality.

Statewide, VDOF staff often assist with local agriculture and natural resource days, which support Meaningful Watershed Educational Experiences. In addition, the Department administers the Project Learning Tree (PLT) program for Virginia, including a network of 118 facilitators who are trained to conduct workshops.

VDOF partners with Virginia Tech and Virginia Cooperative Extension to offer Beginning Woodland Owner Retreats (2 for 56 landowners with 6,803 acres)) and an Advanced Woodland Owner Retreat for 31 landowners with 19,787 acres; and Woods & Wildlife Conferences (2 in 2023, reaching more than 300, with 43,052 acres). These events usually include at least one session addressing the importance of forests to water quality and overall environmental health.

In conjunction with Cooperative Extension, DOF developed a "15 Minutes in the Forest" video highlighting the role forested buffers play in producing cleaner water. This video has over 1,000 views to date. DOF also provided instruction to professionals in the Chesapeake Bay Landscape Professional (CBLP) Buffer Certificate Program, reaching over 20 students. DOF presented on the benefits of buffers, agency programs, and technical assistance provided by DOF field staff to a variety of audiences at events including Environment Virginia, the York River and Small Coastal Basins Symposium, Area SWCD meetings, and Consulting Forester's meetings. Finally, presentations were given in educational settings at both the high school and college level. This includes a hands-on experience where students in an Ecology class in Augusta County were able to plant a buffer as part of their class.

Objective D: Urban Forestry Initiative

Summary: This objective supports development and maintenance of a positive urban forest environment.

Activity 11: Mitigate the water quality impacts of urban and suburban stormwater and impervious surfaces.

The Virginia Urban Tree Canopy program assists communities by providing both cost-share funding and technical assistance to plant and maintain more trees on both public and private land, as well as support in data collection and analysis to encourage better management of existing canopy. With the newly added Tree Planting – Canopy BMPs for the WIP III, an innovative project tracking application entitled, "My Tree Counts" is tracking projects of multiple scales from individual tree to partner group multi-acre. The USFS Urban and Community Forestry Program (U&CF), which financially supports and provides technical assistance for Urban Tree Canopy (UTC) analyses, is also supporting citizen-science based urban heat island studies across the state. In 2022 and 2023, DOF worked with 11 colleges and universities to install 2,764 trees in urban heat islands identified as part of the study. The projects involved DOF staff, professors, staff from the Virginia Foundation of Independent Colleges, and more than 100 students.

Activity 12: Develop and implement programs that encourage the implementation of tree planting projects and forest management strategies.

VDOF professional foresters prepare multi-resource forest management plans that address forests, timber, wildlife habitat, water quality, soils, and recreation to meet the needs of landowners as well as the broader resource objectives of the Commonwealth. One of the flagship programs for these plans is the Forest Stewardship Program, a cooperative effort with the U. S. Forest Service Cooperative Forestry section. In FY2023, VDOF recorded over 2,245 plans exceeding 104,642 acres in the Bay Watershed.

VDOF offers tree-planting grants using the Virginia Trees for Clean Water (VTCW) Program promoted through an Request for Proposals (RFP) process. The 2023 cycle allocated $1,045,977 to 63 projects utilizing funds from the Commonwealth's Water Quality Improvement Funds (WQIF). Projects for FY23 are still in process with final reports due in June 2024. These tree-planting activities are being tracked using VDOF's "My Trees Count" application.

VDOF field staff provide technical assistance and administer financial assistance programs in implementing some practices in forest management plans. They are action-based plans designed to meet landowner and resource needs including water quality improvement. In FY2023, VDOF recorded 2,031 forest management projects on approximately 67,414 acres in the Bay Watershed. More specifically, VDOF reported tree planting on 812 sites on nearly 29,277 acres in the Bay Watershed. Of this, nearly 1,190 acres were established on previously non-forested open land. Finally, VDOF manages 26 State Forests that cover 74,968 acresThese are operational, working forests that are managed for multiple uses including demonstration. They have recently been certified by Sustainable Forestry Initiative (SFI) and the American Tree Farm System standards, which includes rigorous water quality and BMP Standards. Additionally, VDOF operates two tree seedling nurseries, offering over 40 species of trees and shrubs that meet Virginia's needs for reforestation, afforestation, water quality, wildlife, and aesthetics. Each year, the nurseries produce approximately 30 million seedlings. In the FY2023 Virginia State budget, VDOF received $2,085,860 to significantly increase hardwood seedling production. When this project is completed, it is anticipated VDOF will be able to produce an additional 6 to 9 million seedlings per year.

Activity 13: Encourage municipalities to include the use of forests and trees as a stormwater BMP.

Encouragement of localities to utilize trees and urban forests as a BMP is evidenced by Virginia Tech's (VT) continued support of the Virginia Urban Tree Canopy program (VUTC), which was a product of the Virginia Street Tree Assessment Project through a partnership with DOF. The VAUTC program assists communities by providing both cost-share funding and technical assistance to plant and maintain more trees on both public and private land. These trees will provide green stormwater infrastructure benefits, thereby improving water quality across Virginia and specifically in the Chesapeake Bay. The website is "intended for urban planners, engineers, urban foresters, tree boards or commissions and others concerned with their community forests. Our aim is to help localities create a data–driven plan to set canopy goals and implement effective tree planting and preservation." See also Activity 11 above.

2.4 Onsite Sewage Programs

The mission of the Virginia Department of Health's (VDH) Division of Onsite Sewage and Water Services is to protect public health and groundwater quality. The program provides guidance, training, technical assistance, and administrative support while focusing on developing regulatory and

associated implementation guidance. Table 2.24 summarizes the relationships among the Onsite Sewage Programs' objectives, activities, and milestones, as well as the NPS Plan goals they address.

Table 2.24: Onsite Sewage Programs Objectives

Onsite Sewage Programs Objectives	Goals	Activities	Milestones
A: General Onsite Sewage and Water Program	1-5	1	S02
B: Regulation Implementation	1,3,4	2	S02
C: Support BMP Installation	1,2,3,4	3	S01, S03
D: DEQ Grants and Programs	1,2,5	4-6	S01, S02, S03

Objective A: General Onsite Sewage and Water Program
Summary: The mission of VDH's Office of Environmental Health Services, Onsite Sewage and Water Services Program (Onsite Program) is to protect public health and groundwater quality. The Onsite Program is responsible for adopting and implementing regulations for private wells and onsite wastewater treatment and disposal. The program provides guidance, training, technical assistance, and administrative support to over 300 field staff. In addition, the program fosters and maintains communication with an onsite community of contractors, engineers, soil scientists, pumpers, academics, manufacturers, builders, real estate agents, and most critically, homeowners.
Activity 1: Protect public health and surface and groundwater quality. VDH received the Strengthening Environmental Health Capacity grant from the United States Centers for Disease Control and Prevention's Agency for Toxic Substances and Disease Registry (CDC-ATSDR) to 1) use environmental health (EH) data and information for data-driven decision making, (2) identify and address EH hazards, and (3) assess the effectiveness and impact of EH services and interventions. One component of this grant involved the creation of a GIS mapping tool to locate private and community wells vulnerable to EH hazards such as pollutants or climate change hazards such as flooding and sea level rise. This tool is currently limited in scope to five counties: Lancaster, Mathews, Middlesex, Northumberland, and Westmoreland. It will be shared with local health district staff, PDCs, and other partners to identify vulnerable wells and plan for safe and equitable future drinking water supplies. VDH also included onsite septic system locations in this GIS mapping tool, so these septic systems can also be assessed to see if they are vulnerable to EH or climate change hazards.
Objective B: Regulation Implementation
Summary: The Sewage Handling and Disposal Regulations (12 VAC 5-610) and Regulations for Alternative Onsite Sewage Systems (12 VAC 5-613) require a multiple step process to ensure compliance with design and operation standards. The process includes construction permit issuance for onsite sewage systems, designer and installer verification of approved design compliance, operation permit issuance, and operation and maintenance (O&M) reports for alternative systems.

