
West Virginia Animal Agriculture Program Assessment

Final

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Acronyms and Abbreviations

AFO	Animal feeding operation
BMP	Best management practice
CAFO	Concentrated animal feeding operation
CBP	Chesapeake Bay Program
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
FTE	Full-time equivalent
FY	Fiscal year
MOU	Memorandum of understanding
NMP	Nutrient management plan
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
TMDL	Total maximum daily load
USDA	United States Department of Agriculture
WIP	Watershed Implementation Plan
WVCA	West Virginia Conservation Agency
WVDA	West Virginia Department of Agriculture
WVDEP	West Virginia Department of Environmental Protection
WV/NPDES	West Virginia/National Pollutant Discharge Elimination System

1.0 Executive Summary

The U.S. Environmental Protection Agency (EPA) conducts periodic reviews of state programs as part of its oversight responsibilities under the Clean Water Act (CWA). Previously, EPA's program reviews have not focused exclusively on animal agriculture regulations and programs. EPA decided to conduct assessments of animal agriculture programs related to water quality in the six Chesapeake Bay jurisdictions as part of its oversight responsibilities under the Chesapeake Bay Total Maximum Daily Load (TMDL) and National Pollutant Discharge Elimination System (NPDES) Permit Program. This review also satisfies certain EPA commitments made in the settlement agreement that resolved the lawsuit [Fowler et al. v. EPA](#), No. 1:09-cv-0005-CKK (D.D.C.). As such, the West Virginia review is one of six animal agriculture program reviews that will be completed by 2015.

EPA conducted an assessment of the State of West Virginia's (State) animal agriculture programs related to water quality. This assessment (1) identifies successes and challenges within the State's animal agriculture programs related to water quality; (2) evaluates the programs that are available to support West Virginia's agricultural pollutant load reduction commitments set forth in West Virginia's Watershed Implementation Plans (WIPs) to achieve the allocations set forth in the Chesapeake Bay TMDL; and (3) evaluates West Virginia's NPDES permit program (including its implementation) for concentrated animal feeding operations (CAFO) with federal NPDES and CAFO requirements. The main goal of the assessment is to determine whether the state programs are consistent with CWA requirements and are implemented effectively to achieve West Virginia's animal agriculture WIP commitments to reduce nitrogen, phosphorus, and sediment under the Chesapeake Bay TMDL.

This assessment briefly summarizes State environmental regulations applicable to animal agriculture operations as well as those West Virginia agencies with regulatory and technical responsibilities for animal agriculture operations. The report also includes EPA's analysis of how the State is implementing its animal agriculture programs related to water quality. The specific programs assessed are the Nutrient Management Program and the West Virginia/National Pollutant Discharge Elimination System (WV/NPDES) CAFO Program. These programs were compared to the goals outlined in West Virginia's WIP. West Virginia was forthcoming with a considerable amount of material and information to support this assessment.

This assessment is based on responses from West Virginia to an animal agriculture program questionnaire developed by EPA, information in 30 animal feeding operation files provided by the West Virginia Department of Environmental Protection (WVDEP), and program information available from agency websites. The observations outlined in this report provide a framework for West Virginia to strengthen implementation of their animal agriculture programs related to water quality and work toward improved water quality within the State and the Chesapeake Bay watershed.

According to the United States Department of Agriculture (USDA), National Agricultural Statistics Service Census of Agriculture (Ag Census), West Virginia had 14,261 farms statewide with livestock and poultry in 2007 (USDA, 2009) and 12,752 farms statewide with livestock and poultry in 2012 (USDA, 2014). According to the 2012 USDA Ag Census, West Virginia had approximately 2,637 livestock and poultry operations in the Chesapeake Bay watershed in 2012.

WVDEP, the West Virginia Department of Agriculture (WVDA), and the West Virginia Conservation Agency (WVCA) have statutory and regulatory authority to manage animal agricultural programs in West Virginia. WVCA administers cost-share and technical support programs for the agricultural community. As a whole, EPA reviewed two main programs that these agencies implement that emphasize on-farm best management practices (BMPs) to maintain or improve the quality of water runoff from farms into surface waters: 1) Nutrient Management Program and 2) WV/NPDES CAFO Program. EPA also analyzed how these programs support West Virginia's implementation of its WIP and the BMPs that are necessary in order to achieve the WIP goals. The purpose of EPA's assessment was to look at both of these programs and evaluate how well they work together collectively to meet CWA requirements and the State's animal agriculture commitments made to meet the Chesapeake Bay TMDL requirements.

Watershed Implementation Plan (WIP) Best Management Practices (BMP) Implementation

West Virginia's Phase I and Phase II Watershed Implementation Plans (WIPs) detail how the State plans to meet Chesapeake Bay TMDL loading allocations for nitrogen, phosphorus, and sediment. West Virginia submitted its Chesapeake Bay TMDL Phase I WIP on November 29, 2010 and its Phase II WIP on March 30, 2012. West Virginia anticipates that the agricultural strategies outlined in the Phase I WIP and Phase II WIP, particularly voluntary nutrient management planning and ongoing support for the State's cost-share and technical support programs, will provide significant opportunities toward meeting the load reductions for the agricultural sector.

In evaluating whether the State's CAFO and AFO programs are aligned with meeting the Chesapeake Bay TMDL, EPA focused its assessment on five EPA selected "priority BMPs": (1) nutrient management, (2) animal waste management systems, (3) conservation plans, (4) stream fencing on pastures, and (5) vegetated buffers on pastures. EPA chose to focus on these practices because they are related to animal agriculture and they represent BMPs that West Virginia identified in its WIPs (and associated input decks) and is relying on to achieve a significant portion of its animal agricultural nutrient and sediment reductions. EPA found that West Virginia's animal agriculture programs related to water quality require the implementation of some but not all of these priority BMPs. Nutrient management plans (NMPs) and animal waste management systems are required for all WV/NPDES permitted CAFOs. Currently WV has two permitted CAFOs. Conservation plans, stream fencing on pastures, and vegetated buffers on pastures are not required by any West Virginia animal agriculture programs.

West Virginia is relying heavily on programs with voluntary participation, such as the West Virginia Agricultural Enhancement Program (AgEP) and USDA Farm Bill programs, in order to increase BMP implementation to meet West Virginia's WIP goals. For example, to support increased NMP implementation, WVDA has increased staffing to support NMP development and worked to create a shared, online database to accurately track, report, and verify all agricultural BMPs. According to West Virginia, this database will be an important tool for the state and federal field staff as they carry out daily field visits and will allow staff to verify practice compliance as well as identify opportunities for additional practice implementation.

West Virginia's current state programs are limited in their ability to require BMPs for animal agriculture operations in order to address West Virginia's Chesapeake Bay WIP commitments. To date, West Virginia has issued two WV/NPDES CAFO permits. Apart from the conditions set forth in an NPDES

permit, West Virginia, does not have authority to require any of the priority BMPs for the other animal agriculture operations, but seeks to implement them through voluntary programs.

West Virginia can continue to make progress and meet goals in reducing nutrient and sediment loading from (1) increasing voluntary BMP installation at unpermitted operations and (2) increasing the issuance of NPDES permits for operations that are required to implement BMPs. In the event that West Virginia is unable to keep up with or make progress toward meeting its agricultural implementation goals, West Virginia has indicated in its Phase I and Phase II WIPs that it will request additional federal funds or request a modification of existing grants, such as the Chesapeake Bay Regulatory and Accountability Program (CBRAP) grant, to allow funds to be used for “on the ground” implementation of practices instead of for regulatory controls and compliance rates.

While there is still some uncertainty about the detailed strategies West Virginia has for these voluntary programs to stay on pace with meeting BMP implementation targets outlined in its WIP, West Virginia is currently meeting its modeled nutrient and sediment goals and has stated that West Virginia will continue to adapt programs according to needs to achieve the 2025 WIP BMP and pollutant load reduction goals.

Nutrient Management Program

The West Virginia Nutrient Management Program includes both a nutrient management planning program and a nutrient management certification program.

All WV/NPDES-permitted CAFOs are required to develop and implement an NMP. All unpermitted Large CAFOs are also required to develop and implement an NMP in order for the CAFO to qualify for the agricultural storm water exemption. All other NMPs in West Virginia are voluntary.

The Nutrient Management Certification Program, which is implemented by WVDA, regulates individuals who write nutrient management plans (NMPs). All NMPs in West Virginia must be developed by a certified nutrient management planner. In order to be certified, an individual must demonstrate nutrient management experience working with farmers and pass a WVDA certification examination. Nutrient management certificates are valid for two years before they must be renewed. WVDA monitors the credentials and continuing education for the nutrient management certificate holders.

West Virginia has 72 certified nutrient management planners, including 19 (approximately 26%) in the Chesapeake Bay watershed. Four of these individuals are WVDA staff completely dedicated to writing and renewing NMPs. They are also supported by WVDA’s CAFO Specialist, as well as by summer interns who do much of the initial legwork by pulling soil samples and preparing the necessary paperwork to expedite the NMP development process. Additionally, there are three Outreach Specialists (one at WVDA and two at WVCA) who promote NMP adoption.

In FY2015, 603 farms in West Virginia had active NMPs, including 375 farms in the Chesapeake Bay watershed. WVDA estimates that approximately 95% of NMPs (approximately 573 NMPs) are associated with animal agriculture operations, while only 5% of NMPs (approximately 30 NMPs) are associated with crop-only operations. NMPs cover approximately 61,298 acres in West Virginia’s portion of the Chesapeake Bay watershed, including approximately 242 acres (0.4%) at NPDES-permitted CAFOs.

WVDEP evaluates NMP compliance at WV/NPDES-permitted CAFOs during WVDEP's compliance inspections, which occur once per five-year permit cycle. WVDA does not conduct any compliance activities to determine NMP compliance at farms with voluntary NMPs and WVDEP does not conduct any compliance activities to determine NMP compliance at unpermitted Large CAFOs. WVCA does review NMP records for compliance during the ranking process for cost-share funding.

NMPs are also an important component in order to participate in cost-share programs with USDA and WVCA. NMPs are required for any Animal Waste Management System practice with USDA cost-share, and NMPs give producers a higher ranking for obtaining AgEP funding from WVCA. Higher ranking for cost-share funding is given to producers who participate in the AgEP program and maintain and follow NMPs, and WVCA reviews the producers' NMP records for record keeping compliance during the ranking process. West Virginia also requires NMPs for farmers who participate in the poultry litter transfer program and receive cost-share funding to export nutrients out of the Chesapeake Bay watershed.

