# Virginia Animal Agriculture Program Assessment Update

Final

U.S. Environmental Protection Agency Region III

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# **Acronyms and Abbreviations**

AFO Animal feeding operation
ASA Agricultural Stewardship Act
BMP Best Management Practice

CAFO Concentrated Animal Feeding OperationCBPO EPA Chesapeake Bay Program Office

**CBW** Chesapeake Bay Watershed

**DCR** Virginia Department of Conservation and Recreation

**DEQ** Virginia Department of Environmental Quality

**EPA** U.S. Environmental Protection Agency

**FTE** Full-time equivalent

GIS Geographic information system NMP Nutrient Management Plan

**NOV** Notice of Violation

NRCS Natural Resources Conservation Service (U.S. Department of Agriculture)

RMP Resource Management Plan

**SWCD** Soil and Water Conservation District

TMDL Total Maximum Daily Load

USDA United States Department of AgricultureVACS Virginia Agricultural Cost-Share BMP Program

**VDACS** Virginia Department of Agriculture and Consumer Services

**VPA** Virginia Pollution Abatement

**VPDES** Virginia Pollutant Discharge Elimination System

WIP Watershed Implementation Plan

# 1.0 Executive Summary

EPA assessed the Commonwealth of Virginia's (Commonwealth) animal agriculture programs related to controlling nutrient and sediment impacts on water quality. This assessment updates the Virginia Animal Agriculture Program Assessment published in February 2015 with a focus on changes in program features and implementation since 2015 and their impact on overall program effectiveness, meeting federal requirements, and alignment with Chesapeake Bay Total Maximum Daily Load (TMDL) targets and Phase III Watershed Implementation Plan (WIP) commitments. The updates and observations discussed throughout the report are based on information gained through questionnaire responses from the Department of Environmental Quality (DEQ), Department of Conservation and Recreation (DCR), and Virginia Department of Agriculture and Consumer Services (VDACS); and follow-up interviews with DEQ, DCR, and VDACS; file reviews; and web searches.

The assessment included programs applicable to water quality protection-related animal agriculture activities in Virginia, including the Nutrient Management Program, Virginia Pollution Abatement (VPA) Animal Feeding Operation (AFO) Permit Program, VPA Poultry Waste Management Program, Virginia Pollutant Discharge Elimination System (VPDES) Concentrated Animal Feeding Operation (CAFO) Program, Resource Management Plan Program, Agricultural Stewardship Act Program, and Small AFO Evaluation and Assessment Strategy.

Based on this assessment, to achieve Virginia's Phase III WIP commitments, additional reductions in nutrient and sediment loading will need to continue to come from voluntary Best Management Practice (BMP) installation at unpermitted operations, additional BMP requirements for permitted operations, or an increase in the number of operations that are required to implement BMPs or obtain permits.

Virginia has made progress in its efforts to achieve the Phase III WIP nutrient and sediment reductions. Virginia passed legislation in 2020 that will take effect in 2028 requiring operations to implement nutrient management and livestock stream exclusions if the WIP goals for those BMPs are not met. In addition, Virginia has developed new funding mechanisms (including the Direct Pay Initiative and Whole Farm Approach) to incentivize development and voluntary implementation of best management practices, Nutrient Management Plans (NMPs), and Resource Management Plans (RMPs), which, if successful, could increase the number of BMPs implemented at unpermitted facilities.

However, to achieve the necessary load reductions for its Phase III WIP, Virginia must increase BMP implementation. EPA found that Virginia's animal agriculture programs related to water quality require the implementation of some but not all the WIP BMPs identified by EPA for evaluation in this assessment.

As part of the Chesapeake Bay Program (CBP) partnership, Virginia committed to have practices and controls in place by 2025 to achieve applicable water quality standards in the Bay (the 2025 goal). NMPs were implemented on about two thirds of the acres required to meet the 2025 goal. Virginia must increase NMP implementation under permits and voluntary programs to meet the 2025 goal included in the Phase III WIP.

Virginia was at approximately one quarter of the WIP goal for Animal Waste Management Systems, defined by the CBPO as "Any structure designed for collection, transfer and storage of manures and associated wastes generated from the confined portion of animal operations and complies with NRCS 313 (Waste Storage Facility) or NRCS 359 (Waste Treatment Lagoon) practice standards". This BMP is required for VPA and VPDES permits; therefore, meeting this goal may require permitting of additional facilities or targeting efforts through the voluntary programs to increase adoption.