Activity 2: Maintain and develop programs that implement both the Sewage Handling and Disposal Regulations (12 VAC 5-610) and Regulations for Alternative Onsite Sewage Systems (12 VAC 5-613).

The regulations protect public health, groundwater, and surface waters of the Commonwealth by establishing effective and appropriate minimum standards for the safe and sanitary collection, transport, treatment, and disposal of wastewater, as such activities relate to sewage disposal on private and residential parcels of land and other places. They include a framework for allowing alternative sewage treatment systems for single family dwellings located where conventional septic systems will not work.

Across the state, there are approximately 1.1 million onsite sewage systems including approximately 32,000 alternative onsite sewage systems (AOSS). Roughly 550,000 of the total onsite sewage systems in Virginia are in the Chesapeake Bay watershed. VDH has been involved with a variety of legislative initiatives aimed at decreasing pollution from onsite sewage systems across the Commonwealth. HB 2322 (2019 Va. Acts Ch. 429) passed in the General Assembly and was signed by Governor Northam. The bill directed VDH to develop a plan for the oversight and enforcement of requirements related to the inspection and pump-out of onsite sewage treatment systems in the Northern Neck, Middle Peninsula, and Eastern Shore Regions of Virginia. VDH presented an agency bill to transition oversight authority of onsite sewage system pump-outs within certain localities in Virginia. HB 769 (2022 Va. Acts Ch. 486) was passed by the General Assembly and signed by Governor Youngkin in April 2022. Effective July 1, 2023, VDH will manage and enforce onsite sewage system pump-out compliance for Accomack, Essex, Gloucester, King and Queen, King William, Lancaster, Mathews, Middlesex, Northampton, Northumberland, Richmond, and Westmoreland Counties, as well as the incorporated towns within those counties. Licensed operators conducting pump-outs in these localities will be required to provide a report on these system visits using the online O&M portal developed by VDH. This bill also tasks the Board of Health with establishing a schedule of civil penalties for violations of pump-out requirements in these localities.

A critical piece of legislation, SB 1396 (2021 Special Session I Va. Acts Ch. 382), was passed by the 2021 General Assembly. This legislation has four primary components: (i) establishes a Commonwealth policy prioritizing universal access to wastewater treatment that protects public health and the environment and supports local economic growth and stability; (ii) establishes through code the Wastewater Infrastructure Working Group, (iii) provides VDH with authority to include in the Sewage Handling and Disposal Regulations (12VAC5-610) consideration for the impacts of climate change; and (iv) provides VDH the authority to use the onsite sewage system indemnification fund for grants and loans to repair failing onsite sewage systems.

The action to establish a Commonwealth policy to prioritize access to fully protective wastewater treatment is a significant milestone in reducing the impacts of onsite sewage systems in the Chesapeake Bay watershed. Affected agencies will seek to improve public education regarding adequate treatment as part of this policy. Agencies will also collaborate and coordinate grant opportunities to seek projects that provide a combination of public health, environmental, and positive economic impacts. The legislation also set a goal to set a preference for community-based and regional projects, as opposed to the historic practice of wastewater infrastructure needs on a site-by-site basis.

Climate change is already having an impact on wastewater infrastructure throughout the Commonwealth, especially onsite sewage systems located on some waterfront parcels in rural Coastal Virginia. Currently, the Sewage Handling and Disposal Regulations only require that current conditions be assessed when permitting an onsite sewage system. While systems permitted today may meet minimum standards and setbacks from surface waters, they could have negative impacts soon as sea level and ground water levels rise. In 2021 and 2022, VDH held five meetings with a broad group of stakeholders to begin the process of developing considerations for the impacts of climate change to minimize future impacts of onsite sewage systems on Virginia's waterways. These considerations are part of the broader overall revisions to the Sewage Handling and Disposal Regulations. The stakeholder group used a hazard analysis and critical control point (HAACP) process to develop a list of draft critical control points within onsite sewage system designs correlated with hazards presented by climate change. Once a Notice of Intended Regulatory Action process is complete for the regulations, VDH will work with the stakeholder group to finalize draft language for revising the regulations.

Objective C: Support BMP Installation

Summary: VDH's strategic vision is to shift evaluation and design services for onsite sewage systems and private wells from VDH to the private sector. This shift in services will allow VDH to focus its limited resources on health monitoring, data collection and sharing, providing quality assurance inspections of private sector work, developing policies to improve health, and providing reasonable enforcement and programmatic oversight. However, VDH continues to serve as a technical resource for Section-319(h)-funded projects implementing residential septic programs and will serve as a technical resource on DEQ's Residential Septic Stakeholder Advisory Committee.

Activity 3: Work to document and report the number of septic pump-outs, connections to public sewers, repairs, replacements, and alternative septic systems installed.

In 2019, the Secretaries of Natural Resources, Health and Human Resources, and Commerce and Trade worked together to form the Wastewater Infrastructure Work Group (Work Group) consisting of representatives of DEQ, VDH, Virginia Department of Housing and Community Development, and Virginia Resources Authority. The SB 1396 (2021 Special Session I Va. Acts Ch. 382), legislation codifies the Work Group and ensures it will remain in place until 2030. The legislation also includes additional partners to assist the Work Group in assessing wastewater infrastructure needs in the Commonwealth. An associated budget amendment to the legislation also provides for additional funding to the Center for Coastal Resource Management at the College of William & Mary Virginia Institute of Marine Science to expand the Virginia Wastewater Data Viewer tool to include all portions of the Chesapeake Bay Watershed west of I-95. The tool uses septic repair permitting data to create a map identifying areas with high rates of septic system failure. The tool also allows VDH staff working in localities throughout the Commonwealth to geographically identify communities with wastewater infrastructure needs.

VDH continued to maintain and modify the online O&M portal for uploading alternative onsite system maintenance reports. VDH also developed an interface to upload maintenance reports from Carmody and Online RME, which are databases used by septic system operators and other professionals.

VDH is in the process of filling gaps in its inventory of septic systems using real estate data that includes septic information. This data is collected from local county governments and compared with the existing inventory of septic systems to identify any new septic systems and confirm the accuracy of records found in both datasets. As of July 2023, VDH has collected and analyzed real estate data from 85 counties in Virginia and identified over 1,200,000 new potential septic system locations not in the septic inventory. The real estate data consists only of the location of a septic system without any information on the system itself, but with more funding VDH can collect this information with fieldwork, surveys, and other techniques and confirm the validity of the real estate data. Additional funding would also allow VDH to upload these real estate records into the existing septic system database maintained by VDH. Collecting these datasets is still ongoing, but there are some limitations, as not all county governments collect septic information when performing their real estate assessments. In addition, not all land parcels have data in the real estate datasets, leaving some addresses with unknown septic/sewer information remaining. To fill in the remaining gaps in the inventory, VDH is investigating machine learning models that can predict if a property is likely to have a septic system based on different variables.

VDH has continued to maintain and modify the online Operations and Maintenance (O&M) portal for uploading AOSS maintenance reports. VDH has also developed an Application Programming Interface (API), allowing third party vendors with databases used by septic system operators and other professionals to interface with and upload maintenance reports to the maintenance portal. As of August 2, 2023, local health district staff have reviewed 11,108 of the 17,744 completed O&M reports received during the 2023 fiscal year.