West Virginia's Nutrient Management Program requires one of the five priority BMPs. West Virginia's Nutrient Management Program requires NMPs for all WV/NPDES-permitted CAFOs and for all unpermitted Large CAFOs through the WV/NPDES CAFO Program. West Virginia's Nutrient Management Program does not require animal waste management systems, conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

WV/NPDES CAFO Program

The WV/NPDES CAFO program, which is implemented by WVDEP, issues WV/NPDES CAFO individual permits for discharges of pollutants. WV/NPDES permitted CAFOs are required, among other things, to implement an NMP, maintain records of manure generation and utilization, and submit an annual report to WVDEP each year summarizing manure generation and utilization at the facility.

To date, WVDEP has issued two WV/NPDES CAFO individual permits, both located in the Chesapeake Bay watershed. WVDEP also has received 20 additional WV/NPDES CAFO permit applications, including 18 from facilities in the Chesapeake Bay watershed. WVDEP has not issued any WV/NPDES CAFO permits since March 14, 2014. All CAFOs that discharge pollutants from the production area into waters of the United States are required to obtain WV/NPDES CAFO permits. There may be additional poultry operations in West Virginia that need WV/NPDES CAFO permits, and EPA will continue to work with WVDEP to ensure compliance at poultry operations in West Virginia.

WVDEP has demonstrated its ability to enforce its WV/NPDES CAFO regulations through inspections and enforcement actions. In FY2012 and FY2013, WVDEP inspected 92 poultry facilities to make permit determinations of which facilities needed WV/NPDES CAFO permits. WVDEP issued NOVs to 38 facilities that were discharging without WV/NPDES CAFO permits. In response, 21 of the 38 facilities took corrective actions to eliminate the discharge and the remaining 17 facilities were required to submit WV/NPDES CAFO permit applications. WVDEP has not conducted any permit determination inspections since March 11, 2013.

WVDEP conducts random compliance inspections at all WV/NPDES permitted CAFOs once every five-year permit cycle. Neither WV/NPDES permitted CAFO was inspected in FY 2013. WVDEP also reviews

annual reports submitted by permitted CAFOs. In FY2013, WVDEP reviewed one annual report that was submitted by the only permitted CAFO at the time.

West Virginia's WV/NPDES CAFO program requires two of the five priority BMPs. West Virginia's WV/NPDES CAFO program requires nutrient management planning and animal waste management systems. West Virginia's WV/NPDES CAFO program does not require conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

2.0 Introduction

The U.S. Environmental Protection Agency (EPA) conducted an assessment of the State of West Virginia's (State) animal agriculture regulations and programs related to water quality to determine whether they are consistent with Clean Water Act (CWA) requirements and are implemented effectively to achieve West Virginia's animal agriculture Watershed Implementation Plan (WIP) commitments to reduce nitrogen, phosphorus, and sediment under the Chesapeake Bay Total Maximum Daily Load (TMDL). The assessment process began in summer 2014 when EPA provided West Virginia with a detailed West Virginia Animal Agriculture Program Review questionnaire (questionnaire). The West Virginia Department of Environmental Protection (WVDEP) coordinated West Virginia's completion of the questionnaire with the West Virginia Department of Agriculture (WVDA). WVDEP also supported the assessment process by providing EPA with WVDEP files for 30 animal agriculture operations. West Virginia provided responses to EPA's questionnaire in October 2014. EPA provided the draft assessment report to West Virginia on May 1, 2015. West Virginia provided comments to EPA on June 3-4, 2015. EPA completed the interim final report on June 26, 2015. EPA finalized the report on August 24, 2015.

The report is organized into the following sections: Section 3.0 (West Virginia Animal Agriculture Regulatory Overview), Section 4.0 (State Agencies Involved with Animal Agriculture Programs), Section 5.0 (West Virginia and the Chesapeake Bay TMDL), and Section 6.0 (West Virginia's Animal Agriculture WIP BMPs) provide background information. Section 7.0 (Nutrient Management Program) and Section 8.0 (WV/NPDES Permit Program) discuss and evaluate implementation of West Virginia's programs applicable to animal agriculture operations. Each section includes a summary of program requirements and responsible agencies, and includes subsections addressing the following: the universe of animal agriculture operations subject to each program; program staff and financial resources; data systems in place to track program activities; compliance and enforcement; and the role of the program in furthering the State's progress toward meeting the 2025 WIP implementation goals. Each section includes observations based on the staff discussions, file reviews, and West Virginia's questionnaire responses.

2.1 Purpose of Effort

EPA conducts periodic reviews of state NPDES programs as part of its oversight responsibilities under the CWA. EPA discusses program goals and objectives with authorized states, such as West Virginia, that are authorized to implement CWA programs (e.g. NPDES permit programs) as part of annual CWA Section 106 grant negotiations.¹ Previously, EPA's program reviews have not focused exclusively on animal agriculture regulations and programs. EPA decided to conduct assessments of animal agriculture programs related to water quality in the six Chesapeake Bay jurisdictions² as part of EPA's oversight responsibilities under the NPDES program and the Chesapeake Bay TMDL. These reviews will also be used to fulfill EPA's commitment under the settlement agreement with the Chesapeake Bay Foundation (CBF) ([Fowler et al. v. EPA](#)). As such, the West Virginia review is one of six animal agriculture state program reviews that EPA will be completing by 2015.

¹ http://water.epa.gov/grants_funding/cwf/pollutioncontrol.cfm

² Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia

The intent of the assessment is to identify successes and challenges within the State's animal agriculture programs related to water quality, evaluate the programs that are available to support West Virginia's pollutant load reduction goals under the Chesapeake Bay TMDL, and compare the West Virginia/National Pollutant Discharge Elimination System (WV/NPDES) program with federal concentrated animal feeding operations (CAFO) requirements. The goal of this assessment is to determine 1) how well West Virginia's programs align with West Virginia's Chesapeake Bay TMDL WIP commitments and 2) how effectively West Virginia's programs are being implemented.

2.2 Program Review Approach

In June 2014, EPA sent a questionnaire to West Virginia requesting background information on two West Virginia programs applicable to animal agriculture as well as West Virginia's WIP:

1. Nutrient Management Certification Program
2. WV/NPDES CAFO Program
3. WIP BMP Implementation

The intent of the questionnaire was to determine how well these programs were funded, staffed, and implemented, as well as how well these programs worked together to collectively meet the requirements under the CWA and West Virginia's commitments for reducing animal agriculture nutrient and sediment pollution to meet the Chesapeake Bay TMDL. For each of these programs, EPA requested information on the number of full-time equivalents (FTEs) and FY2013 budget (July 1, 2012 through June 30, 2013) supporting the program, the number of animal agriculture operations involved/enrolled in the program, compliance and enforcement activities, communication among agencies involved in each program, communication with farmers, data management, policies and training programs, and program strengths and challenges. West Virginia provided its completed response to the questionnaire in October 2014.

EPA also conducted file reviews and had conversations with agency staff. EPA focused its file reviews on AFOs and CAFOs in West Virginia's portion of the Chesapeake Bay watershed. For the file reviews, EPA reviewed WVDEP files for West Virginia's two WV/NPDES-permitted CAFOs, as well as WVDEP files for unpermitted AFOs where WVDEP conducted permit determinations to identify which AFOs need WV/NPDES CAFO permits. Prior to the file reviews, EPA provided WVDEP with a list of animal agriculture operation files to be reviewed by EPA. The facilities for which WVDEP files were requested were selected to determine WVDEP's efforts to improve implementation of the WV/NPDES CAFO program. Below is a brief summary of the number and animal operation type of the 30 files reviewed.

- 29 poultry operations
- 1 non-poultry operation

Each facility file included information such as: inspection reports, compliance and enforcement communications, nutrient management plans (NMPs), correspondence, permits, WV/NPDES CAFO permit annual reports, and other facility-specific information maintained by WVDEP.

EPA performed a detailed review of each file. EPA logged the type and date of each document in each operation's file and recorded observations related to program implementation, including potentially missing documents (e.g., correspondence about an inspection without a corresponding inspection

report in the file), NMP issues, typical inspection findings, enforcement actions, and challenges with WV/NPDES permit issuance. The observations help to identify opportunities for West Virginia to strengthen implementation of the State's animal agriculture programs related to water quality and work towards improved water quality within West Virginia and the Chesapeake Bay watershed.

EPA used information from the WVDEP file reviews, State questionnaire responses, and agency and entity websites to develop and substantiate observations about West Virginia's animal agriculture programs related to water quality. EPA reviewed all of the material provided but generally limits the content of this report to information necessary to support the observations. For this report, the files reviewed are considered representative.

3.0 West Virginia Animal Agriculture Regulatory Program Overview

According to the 2012 United States Department of Agriculture, National Agricultural Statistics Service Census of Agriculture (Ag Census), West Virginia had 21,489 farms in 2012, down slightly from 23,618 farms in 2007 (USDA, 2014). According to the 2012 USDA Ag Census, West Virginia had 12,752 livestock and poultry operations statewide (animal agriculture operations) in 2012, down from the 14,261 livestock and poultry operations statewide in 2007 (USDA, 2014). According to the 2012 USDA Ag Census, West Virginia had approximately 2,637 livestock and poultry operations in the Chesapeake Bay watershed in 2012. Below in Table 1 are animal inventories for West Virginia from the Ag Census.

Table 1. 2007 and 2012 USDA Ag Census Animal Inventories

Census	Beef	Dairy	Poultry				Swine
			Broilers	Turkeys	Pullets	Layers	
2007	203,711	11,744	12,813,593	1,641,120	653,630	1,220,280	8,948
2012	191,398	10,095	14,781,332	1,817,308	708,412	1,113,238	5,873
Change	-12,313 (-6.0%)	-1,649 (-14.0%)	+1,967,739 (+15.4%)	+176,188 (+10.7%)	+54,782 (+8.4%)	-106,997 (-8.8%)	-3,075 (-34.4%)
% in Chesapeake Bay watershed	~25-32%	~34-42%	~99%	~75-79%	~75%	~95%	~33-36%

Another measure of the livestock industry besides inventory is the number of animals sold. Table 2 shows the numbers of animals sold in West Virginia from the Ag Census.