For livestock stream exclusions, Virginia is only at 27% of the WIP Goal. Livestock stream exclusion practices may be included in NMPs, RMPs, or ASA plans, or voluntarily implemented at Small AFOs identified through the Small AFO Evaluation and Assessment Strategy. Virginia has adopted the legislation mentioned above which will go into effect in 2028. In the meantime, more extensive marketing of funding mechanisms such as VACS and the Virginia BMP Tax Credit Program could be used to increase livestock stream exclusion implementation.

Virginia could also increase mandatory NMPs by lowering the VPA permit size thresholds to increase the number of operations required to obtain VPA permits and implement NMPs. Currently, any AFO having 300 or more animal units and utilizing a liquid manure collection and storage system is required to obtain coverage under either a VPA AFO general or individual permit and any poultry feeding operation that confines more than 20,000 chickens or 11,000 turkeys is required to obtain coverage under the VPA Poultry Waste General Permit. In addition, any Concentrated Animal Feeding Operation (CAFO) may be required to obtain a VPDES individual permit. Although lowering the thresholds for permit coverage could help Virginia achieve its BMP goals, it would require a change in state law.

Below are selected observations from each of the program evaluation sections of the report.

### **Nutrient Management Program**

- DCR increased NMP implementation on Virginia farms (including farms with only cropland and animal operations) by approximately 10% since 2015. According to DCR, 643,770 acres are covered under NMPs within the Chesapeake Bay Watershed in Virginia. NMP implementation must be increased to meet the 2025 target in the Phase III WIP, listed as 951,395 acres for Nutrient Management – Core Plans and Nutrient Management – Enhanced as 758,474 acres.
- Additional NMPs have been implemented at unpermitted farms through the RMP program. The RMP regulations for each land use type require "an NMP that meets specifications of the Nutrient Management Training and Certification Regulations (4VAC50-85)".
- DCR performs outreach to small dairy farms through DCR's contract with Virginia State University. This outreach includes education on the nutrient management program.
- During its 2020 session, the Virginia General Assembly passed House Bill 1422 and Senate Bill 704
  as Chesapeake Bay Watershed Implementation Plan (WIP) Initiatives. These bills establish a
  timeline to achieve water quality goals as given in the state's Phase III WIP: if the required
  implementation is not met by December 31, 2025, specified regulatory action will take effect. As
  per an amendment during the 2023 session, the effective date for this action is 2028.
- The Virginia General Assembly 2020 session, House Bill 1422, and Senate Bill 704 Chesapeake Bay Watershed Implementation Plan Initiatives passed and were signed by the Governor in June 2020.
   The legislation included regulatory actions that will take effect in 2028, as of a 2023 amendment, if the required implementation is not met by December 31, 2025.

### **VPA AFO Permit Program and VPA Poultry Waste Management Program**

• The permitted operations covered under the VPA AFO and Poultry Waste Management permit programs cover 1,010 operations which represents 99.9% of the facilities that meet the threshold for coverage under the VPA permit program; 900 of these VPA permitted operations are in the CBW. As of May 26, 2022, two operations were pending permit coverage, and both were located in the Chesapeake Bay Watershed.

- total of 31 poultry waste brokers statewide were reported as of August 20, 2021, to be registered with DEQ as required under the VPA Poultry Waste Management regulations. As of March 15, 2023, there are 36 active poultry waste brokers registered.
- In State Fiscal Year (SFY) 2019-2020, DEQ inspected approximately 52% of VPA AFO permittees and approximately 55% of VPA Poultry Waste Management permittees.
- The most common non-compliance issues at VPA permitted poultry operations are: NMP revisions needed, expired manure analysis, residual manure exposed, and incomplete manure transfer records.