Objective D: DEQ Grants and Programs

Summary: DEQ continues to work with organizations and localities across Virginia to fund projects correcting failing septic systems or straight pipes. Most of these projects are part of larger watershed restoration and implementation efforts in TMDL implementation plan areas. DEQ provides funding from grant and landowner contributions to pump out septic systems, repair/replace failing septic systems, or remove straight pipes. DEQ generally disburses funds through SWCDs; in a few cases, nonprofits, planning district commissions, and localities assist with these TMDL implementation projects. DEQ also provides financial assistance through the Chesapeake Bay Implementation Grant to low-to-moderate income homeowners within Chesapeake Bay preservation areas to address the requirements of a local government's septic tank pump-out program, pursuant to the Chesapeake Bay Preservation Act.

Activity 4: Implement the septic pump-out requirements of the Chesapeake Bay Preservation Act.

Chesapeake Bay Preservation Act (CBPA) compliance reviews continued to be conducted for the Tidewater localities subject to the CBPA. DEQ Local Government Assistance Program staff have been working to ensure that a periodic (every five years) compliance review is completed for all local programs in the 84 CBPA localities. As part of the compliance review process, localities are required to submit annual reports on their continued implementation of the CBPA. Based on the 2022 annual report cycle (January 1, 2022 – December 31, 2022), 8,546 septic systems were pumped out.

Activity 5: Provide funding and technical services to initiate projects to address straight pipes and failing or failed residential onsite sewage systems identified in local NPS implementation plans.

DEQ runs a very robust residential septic program in conjunction with both its Non-agricultural Nonpoint Water Quality Improvement Fund Program as well as its Section 319(h) Nonpoint Program. These programs made available funds for grantees to provide technical services to implement on-the-ground septic BMP projects. In addition, during FY2023, a total of $895,365 in state and federal funding combined with landowner contributions were expended to install 375 septic BMPs. This resulted in the removal of 2,866 pounds of nitrogen and 4.76E+12 CFU of bacteria (Table 2.25). About 85% (317 total) of the BMPs were installed in the Chesapeake Bay watershed and the remaining 15% (58 total) were installed outside of the Chesapeake Bay watershed (Table 2.26). 253 of the septic BMPs funded by DEQ were funded within local NPS implementation plans (IPs) areas (Table 2.26). Table 2.27 shows that a total of 317 septic BMPs were implemented in the Chesapeake Bay Drainage Basin at a total cost of $605,007 and 58 septic BMPs were implemented outside of the Chesapeake Bay drainage basin at a total cost of $290,358 for FY2023.

Table 2.25: Residential septic BMPs installed (7/1/2022 – 6/30/2023)

BMP Practice Code	Name of BMP	Number of BMPs Installed	Pounds of Nitrogen Reduced	CFU* of Bacteria Reduced	Total Amount of Cost-share Provided	Total Cost of Practice
RB-1	Septic Tank Pump-out	286	801	1.42E+12	$59,911	$113,885
RB-2P	Connection to Public Sewer with Pump	1	31	4.98E+10	$14,400	$18,203
RB-3	Septic Tank System Repair	8	185	2.98E+11	$14,223	$29,583
RB-3M	Conventional Onsite Sewage System Full Inspection and Maintenance	37	855	1.38E+12	$45,743	$76,947

RB-4	Septic Tank System Replacement	26	601	9.70E+11	$149,271	$298,674
RB-4P	Septic Tank System Installation/Replacement with Pump	9	208	3.36E+11	$83,346	$149,676
RB-5	Installation of Alternative Waste Treatment System	8	185	2.98E+11	$127,641	$208,397
Total	--	**375**	**2866**	**4.76E+12**	**$494,536**	**$895,365**

*CFU = colony forming units

Table 2.26: Residential septic BMPs for waters outside the Chesapeake Bay watershed and waters inside the Chesapeake Bay from 7/1/2022 – 6/30/2023

Watershed Drainage Basin	Number of BMPs Installed within approved IP areas	Number of BMPs Installed outside IP areas	Total	Percent within Watershed Drainage Basin	Percent of Total within IP area (approved or not approved)
Chesapeake Bay	253	64	317	85%	80%
Outside of Chesapeake Bay	58	0	58	15%	100%
Total	**311**	**64**	**375**	**100%**	**83%**

Table 2.27: Residential Septic Program grant-funded BMPs (7/1/2022 – 6/30/2023)

Drainage	River Basin	# of BMPs	Total BMP Cost
Chesapeake Bay	James-Appomattox	62	$138,570
Chesapeake Bay	James-Rivanna	-	-
Chesapeake Bay	Middle James	161	$142,116
Chesapeake Bay	Potomac-Shenandoah	-	-
Chesapeake Bay	Rappahannock	59	$131,066
Chesapeake Bay	Upper James	-	-
Chesapeake Bay	York	33	$189,055

Chesapeake Bay	**Sub-total**	**317**	**$605,007**
Outside Chesapeake Bay	Big Sandy	-	-
Outside Chesapeake Bay	New River	8	$15,827
Outside Chesapeake Bay	Roanoke-Dan	-	-
Outside Chesapeake Bay	Tennessee-Clinch	-	-
Outside Chesapeake Bay	Tennessee-Holston	26	$42,549
Outside Chesapeake Bay	Upper Roanoke	24	$231,982
Outside Chesapeake Bay	**Sub-total**	**58**	**$290,358**

Activity 6: Pursue other sources of funding to address failing on-site sewage systems including, but not limited to Revolving Loan Funds, Water Quality Improvement Fund, etc.

The VDH Division of Water and Wastewater Services administers VDH's onsite septic and private drinking water programs as well as manages all associated grant and loan funds.

The expansion of the onsite sewage indemnification fund provided in SB 1396 (in 2021) provides VDH with an ongoing financial resource to assist low-income households in repairing their onsite sewage systems. When an owner applies for an onsite sewage system construction permit with VDH, $10 of each application fee is collected and placed in the onsite sewage indemnification fund. The fund was created to provide relief to system owners experiencing a premature system failure because of VDH error. However, with the implementation of a quality assurance program for VDH designs and a shift to private sector designs, the fund has seen a significant reduction in the number claims. This legislation allows VDH to use the fund to provide grants and loans to households at or below 200% of the federal poverty guidelines to assist in repairing failed onsite sewage systems. In FY23 VDH did not utilize any Onsite Sewage Indemnification Funds for grants are loans but intend to use FY24 to develop the mechanism to utilize Indemnification Funds to fund onsite repairs.

In 2018, VDH was awarded $300,000 from the Virginia Environmental Endowment (VEE) with an additional $200,000 from the Smithfield Foundation, the philanthropic arm of Smithfield Foods, Inc., for a total of $500,000 to assist in the repair of failing onsite sewage systems. These funds were targeted to repair failing septic systems and remediate illicit sewage discharges (straight pipes) from homes in portions of James City County, Isle of Wight County, and Surry County within the Lower James River Watershed. The project ended 10/31/2023 and

VDH was successful in repairing 26 failing septic systems totaling $412,245 by installing regulatory compliant alternative onsite sewage systems capable of reducing nitrogen by 50% or connecting the homes to public sewer. VDH was not able to spend the entire $500,000 which, if accomplished, may have allowed for 4-5 additional septic system repairs. The COVID-19 pandemic and related impacts to supply chains created a delay in the installation of systems.