Table 2. 2007 and 2012 USDA Ag Census Animal Numbers Sold

Census	Beef	Dairy	Poultry				Swine
			Broilers	Turkeys	Pullets	Layers	
2007	187,092	8,352	88,778,413	3,690,527	1,429,440	1,325,661	19,588
2012	194,147	12,974	93,749,081	4,889,115	1,490,895	1,096,451	8,712
Change	+7,055 (+3.8%)	+4,622 (+55.3%)	+4,970,668 (+5.6%)	+1,198,588 (+32.5%)	+61,455 (+4.3%)	-229,210 (-17.3%)	-10,876 (-55.5%)
% in Chesapeake Bay watershed	Unknown	Unknown	~82%	~52%	~90%	~98-99%	~37-41%

Table 3 presents the primary statutes and regulations under which West Virginia administers West Virginia's animal agriculture programs related to water quality.

Table 3. West Virginia Animal Agriculture Programs, Statutes, Laws, and Regulations Related to Water Quality

West Virginia Animal Agriculture Program	Law/Statute and Regulations
Nutrient Management Certification Program	West Virginia Code of State Rules (CSR) §61-6D
WV/NPDES CAFO Program	West Virginia Code of State Rules (CSR) §47-10-13.1

4.0 State Agencies Involved with Animal Agriculture Programs

WVDEP and West Virginia Department of Agriculture (WVDA) are the primary agencies with regulatory responsibilities for West Virginia’s animal agriculture programs related to water quality. The West Virginia Conservation Agency (WVCA) and the fourteen Conservation Districts also assist with the implementation of various programs and providing technical and financial support to farmers. The scope of this assessment report does not directly address the roles played by the West Virginia University Extension Service, EPA, USDA, the Natural Resources Conservation Service (NRCS), and other non-State agencies.

4.1 Agency Funding

Table 4 summarizes the resources allocated (budget and FTE), number of operations, and the target type of facility for each animal agriculture program related to water quality.

Table 4. Resources Allocated, Number of Operations and Targeted Facility Type

Program (Lead Agency)	Budget	FTEs	Operations	Target Facilities
Nutrient Management Program (WVDA and WVCA)	\$314,004 (WVDA) \$62,400 (WVCA) (FY2014)	4.75 (WVDA) 1 (WVCA) (FY2014)	603 statewide (approximately 573 animal agriculture operations and approximately 30 crop-only operations); 375 in the Chesapeake Bay watershed (unknown how many are required and how many are voluntary)	Required for WV/NPDES-permitted CAFOs and unpermitted Large CAFOs; voluntary for all other farms
WV/NPDES CAFO Program (WVDEP)	\$100,000 (FY2013)	1.33	2	CAFOs that discharge or propose to discharge to waters of State

There are many different grants and other funding mechanisms that West Virginia uses to support animal agriculture operations, some of which are identified in Table 5. For example, West Virginia Conservation Districts, with technical assistance from WVCA, administer the West Virginia Agricultural Enhancement Program (AgEP). AgEP’s mission is “to assist the agriculture cooperators of West Virginia Conservation Districts with the voluntary implementation of best management practices (BMPs) on agricultural lands in order to conserve and improve land and water quality” (WVCA, 2014). AgEP offers technical and financial assistance as an incentive to implement suggested BMPs, such as nutrient management, stream fencing, and livestock watering systems (WVCA, 2014). Additional funding and technical resources are available through the USDA Farm Bill programs, including the Environmental Quality Incentives Program (EQIP), the Conservation Reserve Program (CRP) and the Conservation Stewardship Program (CSP). A comprehensive accounting of the allocation of cost-share funds is available in the State’s 2013 Nonpoint Source Program Annual Report to EPA.³

³ http://www.epa.gov/reg3wapd/pdf/pdf_nps/nps_annualreports/2013/WV2013AnnualReport.pdf

Table 5. State and Federal Grants and Other Funding Mechanisms to Support Animal Agriculture Operations

Program	Resp. Agency	Description	Program Capacity (FY2015)		Disbursements (FY2014)	
			Per farm (\$)	Total (\$)	Farms (#)	Total (\$)
Chesapeake Bay Implementation Grants (CBIG)	WVDEP, WVDA, WVCA	Support implementation of WIP implementation, including funding BMPs such as NMPs and riparian buffers	Based on BMP implemented	\$2,500,000 (50% from EPA, 50% state match)	117	\$1,550,139
Chesapeake Bay Regulatory and Accountability Program (CBRAP)	WVDEP, WVDA	Support Chesapeake Bay TMDL and WIP implementation through enforcement and compliance assistance staff		\$896,415 (\$672,311 from EPA, \$224,104 state match)		\$657,311
CWA Section 319 Funds	WVDEP, WVCA	Funding nonpoint source activities/ BMPs, including agriculture	Based on BMP implemented	\$1,637,009	7	\$1,750,122
West Virginia Agricultural Enhancement Program (AgEP) ⁴	WVCA	Technical and financial assistance for voluntary implementation of BMPs.	Based on BMP implemented	\$880,000	1,204 paid applications, including 252 (21%) in the Chesapeake Bay watershed	\$1,459,015
Agricultural Water Quality Loan Program (AgWQLP) ⁵	WVDEP	Provide low interest loans through local banking institutions for agricultural and conservation improvements	Based on BMP implemented	\$150,000	4 loans	\$158,065
West Virginia Conservation Reserve Enhancement Program (CREP)	WVCA	Pay rental payments to farmers who voluntarily remove environmentally sensitive land from production and introduce conservation practices	Based on BMP implemented	Not applicable; program has capacity to fund any and all eligible practices	5,880 acres, including 3,442 acres (59%) in the Chesapeake Bay watershed	\$214,869 in state match

These financial assistance programs are important to funding agricultural BMP installation in West Virginia. According to WVDA, both EQIP and AgEP offer higher ranking (and therefore higher likelihood to receive funding) for first time applicants and for those producers who are going above and beyond expected baseline implementation rates. According to WVCA, additional high rate cost-share programs are offered through the Nonpoint Source Program using CWA Section 319 funds to encourage voluntary implementation of agricultural BMPs. WVCA also provides cost-share funding for stream restoration for agricultural producers at a high rate as an incentive for farmers to participate in the cost-share program and to address all other resource concerns on their property.

Increased implementation of agricultural BMPs is necessary to achieve the nutrient and sediment reductions in the WIP. According to West Virginia's Phase II WIP (WVWDT, 2014):

West Virginia is counting on the continued success of past and current implementation rates of BMPs. The state will review its progress at the end of each two year period and make changes as necessary. This adaptive management approach will allow the state to redirect funds and programs to make them the most effective.

If West Virginia's progress is not keeping up with WIP goals, additional Federal and State funds will be requested. These funds will be used to increase cost-share rates for agricultural BMPs such as cover crops and fencing and increase staffing levels and educational and outreach efforts.

Following are brief descriptions of the roles and responsibilities of WVDEP, WVDA, and WVCA with respect to animal agriculture in West Virginia.

4.2 West Virginia Department of Environmental Protection

The WVDEP Division of Water and Waste Management's mission is "to preserve, protect, and enhance the state's watersheds for the benefit and safety of all its citizens through implementation of programs controlling hazardous waste, solid waste and surface & groundwater pollution, from any source."⁶ The WVDEP Division of Water and Waste Management administers many programs to achieve that mission, including permitting programs for hazardous waste, solid waste, and NPDES-regulated discharges from sources such as wastewater treatment plants, industrial facilities, and construction sites.

Specific to animal agriculture, WVDEP is responsible for oversight and implementation of the WV/NPDES CAFO program, including issuing WV/NPDES CAFO permits and enforcing issued WV/NPDES CAFO permits. WVDEP signed a memorandum of understanding (MOU) with WVDA in 2011 to define the agencies' roles in addressing environmental issues and providing technical assistance to AFOs, including their roles in processing WV/NPDES CAFO Permit applications (WVDEP and WVDA, 2011). According to the MOU, WVDEP will take the lead on any complaints about AFOs and water quality issues, take

⁴ WVCA, 2014

⁵

<http://www.dep.wv.gov/WWE/Programs/SRF/Documents/Other%20docs%20and%20pubs/FinalFY2015IUPPackage.pdf>

⁶ <http://www.dep.wv.gov/wwe/Pages/default.aspx>

enforcement actions where necessary, request support from WVDA where needed, and handle all parts of the WV/NPDES CAFO permit application except the NMP, which will be handled by WVDA.

4.3 West Virginia Department of Agriculture

WVDA's mission is "to protect plant, animal and human health and the state's food supply through a variety of scientific and regulatory programs; to provide vision, strategic planning and emergency response for agricultural and other civil emergencies; to promote food safety and protect consumers through educational and regulatory programs; and to foster economic growth by promoting West Virginia agriculture and agribusinesses throughout the state and abroad."⁷

Specific to animal agriculture, WVDA is responsible for oversight and implementation of the Nutrient Management Program, including providing all nutrient management services (including soil sampling, soil analysis, and Nutrient Management Plan writing) to farmers free of charge and issuing nutrient management certificates and tracking continuing education credits for certified nutrient management planners. WVDA also reviews and approves all NMPs for WV/NPDES-permitted CAFOs. WVDA signed a memorandum of understanding (MOU) with WVDEP in 2011 to define the agencies' roles in addressing environmental issues at and providing technical assistance to AFOs, including their roles in processing WV/NPDES CAFO Permit applications (WVDEP and WVDA, 2011). According to the MOU, WVDA will refer any complaints about AFOs and water quality issues to WVDEP for investigation, provide technical assistance to farmers to address water quality issues, conduct follow-up visits to support WVDEP's efforts to address water quality issues, and review and certify WV/NPDES CAFO permit NMPs and provide feedback to WVDEP.

4.4 West Virginia Conservation Agency

WVCA's mission is "to provide for and promote the protection and conservation of West Virginia's soil, land, water and related resources for the health, safety and general welfare of the state's citizens."⁸ West Virginia's State Conservation Committee (SCC) was created to help conserve the soil and soil resources in West Virginia, provide assistance to the West Virginia Conservation Districts. The SCC employs an administrative officer and support staff, which are known collectively as the WVCA ([WV Code §19-21A-4.e](#)). The WVCA coordinates state-wide conservation efforts.

Specific to animal agriculture, WVCA assists and works with West Virginia's 14 Conservation Districts to provide administrative, technical and financial assistance to citizens of West Virginia (WVWIT, 2010). The WVCA provides technical support to farmers, while the Conservation Districts provide financial assistance to farmers. The WVCA is responsible for providing technical assistance for several cost-share and technical support programs, such as the agriculture components of West Virginia's Section 319 Nonpoint Source Program, the West Virginia Agricultural Enhancement Program (AgEP), and the Agricultural Water Quality Loan Program (WVWIT, 2010). The WVCA also prepares and submits Section 319 Nonpoint Source Program watershed-based plans.