### **VPDES CAFO Program**

- As of August 20, 2021, 10 facilities are covered by a VPDES CAFO individual permit, one VPDES CAFO permitted facility is in the CBW.
- Five VPDES-permitted CAFOs (or 50%) were inspected in SFY2019-2020. Noncompliance was
  identified at each of the inspected facilities and the noncompliance issues were resolved at all
  facilities. DEQ listed incomplete or unavailable visual inspection records for BMPs and Storm
  Water, exposed manure, and expired manure analysis as common examples of non-compliance at
  VPDES-permitted CAFOs.

### **Resource Management Plan Program**

- According to the RMP Annual Report for the period Sept. 1, 2020 June 30, 2021, there are 512 plans in the Chesapeake Bay drainage covering nearly 112,422 acres, 72 plans outside the Chesapeake Bay drainage and 18 plans in both drainages.
- According to the RMP Annual Report, as of the end of SFY2020-2021, 157 RMPs received a
  certificate of implementation (DCR, 2021a); those plans cover nearly 35,000 acres within the
  Chesapeake Bay watershed (Commonwealth of Virginia, 2021).
- Each management unit that has been issued a Certificate of RMP Implementation must be
  inspected by the local SWCD at least once every 3 years to ensure implementation of,
  maintenance of, and compliance with the RMP. According to the DCR questionnaire, DCR began
  notifying SWCDs of upcoming inspections in February 2020; six inspections were conducted in
  SFY2020-2021 and nearly 100 are due during SFY2022-2023.
- Through the RMP program, NMPs have been implemented at unpermitted farms. The RMP regulations for each land use type require "an NMP that meets specifications of the Nutrient Management Training and Certification Regulations (4VAC50-85)". These NMPs are then verified as fully implemented through RMP certification inspections.
- DCR began a Direct Pay Initiative for RMP developers to incentivize RMP development. In addition, increased tax credits are available for implementation of BMPs that are part of an approved RMP.

### Agricultural Stewardship Act Program

- The ASA Program is designed to address specific water quality concerns reported to VDACS and provides directed support to any agricultural operations without DEQ permits.
- VDACS has not published new ASA Guidelines since EPA's 2015 assessment.
- VDACS received state funding for an additional FTE to be hired in SFY2021-2022. This FTE will
  support the VDACS team with verifying stewardship plan BMP tracking and implementation.

• VDACS added a GIS tracking module in 2017 for the ASA Program. The tracking system is a module on DCR's current Conservation Application Suite.

### **Small AFO Assessment and Evaluation Strategy**

- Staff from the DEQ and VDACS continue to evaluate Small AFOs (AFOs with animal inventories below Virginia's thresholds for VPA permit coverage) as the need arises. The Strategy procedures are used when a new facility is brought to the staff's attention.
- The Small AFO Strategy does not require implementation of any specific management practices. To address any water quality issues, the farmer proposes which BMPs will be implemented and DEQ and VDACS determine whether the proposed BMPs are appropriate.
- DEQ has a Small AFO Strategy Self-assessment checklist that a farmer can use to determine if they are an AFO and if there are potential water quality concerns at their facility.

### 2.0 Introduction

The Virginia Animal Agriculture Program Assessment document, published in February 2015 (hereinafter "EPA's 2015 assessment report"), was developed in 2014 and early 2015 to assess the Commonwealth of Virginia's animal agriculture programs related to controlling nutrient and sediment impacts on water quality. The U.S. Environmental Protection Agency (EPA) developed this assessment update to document program changes and progress since the 2015 assessment and evaluate how those changes have impacted the efficiency and effectiveness of program implementation and consistency with the 2025 agriculture sector commitments in the current Watershed Implementation Plan (WIP). The assessment reviewed activities during the July 1, 2019—June 30, 2020 timeframe, or state fiscal year (SFY 2019—2020). This assessment also considered additional information provided by Virginia's Resource Agencies in their comments to the draft of this assessment report which were provided in April 2023.

# **Program Review Approach**

On July 27, 2021, EPA sent a questionnaire to Virginia DEQ, DCR, and VDACS requesting responses to questions regarding seven Virginia programs applicable to water quality protection-related animal agriculture activities in Virginia.