In August 2021, the General Assembly also approved $11.5 million in funding from the American Rescue Act Plan for improvements to well and septic systems for homeowners at or below 200% of the Federal Poverty Guidelines. This program is known as VDH's Septic and Well Assistance Program (SWAP). VDH developed SWAP to allow for the repair of failing onsite sewage systems, straight pipes, and pit privies with fully regulatory complaint conventional onsite sewage systems, alternative onsite sewage systems, alternative discharging sewage systems, or sewer connections as appropriate. The program also covers the replacement of inadequate private wells, spring, and cisterns with fully regulatory complaint private wells or public water supply connections.

The SWAP program splits funding into two mechanisms: direct funded projects and local partner projects. VDH has allocated $7.2 million to direct funded projects where property owners in need come directly to VDH to apply for assistance. The local health department assesses the property owner's income to verify they are at or below 200 percent of the Federal Poverty Guidelines. VDH then posts qualifying owner's projects on the state procurement system, eVA, for bidding by properly licensed contractors following the issuance of a permit.

VDH opened the SWAP application process for direct project in January 2022. Due to demand, applications had to be received by local health departments by September 2, 2022. VDH has received 274 direct project applications for 544 SWAP projects totaling an estimated $7,792,000 (note that $383,000 of this was sourced from VEE funds above or Most Effective Basin funding mentioned below). VDH has completed the installation of 186 repairs and designs thus far and an additional 140 septic pumpouts. In an effort to help facilitate the installation of projects VDH created a hybrid program, the Direct to Partner Initiative (D2PI), which identified 53 Direct projects and placed them into groups and issued grant agreements to local partners (e.g., planning district commissions) to engage with contractors and put these projects out for bid. Of these 53 projects, 37 are out in local partner agreements (of which roughly 80% are under a vendor contract secured by the local partner and are under construction, 5% are under procurement process and 15% have been completed). It should be noted that SWAP funding supports both septic and wells and the amount applications was almost split 50:50 between the two areas, however seeing as septic repairs are generally more costly the above referenced funding (~$7.79m) is estimated to be roughly split 65:35 in favor of funds to septic repairs.

In addition to SWAP's direct projects, VDH posted three rounds of RFAs for SWAP local partner funding with a maximum possible funding of $300,000 per partner. Eligible local partners are local governments, SWCDs, planning district commissions, Tribes, regional commissions, and nonprofits. VDH received six applications for local partner projects totaling just under $1.8 million in funding. These local partners will

provide funding to qualifying property owners with failing onsite sewage systems and private wells in the local partner's area. Agreements have been issued to give organizations: Middle Peninsula Planning District Commission (PDC), Northern Neck PDC, Accomack-Northampton PDC, Southeast Regional Action Program (SERCAP), and Fluvanna-Louisa Housing Partnership. A sixth agreement is under development with Rockbridge Area Conservation Council (RACC) will start in January 2024.

In 2022, the Virginia Department of Environmental Quality Chesapeake Bay Implementation team reached out to VDH -SWAP Initiative regarding funding available for onsite septic repairs and connections to public sewer related to the Environmental Protection Agency's Most Effective Basin funding that was allocated to Virginia through either the Chesapeake Bay Implementation Grant (CBIG) or the Infrastructure, Investment and Jobs Act (IIJA). DEQ provided two grant award agreements to VDH-Division of Water and Wastewater Services for a total of $1,160,000 to assist homeowners in addressing failing onsite septic systems by installing regulatory compliant alternative onsite sewage systems capable of reducing nitrogen by 50% or connecting the homes to public sewer. VDH is utilizing these funds in association with SWAP; specifically, $275,000 of these MEB funds (along with additional of SWAP-ARPA funds) through two agreements to Northern Neck Planning District Commission and Accomack-Northampton to complete 11 septic repair or connection to public sewer projects. These projects will be installed by June 30, 2024. DEQ also issued VDH-SWAP an additional $828,586 in MEB funds in December 2023 to continue this work. VDH plans on issue $1,525,000 in five agreements to local partners in January 2024 in the hopes that they will be able to help and additional 38 homes with failing onsite septic systems and generally will be available to homeowners at or below 80% of the Area Median Income (AMI).

The SWAP program has filled a critical need for additional funding, as evidenced by the hundreds of applications received within only a few months. However, it also highlights the need for additional funding. The program does include funding for the first two years of maintenance for alternative system; however, longer-term solutions for maintenance assistance is needed.

2.5 Resource Extraction Programs

The Virginia Energy (formerly Department of Mines Minerals and Energy) NPS Programs continue to address the identification, management, and reclamation of abandoned sites that may contribute NPS pollution to waterways. The Mined Land Repurposing Program oversees the Abandoned Mine Land Program, which assists with the reclamation of abandoned coal mines. The Mineral Mining Program manages the Abandoned Mineral Mined Lands to address abandoned mineral mined lands. Each program addresses NPS pollution from abandoned sites through a mix of regulatory, financial, and technical assistance. Table 2.28 summarizes the relationships among the Resource Extraction Programs' objectives, activities, and milestones, as well as the NPS Plan goals they address.

Table 2.28: Resource Extraction Programs Objectives

Resource Extraction Programs Objectives	Goals	Activities	Milestones
A: General Resource Extraction	1-4	1-5	M01, M02, M05
B: Enforcement of Laws	1	6	M01-M05
C: Identifying Sources of Water Quality Degradation	7-9	1-4	M01, M03, M04
D: Implementation of Abandoned and Orphaned Mined Land Programs	10	2,3	M03

Objective A: General Resource Extraction

Summary: Virginia Energy works to reduce water quality impacts associated with resource extraction activities through site inventories, data collection, site planning, site prioritization for reclamation, and BMP implementation. Virginia Energy additionally enforces state law, which requires operators of active mines to implement management practices controlling the release of sediment from sites and reclaiming sites to a stable condition once activity is complete. Virginia Energy NPS programs additionally address the identification, prioritization, management, and reclamation of extraction sites abandoned before such laws existed.

Activity 1: Reduce water quality impacts associated with resource extraction activities by proper site planning and BMP implementation.

Between July 1, 2022 and June 30, 2023, Mined Land Repurposing Program's Water Quality Section performed 195 water-quality-related plan reviews.

Activity 2: Reduce NPS pollution from abandoned and orphaned mined land.

The Abandoned and Orphaned Mine Land Programs have expended a cumulative $1,716,868 from the interest on the Minerals Reclamation Fund and AML sources to prioritize and remediate sites across Virginia posing environmental and safety hazards. A total of 16 sites were remediated between July 1, 2022 and June 30, 2023.

Ongoing progress for Abandoned Mineral Mined Land (non-coal) is summarized in Table 2.29.

Table 2.29: Summary of hazardous mine site remediation in Virginia

Hazardous sites identified	Sites prioritized for reclamation	% prioritized for reclamation	Total sites remediated	% sites remediated	Total acres mined land reclaimed

1264	174	14%	137	11%	832

Activity 3: Include water quality goals in prioritization of areas for reclamation activities.

This inventory of hazardous sites and prioritization for reclamation allows for the targeting of impaired waters in TMDL watersheds.

Activity 4: Document and report reclamation of active, orphaned, and abandoned mine sites.

All inventoried site reports are available on Virginia Energy's web map.

Activity 5: Enhance coordination between DEQ and Virginia Energy to collect and report data on BMPs installed on active mine sites as well as reclamation of active, abandoned, and orphaned mines.

DEQ participates annually in the Virginia Orphaned Lands Advisory Committee (OLAC) coordinated by Virginia Energy. Virginia Energy collaborates with DEQ on NPS Annual Reports and reports BMPS in DEQ's BMP Warehouse.