⁷ <http://www.wvagriculture.org/>

⁸ <http://www.wvca.us/Mission.cfm>

4.5 West Virginia Conservation Districts

The West Virginia Conservation Districts' mission is "to provide for and promote the protection and conservation of West Virginia's soil, land, water and related resources for the health, safety and general welfare of the state's citizens."⁹ The West Virginia Conservation Districts are directed by the WVCA.

Specific to animal agriculture, the Conservation Districts provide financial assistance to farmers, while the WVCA provides technical support to farmers. The Conservation Districts provide cost-share funding through a state cost-share match on Conservation Reserve Enhancement Program (CREP) (WVWDT, 2010). The Conservation Districts also administers funding for the West Virginia Agricultural Enhancement Program (AgEP), which offers technical and financial assistance for BMP implementation. The Conservation Districts develop local priorities for cost-share funding, including AgEP funding. According to West Virginia, the Conservation Districts also have the ability to exercise adaptive management moving forward to target priority practices and producers.

⁹ <http://www.wvca.us/Mission.cfm>

5.0 West Virginia and the Chesapeake Bay TMDL

On December 29, 2010, the U.S. Environmental Protection Agency established the Chesapeake Bay Total Maximum Daily Load (TMDL), a historic and comprehensive “pollution diet” to restore clean water in the Chesapeake Bay and the region’s streams, creeks and rivers. The Chesapeake Bay TMDL is the largest and most complex TMDL ever developed, involving six states and the District of Columbia and the impacts of pollution sources throughout a 64,000-square-mile watershed. The Chesapeake Bay TMDL – actually a combination of 92 smaller TMDLs for individual Chesapeake Bay tidal segments – includes individual and aggregate allocations for nitrogen, phosphorus and sediment sufficient to achieve state clean water standards for dissolved oxygen, water clarity, underwater Chesapeake Bay grasses and chlorophyll-a, an indicator of algae levels. West Virginia contributes drainage to two of the 92 tidal segments within the Chesapeake Bay watershed (EPA, 2010).

The Chesapeake Bay TMDL is designed to ensure that all pollution control measures needed to fully restore the Chesapeake Bay and its tidal rivers are in place by 2025, with practices in place to achieve at least 60 percent of the reductions necessary to obtain water quality standards in the Chesapeake Bay by 2017. The TMDL is supported by rigorous accountability measures to ensure cleanup commitments are met, including short- and long-term benchmarks, a tracking and accountability system for jurisdiction activities, and federal contingency actions that can be employed if necessary to spur progress (EPA, 2010).

West Virginia and the other Chesapeake Bay jurisdictions¹⁰ developed Watershed Implementation Plans (WIPs) that detail each jurisdiction’s plan to meet the Chesapeake Bay TMDL allocations for nitrogen, phosphorus, and sediment. To date, WIPs have been developed in two phases. The Phase I WIPs, submitted in late 2010, proposed Chesapeake Bay TMDL pollutant allocations and laid out the plan for how each jurisdiction would meet its allocations. The EPA’s TMDL allocations were based almost entirely on the proposed allocations in the state’s Phase I WIPs. Phase II WIPs, finalized in March 2012, provided additional detail on implementation actions, including actions by local partners to support achievement of the TMDL allocations. Phase III WIPs, when submitted in 2018, will provide the opportunity for the jurisdictions to make mid-course adjustments to pollutant reduction strategies, provide additional detail on implementation strategies, and propose refinements to the TMDL allocations. Each WIP includes detailed plans for reducing nutrient and sediment loads from agricultural runoff, including runoff from animal feeding operations (AFOs) and CAFOs.

As of 2009, the Chesapeake Bay Program (a regional partnership that includes EPA and West Virginia) estimated that West Virginia was the source of 2% of the nitrogen, 5% of the phosphorus and 5% of the sediment load delivered to the tidal Chesapeake Bay waters (EPA, 2010). To meet its overall TMDL allocations, West Virginia has committed to achieving approximately 65% of its necessary nutrient and sediment reductions from the agricultural sector. Controlling the agricultural load is essential to achieving West Virginia’s portion of the Chesapeake Bay TMDL. Table 6 identifies the progress and target loads for the agricultural sector, including animal agriculture operations, by milestone period.

¹⁰ Delaware, Maryland, New York, Pennsylvania, Virginia, and the District of Columbia

Table 6. Agricultural Sector Target Loads by Milestone Period (pounds per year).

Ending Year	2009 Progress	2013 Progress	2014 Interim Progress	2015 Milestone	2017 60% Target	2025 TMDL	% Reduction (2009-2025)
Nitrogen	2,658,000	2,366,000	2,468,000	2,432,000	2,425,000	2,271,000	15%
Phosphorus	556,000	462,000	438,000	457,000	464,000	402,000	28%
Sediment	267,690,000	206,990,000	210,047,000	202,087,000	213,816,000	177,900,000	34%

West Virginia submitted its Chesapeake Bay TMDL Phase I WIP on November 29, 2010 (WVWDT, 2010) and Phase II WIP on March 30, 2012 (WVWDT, 2012). Specific to agriculture and therefore animal agriculture, agricultural pollutant reduction targets were set at levels achievable through significantly expanded implementation of BMPs such as: NMPs addressing the application of nutrients; animal waste management systems; and stream fencing on pastures that excludes livestock from streams. In particular, West Virginia plans to achieve these levels of BMP implementation through voluntary implementation by farmers and targeted funding of federal and state cost-share programs, such as offering free soil sampling, soil analysis, and NMP writing (WVWDT, 2012).

West Virginia anticipates that the strategies outlined in the Phase I WIP and the Phase II WIP, particularly continued targeted funding of voluntary BMPs, will contribute to meeting the TMDL. West Virginia plans to meet its animal agriculture nutrient and sediment reduction goals through voluntary programs.

West Virginia uses the following regulatory programs to facilitate pollutant load reductions through required implementation of specific BMPs or general classes of BMPs (i.e., animal waste management systems):

- WV/NPDES CAFO Program
- Nutrient Management Program

West Virginia committed to use the following voluntary programs to encourage voluntary BMP implementation and to help further reduce nutrient and sediment loads to the Chesapeake Bay:

- Providing all nutrient management services, including soil sampling, soil analysis, and Nutrient Management Plan writing to farmers free of charge.
- Providing financial assistance for voluntary BMP implementation through programs such as the West Virginia Agricultural Enhancement Program (AgEP) and the USDA Farm Bill programs.
- Providing low-interest loans through the Agriculture Water Quality Loan Program.

If West Virginia’s progress is not keeping up with WIP goals, West Virginia plans to request additional federal and State funds to increase cost-share rates for agricultural BMPs (WVWDT, 2012).

Along with the WIPs, each of the jurisdictions established two-year programmatic milestones to further outline the detailed steps to achieve 60 percent of necessary reductions by 2017 and full TMDL implementation by 2025 (see below for discussion of dates). The two-year milestones provide measureable interim implementation goals used to monitor progress toward full TMDL implementation.

The [Chesapeake Bay Program](#) (CBP), a regional partnership that includes EPA and West Virginia, leads and directs Chesapeake Bay restoration and protection activities, collects data from the Chesapeake Bay jurisdictions to track and model progress toward the two-year milestones and Chesapeake Bay-wide

TMDL implementation. The CBP collectively has adopted 2025 as the date by which 100% of the controls necessary to achieve the Chesapeake Bay TMDL allocations are expected to be in place. CBP has also adopted 2017 as an interim goal and the date by which practices should be in place to achieve 60% of the necessary reductions, as compared with the level of reduction achieved in 2009. Best management practice (BMP) data are compiled by each jurisdiction and forwarded to the CBP as an electronic “input deck.” Each input deck is entered into computer models maintained by the CBP to simulate nitrogen, phosphorus, and sediment loads from all sectors and sources and the units (e.g., acres) of each BMP for any area in the Chesapeake Bay watershed.¹¹ Model output is used to track progress toward each jurisdiction’s 2017 and 2025 WIP implementation goals (CBP, 2012).

Under the accountability framework adopted by the CBP and discussed in the TMDL, EPA has committed to evaluating the two-year milestone commitments and the progress in meeting these commitments. Based on EPA’s recent evaluation of the State’s 2012-2013 WIP milestones and input deck, West Virginia achieved its 2013 overall milestone targets for nitrogen, phosphorus, and sediment.¹²

The CBP collects data from the Chesapeake Bay jurisdictions, including West Virginia, on BMP implementation and land use. BMP data are compiled by each jurisdiction and forwarded to the CBP as an electronic “input deck.” Each input deck is entered into computer models maintained by the CBP to simulate nitrogen, phosphorus, and sediment loads from all sectors and sources and the acres of each BMP for any area in the Chesapeake Bay watershed. Model output is used to track progress toward each jurisdiction’s 2017 and 2025 WIP implementation goals (CBP, 2012).

In evaluating whether West Virginia’s animal agriculture programs are aligned with meeting the Chesapeake Bay TMDL, EPA focused its assessment on five EPA-selected “priority BMPs”: nutrient management; livestock waste management systems; conservation plans; stream fencing on pastures that excludes livestock from streams; and vegetated buffers on pastures. EPA chose to focus on these practices because they are related to animal agriculture and represent the BMPs that West Virginia identified in its WIPs (and associated input decks) and is relying on to achieve a significant portion of its animal agricultural nutrient and sediment reductions. West Virginia is relying on these five practices for reducing its nitrogen loads from all sectors by approximately 39.9%, reducing its phosphorus loads from all sectors by approximately 46.0%, and reducing its sediment loads from all sectors by approximately 47.3% (Table 7). West Virginia is relying on these five practices for reducing its agricultural nitrogen loads by approximately 61.0%, reducing its agricultural phosphorus loads by approximately 66.7%, and reducing its agricultural sediment loads by approximately 77.8% (Table 7). These practices are also the focus of many of West Virginia’s plans for ramping up animal agricultural programs (such as targeting funding for nutrient management planning, etc.). This assessment report evaluates how West Virginia’s regulatory and non-regulatory programs require or facilitate implementation of these five priority BMPs.

¹¹ The Chesapeake Assessment Scenario Tool (CAST) estimates load reductions for point and nonpoint sources including: agriculture, urban, waste water, forest, and septic loading to the land (edge-of-stream) and loads delivered to the Chesapeake Bay. CAST stores data associated with each BMP as well as the load for each sector and land use (<http://casttool.org/About.aspx>).