Nutrient Management Program

VPA AFO Permit Program

VPA Poultry Waste Management Program

VPDES CAFO Program

Resource Management Plan (RMP) Program

Agricultural Stewardship Act (ASA) Program

Small AFO Assessment and Evaluation Strategy

The intent of the questionnaire was to follow up on the observations identified in the 2015 assessment report that indicated potential opportunities for improving program alignment with the commitments in the WIP or consistency with federal Clean Water Act requirements. The questionnaire instructions asked the Virginia agencies to provide responses for activities occurring during the July 1, 2019 – June 30, 2020, state fiscal year (SFY2019-2020) or to specify an alternate timeframe, if appropriate.

EPA also reviewed files for facilities regulated under the VPDES CAFO Program, VPA AFO Permit Program, and VPA Poultry Waste Management Permit Program. The files included information such as permits, permit applications, Nutrient Management Plans, correspondence, inspection reports, and compliance and enforcement communication. Below is a summary of the files reviewed; for this report, the files reviewed are considered representative.

### Tidewater Regional Office:

- 4 operations covered by VPA Poultry Waste and General Permits
- 2 operations covered by VPA AFO Permits
- 2 operations covered by VPDES CAFO Permits

Valley Regional Office:

- 4 operations covered by VPA Poultry Waste General Permits
- 2 operations covered by VPA AFO permits

The focus of the file review was to evaluate whether on-the-ground program implementation reflects the policies and procedures described in the program documents and information provided by agency staff. EPA logged the review of each file, including the file name and recorded observations related to program implementation, including BMPs implemented at the facility, non-compliance issues identified during inspections, missing documentation or correspondence, and inconsistencies and differences in inspection approaches between the DEQ Regional Offices.

EPA also conducted remote interviews with state agency staff to follow up on questions related to the questionnaire responses and file reviews and to further discuss updates to the animal agriculture programs since the 2015 assessment. EPA conducted follow-up interviews with the following agencies:

- Virginia DEQ
  - Central Office and Valley Regional Office (January 24, 2022)
  - Central Office and Tidewater Regional Office (February 3, 2022)
- Virginia DACS (February 4, 2022)
- Virginia DCR (February 8, 2022)

As in the 2015 assessment, EPA used information from the Virginia agencies questionnaire responses, DEQ file reviews, follow-up interviews, and agency and entity websites and guidance documents to develop and substantiate observations about Virginia's animal agriculture programs related to water quality. EPA reviewed all the material provided but generally limited the content of this report to information necessary to support the observations.

# **Report Organization**

Sections 3 – 6 of this report describe the animal agriculture industry and relevant water quality programs in Virginia; agency funding and funding available and needed for implementation of agricultural BMPs to achieve the goals of the Phase III WIP; an overview of the Virginia agencies involved in animal agriculture program implementation; background on the Phase III WIP and the goals and reductions needed to achieve the WIP goals; and a summary of observations regarding the BMPs that may be required or implemented through each of Virginia's programs. As stated above, these sections focus on relevant changes since 2015; comprehensive descriptions of programs and agencies are included in the 2015 assessment report.

Sections 7 - 12 detail specific animal agriculture programs. For each program, the report describes any changes to program implementation since the 2015 assessment, facility universe, resource allocation, data systems, compliance and enforcement procedures and data, as well as progress made towards relevant WIP implementation goals. These program-specific sections also include observations related to program implementation, alignment with WIP commitments, and conformance to federal CAFO regulations, where relevant. Observations are also summarized in Section 13.

### 3.0 Virginia Animal Agriculture Program Overview

In assessing the reductions achieved, reductions needed, and level of BMP implementation necessary to meet the Phase III WIP goals related to animal agriculture, it is helpful to understand the types and populations of livestock and poultry, as well as the statutory and regulatory framework for controlling pollutants from animal agriculture in Virginia.

# 3.1 Animal Agriculture Industry

According to the 2017 United States Department of Agriculture (USDA), National Agricultural Statistics Service Census of Agriculture (Ag Census), Virginia had 25,483 livestock and poultry operations statewide (animal agriculture operations) in 2017, down slightly from the 26,555 animal agriculture operations from the 2012 Ag Census. The animal inventory and production data shown for various animal sectors in Tables 1 – 3 indicate a slight increase in dairy cattle, an increase in broilers and pullets, and fewer laying hens, but more eggs produced.