Objective B: Enforcement of Laws

Summary: Virginia Energy is the primary state agency involved with the regulation of resource extraction activities in Virginia.

On active mining sites, all water discharges including surface and groundwater discharges must flow through a National Pollutant Discharge Elimination System (NPDES) permitted discharge point and are a "point source" by definition. State law requires operators of active mines to implement management practices controlling the release of sediment from the sites and meeting both current state and federal effluent standards for point source discharges.

Activity 6: Virginia Energy will interpret and enforce Virginia mining laws consistently and review mining and drilling permits, taking appropriate action to ensure compliance.

All active sites must be reclaimed to a stable condition once the resource extraction activity is complete.

Objective C: Identifying Sources of Water Quality Degradation

Summary: Virginia Energy administers the Orphaned Mine Land Program. "Orphaned" or abandoned mineral mined lands (AMML) are those areas disturbed by the mining of all minerals (except coal) which were not required by law to be reclaimed or have not been reclaimed.

Activity 7: Virginia Energy will inventory, monitor, and report areas contributing significant sediments and mine water discharges to the water resources of Virginia and consider the pollution as part of the selection process for determining which sites will be reclaimed.

As of June 30, 2023, 3,249 orphaned mineral mined sites have been inventoried in 587 (47%) of Virginia's 1,247 hydrologic units (HUC). Of the inventoried sites *(* as of 06/30/23):*

- 1,264 sites were identified as safety hazards.
- 231 sites were identified as environmental hazards.
- 161 sites were identified as *both* safety and environmental hazards.

In addition to reclamation activities, pollutant reductions are achieved through the agency's BMPs and offset approach to TMDL implementation in its joint mining and discharge permitting processes.

Activity 8: Virginia Energy will investigate reported occurrences of NPS pollution and when appropriate, take action to eliminate, abate, or prevent water resource degradation

Virginia Energy's program goals include: the reduction of NPS pollution on abandoned mined land; development of water quality goals in prioritization of areas for reclamation activities; enhanced coordination between DEQ and Virginia Energy to collect and report BMPs installed on active mine sites, as well as reclamation of active and abandoned mines; and documentation and reporting of reclamation of active and abandoned mine sites. In calendar year 2023, Mineral Mining conducted 700 reclamation inspections and 18 complaint investigations.

Objective D: Implementation of Abandoned and Orphaned Mined Land Programs

Summary: Virginia Energy receives funding from the Section 319(h) NPS Program to conduct inventories of AMMLs to assist in prioritizing sites for reclamation. This inventory has been an important priority, as it provides the capacity to target impaired waterbodies (as well as headwaters) known to support high quality or healthy waters. Virginia Energy has prioritized reclamation sites identified in the various

inventories based on identified TMDL waters. The mine land inventories provide an ongoing basis for prioritizing and assessing program effectiveness.
Activity 9: Continue to inventory abandoned and orphaned mine land sites to provide the capability to target impaired waterbodies and to provide an ongoing basis for prioritizing and assessing program effectiveness. Virginia Energy will continue to inventory AMML sites and link those sites to impaired waters and TMDLs. See Resource Extraction Activities 2 and 7 above.

2.6 Resource Protection Programs

Virginia has a wide range of programs that seek to protect aquatic resources through identification of critical water supply, coastal and healthy aquatic resources, and implementation of proven management measures. Reported herein is annual progress in the Healthy Waters Program, Chesapeake Bay Preservation Act, Coastal Zone Management Program, and Source Water Protection Program. Table 2.30 summarizes the relationships among the Resource Protection Programs' objectives, activities, and milestones, as well as the NPS Plan goals addressed.

Table 2.30: Resource Protection Programs Objectives

Resource Protection Programs Objectives	Goals	Activities	Milestones
A: Healthy Waters Program	1,2,5	1	P01
B: Chesapeake Bay Preservation Act Program	1,4	2	P02
C: Coastal NPS Program	1,3,4	3	P04
D: Source Water Protection Program	1,4	4	P03

Objective A: Healthy Waters Program
Summary: In close cooperation and collaboration with Virginia Commonwealth University (VCU) and DEQ, DCR- Natural Heritage Program (NHP) manages the Healthy Waters Program (HWP). The Program seeks to identify and protect important segments of land (and the associated waterbodies) to prevent water quality degradation and promote the protection of aquatic communities.
Activity 1: Implement Healthy Waters Program, partially through 319(h) funds. DEQ has provided significant data and funding from Section 319(h), CBIG, and NOAA CZM to support the Program and broaden its applicability through ongoing partnerships with VDOF, NGOs, and the private sector. Highlights of activities include: • The Program has garnered support from DCR, DEQ and VCU increase on-the-ground capacity to develop a Healthy Waters Program Field Coordinator to take those tools created at the NHP and work closely with conservation partners to advance those conservation actions from planning tools into tangible implementation. The position will leverage the application of agricultural or forestry best management practices to meet local TMDL WIP measures in impaired but ecologically healthy waters. The intent of the position is to work with the eight (8) Coastal Planning District Commissions (PDCs) to assist coastal communities, Soil and Water Conservation Districts, VDOF, Land Trusts, Nature Conservancy, private land brokers and coordinate with other agencies on HWP community-based natural resource identification and protection and target areas in the Chesapeake Bay watershed in both the upper and coastal region • The HWP Manager outlined three years of funding from VA CZM, EPA S319 and EPA CBP CBIG to support the Healthy Waters Field Coordinator to be housed at the DCR NHP but employed by the VCU as a contractually obligated employee to the Commonwealth • The HWP met with the DCR and NHP management to identify the to implement on-the-ground conservation to meet the Chesapeake Bay Goals under the 2015 Bay Agreement and align with those goals and plans such as the 303d TMDL Impaired Waters list, state identified HWs, Ag Cost-Share and agricultural priority areas and DOF WIP3 forestry measures

- VCU and NHP have targeted the continuation of the field effort to collect aquatic integrity data as it relates to to integrate the Interactive Stream Assessment Resource (INSTAR) data to inform the HWP and to enhance the *ConserveVirginia* tool, refine the watershed models and to guide actions to conserve ecologically healthy waters
- To achieve a Chesapeake Bay Program goal of *100 percent of state-identified (as submitted in 2014) \healthy waters and watersheds to remain healthy by 2025* the Program reached an understand to direct the HWP Field Coordinator to develop criteria and/or model those areas most suitable for conservation based on TMDL WIPs, Ag Cost-Share, Coastal Program priorities, and be informed by the Bay Program's suggested approach to identify and conserve healthy watersheds based on the Chesapeake Healthy Watersheds Assessment (CWHA) .
- The NHP continues to refine the polygon referred to as a Stream Conservation Unit (SCU) to be defined as an NHDPlus-HR catchment area. This is similar to that used in the watershed-based conservation planning model and would align with the CHWA.
- The Virginia Healthy Waters Program Manager continued to serve as the Virginia Chair for the CBP Goal Implementation Team Four (GIT4; Healthy Watersheds). The team includes various state Healthy Waters programs and partners in the Chesapeake Bay watershed.

Objective B: Chesapeake Bay Preservation Act Program

Summary: The Bay Act program recognizes local governments' primary responsibility for land use decisions, expanding local government authority to manage water quality, and establishing a more specific relationship between water quality protection and local land use decision-making. The Program provides funding as well as technical assistance to local governments through DEQ's Chesapeake Bay liaison staff and the conduction of compliance reviews of local programs performed every five years help to ensure success.

Activity 2: Continue to undertake regulatory compliance evaluations and provide technical assistance to support implementation of the Chesapeake Bay Preservation Act.