¹² http://www.epa.gov/reg3wapd/tmdl/2014Evaluations/factsheet_WVA.pdf

Table 7. West Virginia Total Load Reductions Resulting from Priority BMP

Priority BMP	Total Nitrogen	Total Phosphorus	Total Sediment	Agricultural Nitrogen	Agricultural Phosphorus	Agricultural Sediment
Nutrient Management	4.1%	0.5%	0.0%	6.3%	0.7%	0%
Animal Waste Management Systems	14.0%	22.3%	0.0%	21.4%	32.4%	0%
Conservation Plans	4.8%	3.4%	5.5%	7.3%	4.9%	9.0%
Stream Fencing on Pastures	16.3%	19.5%	41.1%	24.9%	28.3%	67.5%
Vegetated Buffers on Pastures	0.7%	0.3%	0.7%	1.1%	0.4%	1.3%
Total	39.9%	46.0%	47.3%	61.0%	66.7%	77.8%

6.0 West Virginia’s Animal Agriculture WIP BMPs

West Virginia is relying on voluntary programs to meet the 2017 and 2025 WIP goals pertaining to animal agriculture operations. Table 8 summarizes EPA’s findings on the priority BMPs incorporated into the WV/NPDES CAFO program and Nutrient Management Planning program along with an estimated number of animal agriculture operations covered under each program. The Nutrient Management Certification Program was not included in this analysis because it covers nutrient management planners, not animal agriculture operations.

Table 8. West Virginia Programs Contributing to Implementation of Priority BMPs.

	Nutrient Management Planning Program	WV/NPDES CAFO Program
Lead Agency	WVDA	WVDEP
Estimated Facility Universe	603 statewide (approximately 573 animal agriculture operations and approximately 30 crop-only operations); 375 in the Chesapeake Bay watershed (unknown how many are required and how many are voluntary)	2 statewide; 2 in the Chesapeake Bay watershed
Nutrient Management	Required for WV/NPDES-permitted CAFOs and unpermitted Large CAFOs; Voluntary for all other farms	Required
Animal Waste Management Systems		Required
Conservation Plans		
Stream Fencing on Pastures		
Vegetated Buffers on Pastures		

NMPs are required for the two WV/NPDES permitted CAFOs, as well as any CAFOs that may be covered by WV/NPDES permits in the future. Other farmers may voluntarily implement NMPs.

Animal waste management systems are required for the two WV/NPDES permitted CAFOs and will be required at any CAFO covered by a WV/NPDES permits in the future. Other farmers may voluntarily implement animal waste management systems.

Conservation plans, stream fencing on pastures, and vegetated buffers on pastures are not required for the two WV/NPDES permitted CAFOs. Farmers may voluntarily implement these practices.

Table 9 summarizes West Virginia’s progress toward meeting the 2025 implementation goals, as reported by West Virginia to the CBP, for the five priority BMPs selected by EPA as specifically relevant to animal agriculture programs related to water quality. Note that the data are not necessarily limited to animal agriculture operations.

Table 9. West Virginia’s Progress Toward 2025 Priority BMP Implementation Goals

WIP Priority Practice	Units	2009 Progress (% of 2025 Goal)		2014 Progress (% of 2025 Goal)		2025 Goal
Nutrient Management	acres	130,250	145%	30,396	34%	90,000
Animal Waste Management Systems	AU	28,268	39%	48,113	66%	73,122
Conservation Plans	acres	359,463	128%	379,480	135%	280,941
Stream Fencing on Pastures	acres	949	6%	10,783	68%	15,754
Vegetated Buffers on Pastures	acres	0	0%	4,022	252%	1,599

Increased implementation of agricultural BMPs is necessary to achieve the nutrient and sediment reductions in the WIP. West Virginia is relying on increases in two BMPs, nutrient management and stream fencing on pastures, to reduce 30.3% of its total nitrogen loads, 41.9% of its total phosphorus loads, and 41.1% of its total sediment loads. Between its Phase I WIP and Phase II WIP, West Virginia increased its WIP goals for nutrient management to 90,000 acres and its WIP goal for stream fencing on pastures to 5,200 acres (WVWDT, 2012). In order to meet these goals, West Virginia is relying on farmers to voluntarily implement these BMPs at animal agriculture operations.

To support increased NMP implementation, WVDA has increased staffing to support NMP development and worked to create a shared, online database to accurately track, report, and verify all agricultural BMPs including NMPs (WVWDT, 2012). Starting on July 1, 2015, all acreage under NMPs will be entered into West Virginia's new agricultural database. NRCS is supporting the development of an estimated 30 NMPs per year (WVWDT, 2012). The West Virginia Legislature also passed a rule during the 2012 Session requiring West Virginia Certified Nutrient Management Planners to report all acres planned on an annual basis (WVWDT, 2012). NMPs are also an important component in order to participate in cost-share programs with USDA and WVCA. NMPs are required for any Animal Waste Management System practice with USDA cost-share, and NMPs give producers a higher ranking for obtaining AgEP funding from WVCA. Higher ranking for cost-share funding is given to producers who participate in the AgEP program and maintain and follow NMPs, and WVCA reviews the producers' NMP records for record keeping compliance during the ranking process. West Virginia also requires NMPs for farmers who participate in the poultry litter transfer program and receive cost-share funding to export nutrients out of the Chesapeake Bay watershed. Finally, WVCA is also currently targeting four key farms within the James River portion of the Chesapeake Bay watershed to install 323 acres of nutrient management planning and 88.47 acres of riparian buffers. These efforts should help increase NMP implementation rates in West Virginia.

To support increased stream fencing implementation, the United States Fish and Wildlife Service (USFWS) and Trout Unlimited are employing two fencing crews and purchasing fencing equipment to support stream fencing efforts (WVWDT, 2012). To date, USFWS and Trout Unlimited "have installed more than one million feet of agricultural fencing throughout West Virginia to help over 200 farmers keep livestock out of streams."¹³ Stream fencing is one of the focuses of the West Virginia Agricultural Enhancement Program (AgEP) throughout West Virginia, as well as the nonpoint source reduction efforts in the James River watershed funded by Section 319 funds and WVCA grant funding (WVWDT, 2012). Stream fencing is also encouraged through the Conservation Reserve Enhancement Program (CREP), and WVDA stated that "CREP is the highest cost-share program that West Virginia offers which allows producers to develop alternative watering, riparian buffers, exclusion fencing and other water quality related BMPs at a 90% cost-share rate. This is often accomplished utilizing a partnership approach involving US Partners for Wildlife (USFWS & Trout Unlimited) which allows a "one stop service" for producers to be able to get fence, buffers and alternative water installed by one Technical Service Provider (TSP). This is very attractive to producers as it simplifies the planning and installation process." The West Virginia Riparian Forest Buffer Initiative State Task Force has developed

¹³ <http://www.tu.org/tu-projects/west-virginia-fencing-project>

recommendations for how to boost forest buffer enrollment if additional funding is secured. West Virginia has exceeded its 2025 goal for vegetated buffers on pasture. According to West Virginia, CREP and AgEP will be important tools in continuing to meet progress goals, and West Virginia hopes that additional CREP dollars will be forthcoming through the Riparian Forest Buffer Initiative.

According to West Virginia, the Conservation Districts also have the authority to apply adaptive management to the AgEP program as appropriate moving forward in the event milestones are not being met. Cover crops, stream exclusion fencing with buffer implementation, alternative watering, and nutrient management planning are all key components of the AgEP for the two Conservation Districts in the Chesapeake Bay watershed. This program is staffed with three Conservation Specialists in the Potomac Valley Conservation District and three Conservation Specialist in the Eastern Panhandle Conservation District. Both Conservation Districts also employ their own Outreach Specialists who focus on promoting the program. According to West Virginia, funding for the AgEP program is limited and provided by the WV State Legislature.

Due to the fact that only two animal agriculture operations are covered under the WV/NPDES CAFO program, West Virginia's only regulatory program for animal agriculture, West Virginia is relying almost completely on voluntary BMP implementation for the remaining approximately 2,637 farms with livestock and poultry in the Chesapeake Bay watershed portion of West Virginia. West Virginia "is counting on the continued success of past and current implementation rates of BMPs" (WVWDT, 2012). In the event that West Virginia is unable to keep up with or make progress toward meeting its agricultural implementation goals, West Virginia has indicated in its Phase I and Phase II WIPs that it will request additional Federal and State funds "to increase cost-share rates for agricultural BMPs such as cover crop and fencing and increase staffing levels and educational and outreach efforts," or request a modification of existing grants, such as the Chesapeake Bay Regulatory and Accountability Program (CBRAP) grant, to allow funds to be used for "on the ground" implementation of practices instead of for regulatory controls and compliance rates (WVWDT, 2010; WVWDT, 2012).

Tracking priority BMP implementation is an additional challenge for West Virginia. West Virginia has not yet finished development of a protocol and database to track and report non-cost-shared BMPs (WVWDT, 2012). Tracking BMP implementation is critical for measuring success within the Chesapeake Bay TMDL WIP, and West Virginia has taking some steps to improve tracking and reporting of BMP implementation. The West Virginia Legislature also passed a rule during the 2012 Session requiring West Virginia Certified Nutrient Management Planners to report all acres planned on an annual basis in order to improve tracking of nutrient management planning and eliminate double-counting of acreage (WVWDT, 2012). WVDA has hired a Tracking and Reporting Specialist to focus on the tracking and reporting of BMPs (WVWDT, 2012). West Virginia is also developing an enhanced tracking and reporting system for agricultural non-cost-shared BMPs that should be completed in 2015.¹⁴

In summary, West Virginia has only one regulatory program for animal agriculture operations to address West Virginia's Chesapeake Bay WIP commitments: the WV/NPDES CAFO Program. Only two out of

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http://www.wvca.us/bay/files/bay_documents/264_WV%202014%202015%20%20year%20milestones%20report%20thru%2012_31_14.pdf

approximately 2,637 farms with livestock and poultry in the Chesapeake Bay watershed portion of West Virginia are covered under the WV/NPDES CAFO program. This leaves West Virginia heavily dependent on voluntary implementation of priority BMPs at West Virginia animal agriculture operations in order to achieve the 2017 and 2015 WIP BMP and pollutant load reduction goals. West Virginia agencies provide financial and technical assistance through several different cost-share programs in order to encourage farmers to voluntarily implement BMPs. While there is still some uncertainty about the detailed strategies West Virginia has for these voluntary programs to stay on pace with meeting BMP implementation targets outlined in its WIP, West Virginia is currently meeting its modeled nutrient and sediment goals and has stated that West Virginia will continue to adapt programs according to needs to achieve the 2025 WIP BMP and pollutant load reduction goals.