Table 1 provides 2012 and 2017 animal inventories for Virginia counties that have some portion in the Chesapeake Bay watershed According to the EPA's Chesapeake Bay Program Office, for operations that have multiple groups of animals cycled through during a year, the animal inventories were based on consideration of both inventory and sales numbers to estimate total animals produced.

| Table 1: Virginia Animal Inventories (headcount) for Chesapeake Bay Watershed |      |       |         |          |         |         |        |   |
|---|------|-------|---------|----------|---------|---------|--------|---|
|   | V B  | Doine | Poultry |          |         |         | ۰      |   |
|   | Year | Beef  | Dairy   | Broilers | Turkeys | Pullets | Layers | 3 |

| Year   | Beef    | Daire   |             | Swine      |          |           |           |
|--------|---------|---------|-------------|------------|----------|-----------|-----------|
| rear   | Бееі    | Dairy   | Broilers    | Turkeys    | Pullets  | Layers    | Swille    |
| 2012   | 319,804 | 53,277  | 216,892,867 | 17,003,058 | 715,075  | 2,258,479 | 31,404    |
| 2017   | 311,714 | 54,558  | 255,725,229 | 16,790,068 | 901,594  | 1,472,128 | 88,538    |
| Change | -8,108  | +1,278  | +38,824,588 | -212,263   | +186,819 | -786,381  | +57,185   |
| Change | (-2.5%) | (+2.4%) | (+17.9%)    | (-1.2%)    | (+26.1%) | (-34.8%)  | (+576.7%) |

# 3.2 Animal Agriculture Program Updates

Water quality impacts from Virginia's animal agriculture operations are regulated and managed through a suite of regulatory and voluntary programs. These programs, and their enabling statutes, are listed in EPA's 2015 assessment report. Since 2015, Virginia has updated the following regulations or statutes relevant to animal agriculture programs. Changes to program implementation since EPA's 2015 assessment are summarized below and discussed in more detail in the section indicated.

VA Agricultural Best Management Practices Tax Credit Program

- Va. Code § 58.1-339.3. Agricultural Best Management Practices tax credit.
- New legislation (HB 1763 Tax credit; agricultural Best Management Practices; and SB 1162 Tax credit; agricultural Best Management Practices) increases tax credits for the implementation of certain agricultural Best Management Practices that are required as part of a certified Resource Management Plan.

See section 4.2 for further details.

VPA Poultry Waste Management Permit Program

- The VPA Regulation (9VAC25-630-10 et. seq.) and General Permit for Poultry Waste
   Management were revised to require all regulated entities to submit to DEQ annual records of poultry waste transfers based on the implementation dates established in the regulation.
- A new reporting portal (myDEQ) is under development. This tool will allow all parties involved in waste transfers to submit their records online.

Following are brief descriptions of the roles and responsibilities of DEQ, DCR and VDACS with respect to animal agriculture in Virginia and any changes to these roles and responsibilities since EPA's 2015 assessment.

# 3.3 Virginia Department of Environmental Quality

DEQ's role has not changed since EPA's 2015 assessment. DEQ is responsible for implementation and compliance of the VDPES CAFO, VPA AFO, and VPA Poultry Waste Management permit programs. DEQ also implements, in collaboration with VDACS, the Small AFO Evaluation and Assessment Strategy.

# 3.4 Virginia Department of Conservation and Recreation

DCR continues to implement Virginia's nutrient management program and the RMP program. DCR and the SWCDs also continue to administer the VACS Program, the Virginia BMP Tax Credit Program, and the Conservation Reserve Enhancement Program. Since EPA's 2015 assessment, DCR has also implemented Direct Pay Initiatives for Nutrient Management Plan (NMP) and RMP development, as well as a Whole Farm Approach best management practice for producers participating in DCR cost-share programs.

In addition, during the interview, DCR staff discussed their outreach efforts to small farms. According to DCR staff, DCR has contracted with Virginia State University's Small Farm Outreach Program. Through this Small Farm Outreach Program, DCR promotes its animal agriculture programs, including the nutrient management program and funding programs, to small farms and unpermitted dairies. As mentioned in EPA's evaluation of the Phase III WIP, the targeting of small dairy farms would help to increase nutrient management implementation (EPA, 2019). For additional discussion, see Section 7.0.