Chesapeake Bay Preservation Act (CBPA) compliance reviews continued to be conducted for the Tidewater localities subject to the CBPA. DEQ Local Government Assistance Program staff are striving for all 84 CBPA localities to be in the position of completing the periodic compliance reviews every five years.

Table 2.31 includes a summary of compliance review status for CBPA localities and reported implementation based on the 2022 annual report cycle (January 1, 2022 – December 31, 2022). See also Residential Sewage Activity 4.

Table 2.31: Summary of CBPA compliance reviews, 2022

Localities w/Completed Compliance Review	Localities scheduled for compliance review	Soil and water quality assessments on ag land	Septic systems pumped out
84	4	55	8,564

Objective C: Coastal NPS Program

Summary: Virginia's Coastal NPS Program is facilitated through the Virginia Coastal Zone Management (CZM) Program (Virginia CZM). It is implemented by both Virginia CZM AND agency partners including DEQ with state and federal grants including 319(h) funding.

Section 306/306A of the Coastal Zone Management Act (CZMA) provides funds from the National Oceanic & Atmospheric Administration (NOAA)'s Office for Coastal Management (OCM) to implement federally-approved CZM Programs related to NPS issues. Efforts include assessments of water quality as well as resiliency (Section 306), for land acquisition, low-cost construction of public access facilities, or habitat restoration (Section 306A). Section 309 of the CZMA is known as the Coastal Zone Enhancement Program and provides NOAA-OCM funds for the development of new enforceable policies, which may include addressing non-point source issues.

Through both sources of NOAA-OCM funding, Virginia CZM focuses on pollution prevention and encourages efforts at a regional and local level, particularly improvements to land use planning and zoning practices to protect coastal water quality through grants under Section 306 three-year Focal Areas (Resiliency, Local Land & Water Quality, etc.), completion of its Section 309 Coastal Needs Assessment, and the subsequent creation and implementation of its Five-Year Section 309 Coastal Enhancement Strategies.

During the current reporting period (July 1, 2022 – June 30, 2023), projects associated with the current (FY2021-2025) Section 309 Strategies included continuing initiatives to implement the Virginia Marine Debris Reduction Plan to better align with the NOAA Mid-Atlantic Marine Debris Action Plan under the FY2021-2025 Marine Debris Strategy and to address issues identified under the FY2021-2025 Coastal Hazards Strategy. Section 306/306A efforts during the same reporting period included regional resiliency efforts and planning habitat restoration efforts. One (1) FY2019 habitat restoration effort (Task 9 - lower York River oyster reef restoration) was completed in February of 2023.

Details on the previous Section 309 Strategies, current Section 309 Strategies, and current Section 306/306A efforts are detailed below.

Activity 3: Implement components of the Coastal NPS Program through the Virginia Coastal Zone Management Program including cumulative and secondary impacts to water resources.

Virginia is awarded funds based on the size of its coastal population and the length of its tidal shoreline; the Commonwealth currently receives about $3 million annually from the National Oceanic and Atmospheric Administration (NOAA), Office for Coastal Management (OCM) under Sections 306, 306A, 309 and 310.

Specific accomplishments from these funds include:

- **Implementation of the Virginia CZM Program** – Section 306: Funding for the implementation of the Virginia CZM Program, utilizing state, regional, and local partners.

- In FY2020, Virginia CZM began funding four projects for a Section 306 Climate Adaptation & Resilience Focal Area (FY2020-2022). Two of the four Resilience Focal Area projects are associated with water quality improvements during the reporting period:
    - FY2021 and FY2022 Nearshore Habitat Restoration in the Middle Peninsula (Years 2 of 3 and 3 of 3) is ongoing and will provide shoreline stabilization design best practices at a local and regional scale using the New Point Comfort Natural Area Preserve's shoreline (FY2021) and shoreline parcels adjacent to the Captain Sinclair Recreation Area (FY2022) as pilot studies. The project lead is the Middle Peninsula Planning District Commission (MPPDC) with support from the Virginia Institute of Marine Science (VIMS)'s Shoreline Studies Program (SSP).
    - Supplemental funds to the eight coastal PDCs annual Technical Assistance grants in FY2022 continue to improve resiliency at the local level and assisted in the development and implementation of the Virginia Coastal Resilience Master Plan (VCRMP), including a focus on green infrastructure as a tool to mitigate sea level rise and improve water quality. These efforts and funding will continue via FY2023-2025 Resilience Focal Area grants to each coastal PDC.

- **Acquisition and Construction Projects – Section 306A:** Funding for the acquisition of fee-simple and other interests in land, such as easement acquisition, low-cost construction projects (e.g., public access improvements), or habitat restoration projects.
    - FY2019 lower York River oyster reef restoration by the Virginia Marine Resources Commission (VMRC) featured deployment of rock substrate to facilitate oyster larval recruitment on approximately 17.2 acres of subaqueous bottom was completed in February of 2023.
    - FY2021 Hog Island Shoreline Restoration by MPPDC featured deployment of oyster castles along the shoreline to mitigate erosion. Work began in June of 2023 and is anticipated to be complete by September 2023.
    - The Upper Mattaponi Indian Tribe (UMIT) received approximately $3 million in Bipartisan Infrastructure Law (BIL) funding from NOAA via a nationally competitive challenge to acquire approximately 850 acres on the Mattaponi River in King William County. Virginia CZM submitted a proposal on behalf of the UMIT and is currently serving as fiscal agent for the project. The UMIT closed on the property sale in July of 2023 and will begin work on a Baseline Habitat Monitoring Plan. The anticipated date of completion for the whole project is March of 2024.
    - VIMS received approximately $2.2 million in NOAA BIL funding to restore eelgrass and Bay scallop populations in Burton's Bay in Accomack County. Virginia CZM submitted the proposal via the same national challenge as the UMIT land acquisition and serves as the fiscal agent.

- **Creation of New Enforceable Coastal Policies – Section 309:** Funding for coastal zone enhancement projects, which propose creation of new enforceable policies in any of nine identified areas.

    - As part of the current (FY2021-2025) five-year Section 309 Coastal Hazards and Marine Debris Strategies, Virginia CZM began new policy development efforts. Work by Virginia CZM staff also continues to implement elements of the FY2016-2020 Cumulative and Secondary Impacts of Growth and Development (CSI) Strategy, although that Strategy has ended. Specific accomplishments include:

        - The FY2020 Section 309 Project of Special Merit (nationally competitive award to supplement the Coastal Hazards Strategy funding) team (Virginia Coastal Policy Center, VIMS, and DEQ's Office of Watersheds & Local Government Assistance) completed a guidance document for localities on how to integrate adaptations to recurrent flooding with water quality improvements. The guidance will accompany recent regulatory changes to the Chesapeake Bay Preservation Act (CBPA) required by the 2020 General Assembly. The Virginia CZM-funded portion of the project (draft guidance document and VIMS modelling) was completed in March of 2023. DEQ's final guidance document was put out for public comment in May of 2023 and completion is anticipated soon.

        - The FY2016-2020 Section 309 CSI Strategy project focused on addressing development pressure in the Lower Chickahominy River Watershed by bringing local governments and tribes located in Virginia together to foster dialogue about shared visions for land use, sustainable development, and cultural resource preservation. These entities finalized a Lower Chickahominy Watershed Collaborative (LCWC) memorandum of understanding (MOU) in November of 2021 to solidify consultation and coordination on the aforementioned issues. The final year of the Section 309 CSI project officially ended in March of 2022, but Virginia CZM has continued to support the meeting of the LCWC Steering Committee and associated work groups to address Watershed priorities through funding Richmond Regional PDC (PlanRVA) staff support through an annual TA grant to PlanRVA for FY2022. Virginia CZM staff also served a leadership role in work group meetings during the reporting period.