6.1 West Virginia's Animal Agriculture WIP BMPs – Observations

- West Virginia has only one regulatory program related to animal agriculture, the WV/NPDES CAFO Program, which requires only two of the five priority BMPs.
- Only two out of the approximately 2,637 farms with livestock and poultry in the Chesapeake Bay watershed portion of West Virginia are covered under the WV/NPDES CAFO program, with no regulatory requirements for the remaining farms.
- West Virginia is relying heavily on programs with voluntary participation, such as BMP cost-share programs, in order increase BMP implementation to meet West Virginia's WIP goals.
- While there is still some uncertainty about the detailed strategies West Virginia has for these voluntary programs to stay on pace with meeting BMP implementation targets outlined in its WIP, West Virginia is currently meeting its modeled nutrient and sediment goals and has stated that West Virginia will continue to adapt programs according to needs to achieve the 2025 WIP BMP and pollutant load reduction goals.
- West Virginia is relying on increases in two BMPs, nutrient management and stream fencing on pastures, to reduce 30.3% of its total nitrogen loads, 41.9% of its total phosphorus loads, and 41.1% of its total sediment loads. However, West Virginia did not provide sufficient information on its voluntary programs to effectively evaluate if the programs will meet these goals.

7.0 Nutrient Management Program

The goal of the West Virginia Nutrient Management Plan is “to help farmers efficiently manage manure, biosolids and chemical fertilizers to minimize water contamination and maximize financial returns.”¹⁵

WVDA administers the nutrient management program in West Virginia. The West Virginia Nutrient Management Program includes both a nutrient management planning program and a nutrient management certification program.

Nutrient Management Planning Program

All facilities that are covered under a WV/NPDES CAFO permit are required to develop and implement an NMP. WVDEP also requires all unpermitted Large CAFOs to develop and implement an NMP in order for the CAFO to qualify for the agricultural storm water exemption. All other NMPs in West Virginia are voluntary.

In order to encourage voluntary implementation of NMPs, WVDA offers free soil sample collection and analysis, and nutrient management planning to all West Virginia agricultural producers (WVWDT, 2012). WVDA also provides manure and litter analysis for facilities participating in USDA’s PL534 land treatment program, which can be used to develop an NMP by a certified nutrient management planner.¹⁶ WVDA also contacts producers before their NMP expires to begin the process of renewing the NMP.

All NMPs in West Virginia must be developed by a certified nutrient management planner, regardless of whether the NMP is required or voluntary. Voluntary NMPs must meet the same standards as a WV/NPDES CAFO NMP except for the 35-foot application buffers and 100-foot application setbacks; however, even though they are not required, these application buffers and setbacks are recommended for the majority of voluntary NMPs.

According to West Virginia, the West Virginia agricultural agencies spend significant time conducting outreach and educational efforts relating directly to Nutrient Management Planning. This outreach may be in the form of articles, brochures and handouts, as well as one-on-one communication with farmers at various agricultural events such as county fairs, which West Virginia has found to be most effective. West Virginia stated that “the key to West Virginia’s voluntary program is trust and relationships that have been built over a very long period of time. Every effort will be made to continue in this manner to ensure success far into the future.”

Nutrient Management Certification Program

All West Virginia NMPs must be prepared by a certified nutrient management planner, since West Virginia’s regulations¹⁷ define an NMP as “a plan prepared by a certified nutrient management planner to manage the amount, form, placement, timing, and application of commercial fertilizers, animal manures, bio-solids, or other plant nutrients in order to prevent pollution and to maintain soil productivity” (State of West Virginia, 2014).

¹⁵ http://www.wvagriculture.org/programs/Nutrient_Management/Introduction.htm

¹⁶ <http://www.wvagriculture.org/images/Enviro/Nutrient.htm>

¹⁷ [West Virginia Code of State Rules \(CSR\) §61-6D](#)

West Virginia's Nutrient Management Certification regulations¹⁸ explain the requirements for being trained and certified to write NMPs. To become a certified nutrient management planner, an individual must submit a completed application to WVDA.¹⁹ The applicant must submit credentials that show the applicant has 1) five years of nutrient management practical experience working with farmers and an unrelated degree or no degree; or 2) three years of practical experience and a two year associate's degree in an agricultural related field; or 3) one year of experience and a baccalaureate degree in an agricultural related field (Agriculture or Natural Resources). The applicant must also submit verification to WVDA from current or former employers who supervised the applicant's nutrient management activities. Finally, the applicant must pass a certification examination given by WVDA. If the applicant meets the above credential criteria and passes the certification examination, WVDA will issue a nutrient management certificate.

WVDA issues nutrient management certificates for a period of two years. In order to maintain their certificate, nutrient management certificate holders must submit an annual activity report to WVDA that includes, among other things, the number of new and revised NMPs completed and the number of acres in those NMPs.²⁰ In order to renew the nutrient management certificate at the end of the two-year period, nutrient management certificate holders must submit a renewal application²¹ and complete at least 12 hours of continuing education, workshops, or other WVDA-approved training during the two year certificate period. WVDA can revoke any nutrient management certificate if the certificate holder does not submit the annual report, does not submit the renewal application, does not meet the continuing education requirements, falsifies documents related to the nutrient management program, misrepresents their certification, or violates applicable federal or state laws and rules.

7.1 Facility Universe

In FY2015, 603 farms in West Virginia had active NMPs, including 375 farms in the Chesapeake Bay watershed with active NMPs. West Virginia stated that two of these farms are WV/NPDES-permitted CAFOs, and an unknown number of these farms may be unpermitted Large CAFOs. WVDA estimates that approximately 95% of NMPs (approximately 573 NMPs) are on animal agriculture operations, while only 5% of NMPs (approximately 30 NMPs) are on crop-only operations. NMPs cover approximately 61,298 acres in West Virginia's portion of the Chesapeake Bay watershed including approximately 242 acres (0.4%) at WV/NPDES-permitted CAFOs (State of West Virginia, 2014).

West Virginia has 72 certified nutrient management planners, including 19 (approximately 26%) in the Chesapeake Bay watershed (State of West Virginia, 2014). Four of these individuals are WVDA staff completely dedicated to writing and renewing NMPs. They are also supported by WVDA's CAFO Specialist, as well as by summer interns who do much of the initial legwork by pulling soil samples and preparing the necessary paperwork to expedite the NMP development process. Additionally, there are three Outreach Specialists (one at WVDA and two at WVCA) who promote NMP adoption.

¹⁸ [West Virginia Code of State Rules \(CSR\) §61-6D](#)

¹⁹ http://www.wvagriculture.org/programs/Nutrient_Management/Application.pdf

²⁰ http://www.wvagriculture.org/programs/Nutrient_Management/NMP7-WVNM-AnnualActivityReport.pdf

²¹ http://www.wvagriculture.org/programs/Nutrient_Management/Renewal.pdf

7.2 Resources Allocated

In FY2014, WVDA had a budget of approximately \$314,004 and approximately 4.75 FTEs dedicated to the Nutrient Management Program. In FY2014, WVCA had a total budget of approximately \$62,400 and approximately 1 FTE dedicated to the Nutrient Management program. In FY2013, WVDEP had a budget of \$100,000 and approximately 1.3 FTEs for the WV/NPDES CAFO program activities, which include nutrient management activities at WV/NPDES-permitted CAFOs.

7.3 Data Systems

WVDA currently tracks nutrient management data through the annual activity reports that are required of all nutrient management certificate holders. Starting on July 1, 2015, all acreage under NMPs will be entered into West Virginia's new agricultural database, which will simplify annual reporting to the Chesapeake Bay Program.

WVDA uses Microsoft Excel spreadsheets to track each nutrient management certificate holder, including their continuing education and annual acreage as reported in their annual activity report. WVDA uses the data in this system for Chesapeake Bay reporting, legislative reporting, and the WVDA annual report (State of West Virginia, 2014).

7.4 Compliance and Enforcement

Because NMPs are voluntary in West Virginia, WVDA does not conduct any compliance activities to determine NMP compliance at farms with voluntary NMPs (State of West Virginia, 2014). WVDEP evaluates NMP compliance at WV/NPDES-permitted CAFOs during WVDEP's compliance inspections, which occur once per five-year permit cycle. Neither of the two WV/NPDES-permitted CAFOs has been inspected yet during its five-year permit cycle, which covers from April 2013-April 2018 and March 2014-March 2019 respectively for the two CAFOs.

WVDEP does not conduct any compliance activities to determine NMP compliance at unpermitted Large CAFOs.

WVCA does review NMP records for compliance during the ranking process for cost-share funding.

WVDA is responsible for monitoring compliance with the Nutrient Management Certification Program. WVDA monitors the credentials and continuing education for certificate holders. WVDA can revoke any nutrient management certificate if the certificate holder does not submit the annual report, does not submit the renewal application, does not meet the continuing education requirements, falsifies documents related to the nutrient management program, misrepresents their certification, or violates applicable federal or state laws and rules.

7.5 WIP Implementation Goals

West Virginia's Nutrient Management Program does not require NMPs. West Virginia's Nutrient Management Program requires NMPs for all WV/NPDES-permitted CAFOs and for all unpermitted Large CAFOs (in order for the CAFO to qualify for the agricultural storm water exemption [47CSR10 §13.1.e]) through the WV/NPDES CAFO Program. All other NMPs in West Virginia are voluntary.

West Virginia’s Nutrient Management Program does not require animal waste management systems, conservation plans, stream fencing on pasture, or vegetated buffers on pastures.

Table 11. Priority BMPs, Nutrient Management Program.

Priority BMP	Required Component?	Notes
Nutrient Management	Required for WV/NPDES-permitted CAFOs and unpermitted Large CAFOs; voluntary for all other farms	
Animal Waste Management Systems		
Conservation Plans		
Stream Fencing on Pastures		
Vegetated Buffers on Pastures		

7.6 Nutrient Management Program – Observations

- In FY2014, WVDA had a total budget of approximately \$314,004 and approximately 4.75 FTEs dedicated to the Nutrient Management Program. In FY2014, WVCA had a total budget of approximately \$62,400 and approximately 1 FTE dedicated to the Nutrient Management program. In FY2013, WVDEP had a budget of \$100,000 and approximately 1.3 FTEs for the WV/NPDES CAFO program activities, which include nutrient management activities at WV/NPDES-permitted CAFOs.
- All facilities that are covered under a WV/NPDES CAFO permit are required to develop and implement an NMP. To date, only two facilities are covered under the WV/NPDES CAFO program and are required to develop and implement an NMP. All unpermitted Large CAFOs are also required to develop and implement an NMP in order for the CAFO to qualify for the agricultural storm water exemption. All other NMPs in West Virginia are voluntary.
- All West Virginia NMPs must be prepared by a certified nutrient management planner.
- West Virginia has 72 certified nutrient management planners, including 19 (approximately 26%) in the Chesapeake Bay watershed.
- In FY2015, 603 farms in West Virginia had active NMPs, including 375 farms in the Chesapeake Bay watershed with active NMPs. WVDA estimates that approximately 95% of NMPs (approximately 573 NMPs) are on animal agriculture operations, while only 5% of NMPs (approximately 30 NMPs) are on crop-only operations. NMPs cover approximately 61,298 acres in West Virginia’s portion of the Chesapeake Bay watershed including approximately 242 acres (0.4%) at NPDES-permitted CAFOs.
- WVDA does not conduct any compliance activities to determine NMP compliance at farms with voluntary NMPs, and WVDEP does not conduct any compliance activities to determine NMP compliance at unpermitted Large CAFOs. WVCA does review NMP records for compliance during the ranking process for cost-share funding.
- West Virginia’s Nutrient Management Program requires one of the five priority BMPs. West Virginia’s Nutrient Management Program requires NMPs for all WV/NPDES-permitted CAFOs and for all unpermitted Large CAFOs through the WV/NPDES CAFO Program. West Virginia’s

Nutrient Management Program does not require animal waste management systems, conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

8.0 WV/NPDES CAFO Program

The National Pollutant Discharge Elimination System (NPDES) program was established by Section 402 of the CWA to regulate the discharge of pollutants from point sources to waters of the United States. Section 502(14) of the CWA defined CAFOs as point sources that are regulated under the NPDES program, and 40 CFR § 122.23 identified which animal agriculture operations are defined as CAFOs that need to obtain NPDES permit coverage.

EPA can delegate the authority to administer the NPDES program to states, and each state that seeks to be authorized to administer the NPDES program must submit a request to the EPA. West Virginia has been authorized to administer the CWA's NPDES program (33 U.S.C. § 1251 *et seq.*) since 1982. In West Virginia, WVDEP is responsible for administering the NPDES program. West Virginia defines CAFOs at 47CSR10 §13.1.b using the same CAFO definitions that are identified in 40 CFR § 122.23. All CAFOs that discharge pollutants from the production area into waters of the United States are required to obtain WV/NPDES CAFO permits. West Virginia's duty to apply is more stringent than the federal CAFO regulations, requiring NPDES CAFO permits for CAFOs that "propose to discharge."

West Virginia's WV/NPDES CAFO regulations require all WV/NPDES CAFO permittees to implement an NMP.²² WV/NPDES CAFO NMPs must include the nine minimum elements required by the federal CAFO regulations at 40 CFR §122.42(e)(1). WV/NPDES CAFO NMPs must also be developed in accordance with West Virginia's state technical standards.²³ EPA periodically compares state technical standards against agency expectations. The 2012 EPA review determined that most aspects of West Virginia's Technical Standards are consistent with EPA's effluent limitation guidelines but that some portions are inconsistent.²⁴

WVDEP and WVDA signed a memorandum of understanding (MOU) in 2011 to define the agencies' roles in addressing environmental issues and providing technical assistance to AFOs, including their roles in processing WV/NPDES CAFO Permit applications (WVDEP and WVDA, 2011). WVDEP issues individual WV/NPDES CAFO permits rather than covering CAFOs under a general permit. To obtain a WV/NPDES CAFO individual permit, a CAFO owner or operator must submit a permit application package to WVDEP, including a copy of the site-specific NMP. WVDEP is responsible for ensuring that the WV/NPDES CAFO permit application is complete. WVDEP instructs permit applicants that

In order for an application to be considered administratively complete by the Division, the applicant shall provide the Division with the original permit application including three additional copies of the properly-signed permit application, one copy of the topographic map or portion thereof, the approved Nutrient Management Plan, a notarized Statement of Billing form (used for the public notification advertisement), and a fifty dollar (\$50.00) check or money order made payable to the "Department of Environmental Protection" for the CAFO permit application fee.²⁵

²² [West Virginia Code of State Rules \(CSR\) §47-10-13.1.h.1](#)

²³ <http://anr.ext.wvu.edu/r/download/119142>

²⁴ Additional information available upon request.

²⁵ <http://www.dep.wv.gov/WWE/permit/individual/Documents/2012CAFO%20Application%20Instructions.pdf>

After receiving a complete permit application, WVDEP will forward the NMP to WVDA for WVDA's review and certification per the MOU between WVDEP and WVDA (WVDEP and WVDA, 2011). WVDA has 30 days to review the NMP submitted with the WV/NPDES CAFO permit application and notify WVDEP that the applicant's NMP is accepted or rejected (WVDEP and WVDA, 2011). NMP deficiencies identified during WVDA's review are communicated to the certified nutrient management planner working with the CAFO so that the applicant and certified nutrient management planner can develop an approvable NMP.

After WVDA accepts the applicant's NMP and WVDEP determines that the permit application is complete, WVDEP drafts the WV/NPDES CAFO individual permit for the facility. The draft permit is subject to a 30-day public comment period, during which time the public can provide comments or request a public hearing on the draft permit. WVDEP can also schedule a public hearing if there is a "significant degree of public interest on issues relevant to the draft permit."²⁶ After addressing any comments that are received, WVDEP issues the final WV/NPDES CAFO individual permit. The WV/NPDES CAFO individual permit process takes up to six months to complete.²⁷

Individual WV/NPDES CAFO permits are effective for five years from the date of issuance. WV/NPDES CAFO NMPs must be updated or revised every three years (State of West Virginia, 2014). WV/NPDES CAFO NMP updates must be submitted to WVDEP, and substantial changes to NMP terms must be made available for public review and comment.

Facilities covered under a WV/NPDES CAFO individual permit are required, among other things, to implement an NMP, maintain records of manure generation and utilization, and submit an annual report to WVDEP each year summarizing manure generation and utilization at the facility.²⁸

8.1 Facility Universe

To date, WVDEP has issued two WV/NPDES CAFO individual permits, both located in the Chesapeake Bay watershed. WVDEP also has received 20 additional WV/NPDES CAFO permit applications, including 18 from facilities in the Chesapeake Bay watershed (State of West Virginia, 2014). WVDEP has not issued any WV/NPDES permits since March 14, 2014. All CAFOs that discharge pollutants from the production area into waters of the United States are required to obtain WV/NPDES CAFO permits. There may be additional poultry operations in West Virginia that need WV/NPDES CAFO permits, and EPA will continue to work with WVDEP to ensure compliance at poultry operations in West Virginia.

8.2 Resources Allocated

In FY2013, WVDEP had a budget of \$100,000 and approximately 1.3 FTEs for the WV/NPDES CAFO program activities. WVDEP does not expect any changes in future FTEs committed to the WV/NPDES CAFO program (State of West Virginia, 2014).

²⁶ [West Virginia Code of State Rules \(CSR\) §47-10-12.3.a](#)

²⁷ <http://www.dep.wv.gov/wve/permit/individual/pages/default.aspx#CAFO>

²⁸ West Virginia Code of State Rules (CSR) §47-10-13.1.h

8.3 Data Systems

WVDEP uses Microsoft Excel spreadsheets and the Environmental Resource Information System (ERIS) to track and manage oversight of WV/NPDES CAFO permittees. WVDEP enters and tracks data such as facility information, inspection dates, and permit determinations. The data are being used for reporting permit determination and verification of program activity. ERIS will eventually be integrated with EPA's ICIS system (State of West Virginia, 2014).

8.4 Compliance and Enforcement

WVDEP is responsible for enforcement of issued WV/NPDES CAFO permits. WVDEP conducts compliance inspections at all WV/NPDES permitted CAFOs once per five-year permit cycle. In FY2013, WVDEP did not conduct any compliance inspections at either of the two WV/NPDES-permitted CAFOs (State of West Virginia, 2014). Neither of the two WV/NPDES-permitted CAFOs has been inspected yet during its five-year permit cycle, which covers from April 2013-April 2018 and March 2014-March 2019 respectively for the two CAFOs.

WVDEP has conducted permit determination inspections at unpermitted facilities to determine whether or not a facility needs to obtain a WV/NPDES CAFO permit. WVDEP verbally communicates any noncompliance issues to the operator at the time of the inspection. WVDEP also provides an inspection report to the operator within approximately one week of the inspection that documents any noncompliance issues observed during the inspection. If appropriate, WVDEP will include a notice of violation with the inspection report. Where noncompliance issues are identified during an inspection, WVDEP may re-inspect the facility or conduct a records review in order to ensure that noncompliance issues are resolved (State of West Virginia, 2014). All CAFOs that discharge pollutants from the production area into waters of the United States are required to obtain WV/NPDES CAFO permits. There may be additional poultry operations in West Virginia that need WV/NPDES CAFO permits, and EPA will continue to work with WVDEP to ensure compliance at poultry operations in West Virginia.

WVDEP has demonstrated its ability to enforce its WV/NPDES CAFO regulations through inspections and enforcement actions. In FY2012 and FY2013, WVDEP inspected a total of 92 poultry facilities to make permit determinations of which facilities needed WV/NPDES CAFO permits. WVDEP found that 38 of the 92 facilities were discharging without WV/NPDES CAFO permits and issued NOV's to all 38 facilities requiring the facility owner or operator to submit a completed WV/NPDES CAFO permit application to WVDEP. In response, 21 of the 38 facilities took corrective actions to eliminate the discharge and were no longer required to obtain a WV/NPDES CAFO permit. The remaining 17 facilities were required to submit WV/NPDES CAFO permit applications. WVDEP also received six additional WV/NPDES CAFO permit applications from facilities voluntarily seeking WV/NPDES permit coverage.