        - Implementation of the FY2021-2025 Section 309 Marine Debris Strategy consisted of updating the 2014 Virginia Marine Debris Reduction Plan (VMDRP) document to align with NOAA's Mid-Atlantic Marine Debris Action Plan. This was accomplished during the previous reporting period and Virginia CZM staff along with Virginia CZM-funded and unfunded partners are currently working on additional implementation measures, including the development of public outreach materials via the Abandoned & Derelict Vessels Work Group (ADVWG)'s Prevention & Public Education (PPE) Subcommittee, maintaining a statewide ADV inventory, and assisting VMRC in the development of an ADV removal program. In March of

2023 VMRC launched a program where localities with ADV removal ordinances in place and Tribes are eligible to apply for grant funding for vessel removal. Collectively removal and prevention of ADVs can help protect water quality as many vessels leak fuel or disrupt sensitive coastal habitats.

- **Implementation of the Virginia Coastal Nonpoint Source Pollution Program – Section 310:** Currently the Coastal Nonpoint Source Pollution Program is not funded.

Other accomplishments include use of match funding by state partners for the overall Virginia CZM award from NOAA-OCM and water quality improvement outcomes associated with Virginia CZM funding.

Locality Stormwater Management

- DEQ's Stormwater Local Assistance Fund (SLAF) continued by providing matching grants to Henrico County for the Tuckahoe Park Stream Restoration project (FY2020), to Hanover County for the Cherrydale Pond BMP Retrofit project (FY2021), and to Fairfax County for the Accotink Tributary at Danbury Forest Stream Restoration project (FY2022). The Tuckahoe park project was completed in February of 2023, while the Cherrydale Pond and Accotink Tributary projects are ongoing.
- Several coastal PDCs have continued to use Virginia CZM funding for FY2022 grants to convene quarterly meetings of locality stormwater managers (George Washington Regional Commission), conduct outreach campaigns to educate the public on water quality issues associated with nonpoint source pollution (Northern Virginia Regional Commission), and monitor groundwater quality (Accomack-Northampton PDC).

DEQ Regulatory Review

- Virginia CZM continued to review NPS pollution aspects of projects as part of their federal consistency review/Environmental Impact Review (EIR) process. DEQ EIR staff and PDC partners contributed to this effort during the reporting period, but no significant impacts to water quality (positive or negative) occurred as a result of their collective reviews. The EIR process will continue during the next reporting period.

Objective D: Source Water Protection Program

Summary: The Virginia Department of Health (VDH) Office of Drinking Water (ODW) is the designated office within VDH tasked with implementing the Safe Drinking Water Act (SDWA) in Virginia. VDH-ODW performs Source Water Assessments (SWA) as a baseline inventory of potential contamination threats to drinking water sources. VDH-ODW administers a voluntary Source Water Protection Program financed by

the Drinking Water State Revolving Fund (DWSRF) to enhance eligible waterworks' abilities to guarantee long-term capacity to produce safe drinking water and protect source waters.

Activity 4: The Source Water Protection Program will continue to focus on education, empowerment, and financing initiatives through its various programs and partnerships.

As part of the Source Water Protection Program, The Office of Drinking Water at VDH has undergone several projects related to surface water protection. VDH received a grant providing for the town of Purcellville's project to fence five wells and to partially fund Middleburg's design, construction and contingency plans.

VDH is also participating in the Executive Committee for the Occoquan Sewershed (ECOS) with Virginia Tech. This is a research project focused on developing solutions to freshwater salinization in the Occoquan Sewershed. The project is designed with regular interactions between the project team and stakeholders to ensure that the design and interpretation of findings are grounded in real world conditions and provide information that is relevant to management decisions in practice.

One goal of the assistance program is to spread source water awareness and educate waterworks and communities on measures they can implement to protect their water sources.

ODW's contractors, Tetra Tech and CHA, interacted with a total of 38 waterworks. The interactions included updating Sourcewater Protection Plans (SWPPs), coordinating with systems with draft SWPPs, conducting implementation assistance and completing the annual substantial implementation survey.

To determine if waterworks are maintaining a Strategy In Place (SIP) and meet the 2014 and 2021 definitions of Substantial Implementation (SI). Tetra Tech developed a two-page survey to identify whether each system has a SIP, if the SIP is substantially implemented based on the 2014 definition currently approved by VDH, or if the SIP is substantially implemented based on the proposed 2021 definition provided by VDH. Tetra Tech used the list provided by VDH to email the survey link to all systems. If the system did not respond to the initial email, Tetra Tech emailed a second request two weeks later.

Responses to the annual survey in the first quarter were used to reach out to systems, describe the available assistance, and work with systems interested in moving forward with SWPP development or a SWPP update.

2.7 Urban and Developed Lands Programs

Though stormwater captured though a confined or discrete conveyance to a waterbody is permitted as a point source, there are opportunities to address stormwater and developed lands through non-regulatory programs. This includes urban nutrient management as well as stormwater activities not directly implementing a NPDES permit. DEQ addresses both categories of activities using Section 319(h) funds. Table 2.32 summarizes the relationships among the Urban and Developed Lands Programs' objectives, activities, and milestones, as well as the NPS Plan goals addressed.

Table 2.32: Urban and Developed Lands Programs Objectives

Urban and Developed Lands Programs Objectives	Goals	Activities	Milestones
A: Urban Nutrient Management	1	1	U01
B: Stormwater and Developed Lands	1-5	2-4	U01

Objective A: Urban Nutrient Management
Summary: Section 3.2-3602.1 of the *Code of Virginia* addresses the application of regulated products (fertilizer) to nonagricultural property. It calls for training requirements, establishment of proper nutrient management practices, and reporting requirements for contract-applicators applying fertilizer to more than 100 acres, in addition to employees, representatives or agents of state agencies, localities, or other governmental entities applying fertilizer to nonagricultural lands. The activity for this NPS Management Plan focuses specifically on state-owned land.
Activity 1: Increase nutrient management planning to include 85% of all applicable state-owned land. Notifications are sent annually to all state agencies reminding them of the need to have current plans according to the Code of Virginia. The number of urban acres with nutrient management plans continues to increase; in FY2023 urban acres with nutrient management plans exceeded 35,953 acres. Golf courses and state agencies applying nutrients continue to implement nutrient management plans in accordance with state laws, regulations, and permits. See also Agriculture and Nutrient Management Activity 7.

Objective B: Stormwater and Developed Lands
Summary: The Virginia NPS program allows many opportunities to address stormwater runoff not regulated by permits. These include BMPs identified in EPA-approved implementation plans addressing urban sources of pollution in addition to mitigation of the water quality impact of urban and suburban stormwater and impervious surfaces by encouraging and implementing tree planting projects, riparian buffer establishment, rain gardens, other infiltration (bio infiltration) practices, and forest management strategies.
Activity 2: Control NPS pollution from developed sites to protect downstream properties and local health. From July 2022 through June 2023, the continued focus of DEQ central and regional office staff has been assisting local governments with the implementation of their local stormwater management programs, which includes addressing erosion and sediment control.

Ninety-four (94) local governments continued to implement their previously approved local stormwater management programs with the assistance of DEQ central and regional office staff. In addition, DEQ central office staff and local governments continued to process coverage under the Construction General Permits using the Stormwater Construction General Permit System. This online system enables local stormwater management programs to continue to coordinate their efforts with DEQ's issuance, modification, transfer, and termination of Construction General Permit coverage.