Of the 30 facility files reviewed by EPA, two facilities voluntarily sought WV/NPDES permit coverage. Of the remaining 28 facilities, WVDEP found that five were not discharging and did not require WV/NPDES permits. For the remaining 23 facilities that were discharging, all 23 facilities were required to submit WV/NPDES permit applications in response to 21 NOV's from WVDEP, one Consent Order from WVDEP, and one Administrative Order from EPA. In response, 12 of the 23 facilities took corrective actions to eliminate the discharge, and WVDEP confirmed that the facility no longer needed a WV/NPDES CAFO permit. For the 11 facilities that were still required to obtain WV/NPDES CAFO permits, the 11 facility

files contained a WV/NPDES CAFO permit application from the facility. Eight of the facilities submitted an NMP with their permit application, while WVDEP was waiting to receive NMPs from the remaining three facilities. Three of the facilities also received an Order from WVDEP because they were unresponsive and untimely in submitting a WV/NPDES CAFO permit application as required.

Facilities covered under a WV/NPDES CAFO individual permit are required to submit an annual report to WVDEP each year.²⁹ The annual report must include information such as the number and type of livestock, as well as the amount of manure generated, land-applied, and transferred off-site during the year. WVDEP reviews the annual reports that are required to be submitted by permitted facilities, conducting one annual report review in FY2013. During EPA's file review, the file for one permitted facility included the required annual report for 2013. The annual report form was filled out as required, including information on the amount of manure generated, the amount of manure land applied, and the rates of application. The other permitted facility did not receive permit coverage until March 2014 and did not need to submit an annual report for 2013. One of the permitted facilities submitted its annual report for 2014 to WVDEP, while the other permitted facility has not yet submitted its annual report for 2014.

One facility's file documented a history of noncompliance. The facility agreed to two Consent Orders with WVDEP in response to two manure spills that occurred in 2009 and 2011. Per the terms of the Consent Order, the facility was required to pay two fines of \$13,030 and \$14,910, develop and implement a corrective action plans, and submit a WV/NPDES CAFO permit application. The facility submitted a WV/NPDES CAFO permit application in 2011. A completed NMP was not submitted by this facility. However, WVDEP expects the facility to submit an approved NMP in the near future.

8.5 WIP Implementation Goals

WV/NPDES CAFO permits require the development and implementation of a WVDA-approved NMP. Unpermitted Large CAFOs are also required to develop and implement a WVDA-approved NMP in order for the CAFO to qualify for the agricultural storm water exemption (47CSR10 §13.1.e).

WV/NPDES CAFO permits require an animal waste management system. An animal waste management system is defined as "practices designed for proper handling, storage, and utilization of wastes generated from confined animal operations."³⁰ This definition does not require a waste management structure. West Virginia's WV/NPDES CAFO permits do not explicitly require an animal waste management system that includes a waste management structure. However, all facilities covered under a WV/NPDES CAFO permit are required to implement an NMP that "ensure[s] adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities."³¹ Many WV/NPDES CAFO-permitted operations have waste management structures due to their larger size, but a WV/NPDES CAFO-permitted operation could comply with the permit requirements through a waste management system that does not include a waste management structure. For example, a WV/NPDES-permitted poultry operation may move

²⁹ [West Virginia Code of State Rules \(CSR\) §47-10-13.1.h.4](#)

³⁰ <http://www.casttool.org/Documentation.aspx>

³¹ [West Virginia Code of State Rules \(CSR\) §47-10-13.1.h.1.a](#)

poultry litter directly from the poultry houses to fields for land application or may transfer the poultry litter to another farmer or broker who collects the poultry litter from inside the poultry houses and takes the litter off-site. Therefore, WV/NPDES CAFO permits require an animal waste management system that may or may not include a waste management structure.

WV/NPDES CAFO permits do not require conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

Table 11. Priority BMPs, WV/NPDES CAFO Program.

Priority BMP	Required Component?	Notes
Nutrient Management	Required	47CSR10 §13.1.h.1 47CSR10 §13.1.e
Animal Waste Management Systems	Required	47CSR10 §13.1.h.1.A
Conservation Plans		
Stream Fencing on Pastures		
Vegetated Buffers on Pastures		

8.6 WV/NPDES CAFO Program – Observations

- In FY2013, WVDEP had a total budget of \$100,000 and approximately 1.3 FTEs dedicated to the WV/NPDES CAFO program.
- WVDA reviews and approves all WV/NPDES CAFO NMPs, and WVDEP evaluates NMP compliance during CAFO compliance inspections, which occur once per five-year permit cycle.
- To date, WVDEP has issued two WV/NPDES CAFO individual permits and has received an additional 20 WV/NPDES CAFO permit applications, including 18 from facilities in the Chesapeake Bay watershed. WVDEP has not issued any WV/NPDES CAFO permits since March 14, 2014.
- In FY2012 and FY2013, WVDEP inspected 92 poultry facilities to make permit determinations of which facilities needed WV/NPDES CAFO permits. WVDEP issued NOVs to 38 facilities that were discharging without a permit. In response, 21 of the 38 facilities took corrective actions to eliminate the discharge and the remaining 17 facilities were required to submit WV/NPDES CAFO permit applications.
- All CAFOs that discharge pollutants from the production area into waters of the United States are required to obtain WV/NPDES CAFO permits. There may be additional poultry operations in West Virginia that need WV/NPDES CAFO permits, and EPA will continue to work with WVDEP to ensure compliance at poultry operations in West Virginia.
- In FY2013, WVDEP reviewed one annual report. WVDEP did not conduct permit compliance inspections at either of the two WV/NPDES permitted CAFOs.
- West Virginia’s WV/NPDES CAFO program requires two of the five priority BMPs. West Virginia’s WV/NPDES CAFO program requires nutrient management planning and animal waste management systems. West Virginia’s WV/NPDES CAFO program does not require conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

9.0 Summary

This section summarizes the observations that EPA highlighted in each of the program sections above.

West Virginia's Animal Agriculture WIP BMPs

1. West Virginia has only one regulatory program related to animal agriculture, the WV/NPDES CAFO Program, which requires only two of the five priority BMPs.
2. Only two out of the approximately 2,637 farms with livestock and poultry in the Chesapeake Bay watershed portion of West Virginia are covered under the WV/NPDES CAFO program, with no regulatory requirements for the remaining farms.
3. West Virginia is relying heavily on programs with voluntary participation, such as BMP cost-share programs, in order increase BMP implementation to meet West Virginia's WIP goals.
4. While there is still some uncertainty about the detailed strategies West Virginia has for these voluntary programs to stay on pace with meeting BMP implementation targets outlined in its WIP, West Virginia is currently meeting its modeled nutrient and sediment goals and has stated that West Virginia will continue to adapt programs according to needs to achieve the 2025 WIP BMP and pollutant load reduction goals.
5. West Virginia is relying on increases in two BMPs, nutrient management and stream fencing on pastures, to reduce 30.3% of its total nitrogen loads, 41.9% of its total phosphorus loads, and 41.1% of its total sediment loads.

Nutrient Management Program

6. In FY2014, WVDA had a total budget of approximately \$314,004 and approximately 4.75 FTEs dedicated to the Nutrient Management program. In FY2014, WVCA had a total budget of approximately \$62,400 and approximately 1 FTE dedicated to the Nutrient Management program. In FY2013, WVDEP had a budget of \$100,000 and approximately 1.3 FTEs for the WV/NPDES CAFO program activities, which include nutrient management activities at WV/NPDES-permitted CAFOs.
7. All facilities that are covered under a WV/NPDES CAFO permit are required to develop and implement an NMP. To date, only two facilities are covered under the WV/NPDES CAFO program and are required to develop and implement an NMP. All unpermitted Large CAFOs are also required to develop and implement an NMP in order for the CAFO to qualify for the agricultural storm water exemption. All other NMPs in West Virginia are voluntary. All West Virginia NMPs must be prepared by a certified nutrient management planner.
8. West Virginia has 72 certified nutrient management planners, including 19 (approximately 26%) in the Chesapeake Bay watershed.
9. In FY2015, 603 farms in West Virginia had active NMPs, including 375 farms in the Chesapeake Bay watershed with active NMPs. WVDA estimates that approximately 95% of NMPs (approximately 573 NMPs) are on animal agriculture operations, while only 5% of NMPs (approximately 30 NMPs) are on crop-only operations. NMPs cover approximately 61,298 acres in West Virginia's portion of the Chesapeake Bay watershed including approximately 242 acres (0.4%) at NPDES-permitted CAFOs.

10. WVDA does not conduct any compliance activities to determine NMP compliance at farms with voluntary NMPs, and WVDEP does not conduct any compliance activities to determine NMP compliance at unpermitted Large CAFOs. WVCA does review NMP records for compliance during the ranking process for cost-share funding.
11. West Virginia's Nutrient Management Program requires one of the five priority BMPs. West Virginia's Nutrient Management Program requires NMPs for all WV/NPDES-permitted CAFOs and for all unpermitted Large CAFOs through the WV/NPDES CAFO Program. West Virginia's Nutrient Management Program does not require animal waste management systems, conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

WV/NPDES CAFO Program

12. In FY2013, WVDEP had a total budget of \$100,000 and approximately 1.3 FTEs dedicated to the WV/NPDES CAFO program.
13. WVDA reviews and approves all WV/NPDES CAFO NMPs, and WVDEP evaluates NMP compliance during CAFO compliance inspections, which occur once per five-year permit cycle.
14. To date, WVDEP has issued two WV/NPDES CAFO individual permits and has received an additional 20 WV/NPDES CAFO permit applications, including 18 from facilities in the Chesapeake Bay watershed. WVDEP has not issued any WV/NPDES CAFO permits since March 14, 2014.
15. In FY2012 and FY2013, WVDEP inspected 92 poultry facilities to make permit determinations of which facilities needed WV/NPDES CAFO permits. WVDEP issued NOVs to 38 facilities that were discharging without a permit. In response, 21 of the 38 facilities took corrective actions to eliminate the discharge and the remaining 17 facilities were required to submit WV/NPDES CAFO permit applications.
16. All CAFOs that discharge pollutants from the production area into waters of the United States are required to obtain WV/NPDES CAFO permits. There may be additional poultry operations in West Virginia that need WV/NPDES CAFO permits, and EPA will continue to work with WVDEP to ensure compliance at poultry operations in West Virginia.
17. In FY2013, WVDEP reviewed one annual report. WVDEP did not conduct permit compliance inspections at either of the two WV/NPDES permitted CAFOs.
18. West Virginia's WV/NPDES CAFO program requires two of the five priority BMPs. West Virginia's WV/NPDES CAFO program requires nutrient management planning and animal waste management systems. West Virginia's WV/NPDES CAFO program does not require conservation plans, stream fencing on pastures, or vegetated buffers on pastures.

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