DEQ central office staff performed one local government erosion and sediment control program audit. DEQ regional office staff continued to visit small and large construction activities to perform site inspections for compliance with the 2019 Construction General Permit, which includes addressing erosion and sediment control in a manner consistent with the Erosion and Sediment Control Law and attendant regulations. To reduce NPS pollution from stormwater runoff, the Virginia General Assembly included Item 360 in Chapter 806 of the 2013 Acts of Assembly (the Commonwealth's 2013 Budget Bill), which created and set forth specific parameters for the administration of the Stormwater Local Assistance Fund (SLAF). The purpose of the Fund is to provide matching grants to local governments for the planning, design, and implementation of stormwater BMPs addressing cost efficiency and commitments related to reducing pollutant loads to the state's surface waters. In accordance with that legislation, the State Water Control Board approved Guidelines for the implementation of the SLAF program. The Guidelines call for an annual solicitation of applications, an application review and ranking process, and the authorization of a Project Funding List by the DEQ Director.

The General Assembly has provided a total of $210 million in funds for the SLAF Program since it began in FY 2014. A total of $171 million in SLAF funding has been authorized for 331 projects through eight solicitation cycles.

The Virginia Conservation Assistance Program (VCAP) is administered by the Virginia Association of SWCDs. Districts with qualified, trained, and experienced staff implement the voluntary stormwater BMPs and cost-share program for public, private, and nonprofit landowners. Recognizing the importance of this Program, the Virginia General Assembly has provided $2.5 million in state funding for FY2020 –2022. The fund was established to assist the Commonwealth in meeting its reduction targets for urban and residential areas as established in the Chesapeake Bay TMDL including localities with Municipal Separate Storm Sewer Systems (MS4). VCAP provides cost-share and technical assistance to address natural resource and stormwater concerns by assisting in the voluntary installation of certain BMPs on land for which there is no other cost-share program assistance available. VCAP is also intended to retrofit existing infrastructure.

Activity 3: Implement state policies outlined in Virginia's Phase III Watershed Implementation Plan for the Chesapeake Bay TMDL.

On January 16th, 2024, DEQ submitted Virginia's Chesapeake Bay 2022-2023 Programmatic Milestones Final Progress to EPA's Chesapeake Bay Program Office (EPA-CBPO) on behalf of the Secretary of Natural and Historic Resources. Virginia's draft 2024-2025 Programmatic Milestones and draft 2024-2025 Numeric Milestones were also submitted to EPA-CBPO at that time.
Activity 4: Fund, where possible, urban components of EPA-approved implementation plans for activities not directly implementing a permit. Many of the EPA-approved implementation plans call for the installation of BMPs addressing unregulated components of urban areas. All RFAs issued utilizing either Section 319(h) NPS funding or non-agricultural NPS WQIF have the ability to fund urban activities. Although not specifically targeted for implementation plan areas, the aforementioned funding programs, SLAF and VCAP (in 2.7 Activity 3) may also result in BMP installation within approved IP areas. When possible, this information is included in any progress reporting on the implementation success.

2.8 Watershed Roundtable Programs

As of 2022, Virginia has 12 active and funded watershed roundtable organizations. Roundtables provide watershed-based forums for stakeholders to participate in defining critical watershed needs, targeting problems for solutions, and providing input on potential management options to restore and protect water quality. Table 2.33 summarizes the relationships among the Watershed Roundtable Programs' objectives, activities, and milestones, as well as the NPS Plan goals addressed.

Table 2.33: Watershed Roundtable Programs Objectives

Watershed Roundtable Objectives	Goals	Activities	Milestones
A: Watershed Roundtable Initiative	1-5	1,2	R01

Objective A: Watershed Roundtable Program
Summary: DEQ provides various funding opportunities for watershed roundtable activities in Virginia to help them achieve water quality improvement goals. Generally, Section 319(h) funds roundtable activity outside of the Chesapeake Bay, and the Chesapeake Bay Implementation Grant (CBIG) funds roundtable activity within the Bay.
Activity 1: Establish watershed roundtables for priority river basins to provide watershed-based forums for stakeholders to participate in defining critical watershed needs, targeting problems for solutions, and providing input on potential management options to restore and protect water quality.

During FY2023, out of the 14 river basins with historic watershed roundtables statewide, 10(71%) roundtables were active (Table 2.34). For 2023, Virginia exceeded its goal for the 2020-2024 period to have active watershed roundtables in at least 60% of the river basins. More information can be found on DEQ's website: Watershed Roundtables.

Table 2.34: Summary of past and current watershed roundtables in Virginia as of 2023

River Basins	Status as of June 2023 plus funding source	Within Chesapeake Bay
Albemarle-Chowan Watershed	Not Active or Funded	No
Big Sandy River Basin	Not Active or Funded	No
Dan River Basin	Active but not funded	No
Eastern Shore Watersheds	Active, CBIG funding	Yes
Lower James River	Not Active or Funded	Yes
Middle James River	Active, CBIG funding	Yes
New River Basin	Active, 319(h) funding	No
Potomac River Basin	Active, CBIG funding	Yes
Rappahannock River Basin	Active, CBIG funding	Yes
Shenandoah River Basin	Active, CBIG funding	Yes
Upper James River	Active, CBIG funding	Yes
Upper Roanoke River	Not Active or Fundedunded	No
Upper Tennessee River	Active, 319(h) funding	No
York and Small Coastal Basins	Active, CBIG funding	Yes

Activity 2: Provide funding for at least eight watershed roundtables annually (through Section 319(h)) for Southern Rivers and Chesapeake Bay Implementation Grant for Bay roundtables.

During FY2023, out of the 14 historic watershed roundtables statewide, 9 (64%%) roundtables were funded (Table 2.34): seven within the Chesapeake Bay, funded with CBIG and two outside of the Chesapeake Bay (a.k.a. Southern Rivers) funded with Section 319(h). DEQ exceeded the NPS Management plan activity goal of funding 8 of the 14 possible roundtables (57%) annually.

Chapter 3: Virginia 2019-2024 NPS Program Milestones

This chapter summarizes the accomplishments of the NPS Implementation Milestones for 2023, tracking back to the original milestones from 2019-2024 Virginia NPS Pollution Management Plan.

3.1 Virginia Milestone History and Background

There were forty (40) original milestones when the 2019-2024 NPS Management Plan was developed. Individual milestones were associated with at least one of the five individual NPS Program Goals and further assigned to specific objectives and activities associated with one of the eight program areas described in Chapter 2: Summary of FY2023 NPS Program Activities.

DEQ continues to utilize an internal Tracking and Reporting Tool collecting critical information for milestones and activities identified in the 2019 NPS Management Plan.

A full and complete output report of the Tracking and Reporting Tool will be provided separately to EPA. A summary of the milestone information is provided here, and summarized information related to activities is provided in each relevant section of Chapter 2: Summary of FY2023 NPS Program Activities.

3.2 FY2023 Virginia Milestone Summary

During the development of the FY2021 NPS Annual Report, it was determined that some of the original 40 milestones needed to be split into "sub-milestones" based upon different reporting units or metrics. For example, if the original milestone included any lists of different items (e.g., separate BMPs or activities) DEQ subsequently developed a sub-milestone that would allow us to track all relevant information. As a result, 75 different milestones and sub-milestones were tracked and reported on for the FY2023 NPS Annual Report. The Activity Tracking Tool provides the details of all these 75 different milestones. A full copy of the progress towards meeting Virginia's 5-year NPS Milestone and Activity goals can be found on the Virginia NPS Reporting website at the 2023 NPS Milestone Reporting Tool.