DCR also developed a survey, distributed in 2021 through the Small Farm Outreach Program. The survey asked whether the farmer participates in DCR programs and if not, asked them to state why they did not. When DCR finishes evaluating the survey results, they may have a better understanding of how to incentivize BMP implementation and its programs to operators of small farms, which may in turn result in increased BMP implementation.

# 3.5 Virginia Department of Agriculture and Consumer Services

VDACS's role has not changed since EPA's 2015 assessment. VDACS is responsible for implementation of the ASA program. As noted above, VDACS also collaborates with DEQ to administer the Small AFO Evaluation and Assessment Strategy.

# 4.0 Animal Agriculture Program Resources

As stated in EPA's 2015 assessment report, DEQ, DCR, and VDACS are the primary agencies with regulatory responsibilities for Virginia's animal agriculture programs. In addition, the SWCDs assist with the implementation of various programs. The Virginia Cooperative Extension is also an integral partner in the Commonwealth's animal agriculture technical and educational programs. Section 4.0 discusses Virginia's BMP funding programs available to animal agriculture operations in the CBW:

Virginia Agricultural BMP Cost-Share (VACS) Program
Virginia BMP Tax Credit Program
Conservation Reserve Enhancement Program
Direct Pay Initiative
Whole Farm Approach
Small Farm Outreach Program

Each program description includes an overview of the program, the Commonwealth agency administering the program, the program's goals, funding to date, and projected funding. Specifically, Section 4.0 evaluates whether the Commonwealth's BMP funding programs are keeping pace with BMP funding projections necessary to meet the Commonwealth's Phase III WIP commitments.

# 4.1 Virginia Agency Staffing Positions

The assessment update inquired about changes to full-time equivalents (FTEs) since EPA's 2015 assessment. In the questionnaire responses, the agencies noted the following changes in FTEs:

VPDES CAFO Permit, VPA AFO Permit, and VPA Poultry Waste Management (PWM) Permit Programs, and Small AFO Assessment and Evaluation Strategy:

- DEQ staffing has remained relatively constant since EPA's 2015 assessment with the following exceptions:
  - Elimination of one FTE from the Piedmont Regional Office due to state budget limitations.
     However, following allocation of funds for DEQ FTEs related to Virginia Executive Order 6,
     another FTE was created for that office that divides responsibilities between the biosolids and AFO/CAFO programs.
  - Some FTEs are or soon will be vacant due to staff retirements; DEQ staff do not know if these positions will be filled. DEQ stated that they would not be lacking in staff to implement animal agriculture programs. In DEQ's written response provided after the interviews, they indicated that DEQ evaluates what impacts will occur if a position is not filled, stating that "In most cases, if the decision is made to not fill a position, some alternative has been devised to meet the programmatic need."

### **Nutrient Management Program**

 No changes to DCR program staffing, all program management positions are now refilled. DCR specified NMPs are normally reviewed within two weeks of receipt. 207 NMPs, for both permitted and unpermitted operations, were reviewed by two FTEs in FY2022.

### **RMP Program**

No changes in DCR staffing. As stated in the RMP section below, DCR noted that a limitation to
implementation is the number of active certified RMP developers. DCR continues to consider options
that will further incentivize the development and implementation of RMPs. DCR also has developed its
own conservation planning certification training program to hopefully increase the number of certified
RMP developers.

### **ASA Program**

• VDACS staffing has remained constant since 2015; however, an additional FTE will be hired in SFY 2021-2022.

# **4.2 BMP Funding Programs**

As discussed in EPA's 2015 assessment report, Virginia uses a variety of programs, grants and other funding mechanisms to support its animal agriculture operations. Many of these programs are administered by DCR through SWCDs, including the Virginia Agricultural BMP Cost-Share (VACS) Program, the Virginia BMP Tax Credit Program, the Conservation Reserve Enhancement Program, and the Direct Payment Initiative (see Table 2). These programs provide financial and technical assistance to carry out construction or implementation of selected BMPs. Agricultural operators' BMPs are inspected and certified by their local SWCD, and operators receive cost-share payments or a tax credit approval letter from their local SWCD after BMP implementation is verified. Annual practices are verified by SWCD staff and determined to be complete prior to the cost-share payment being issued. For structural practices, verification inspections may occur throughout the lifespan of the contract on that practice.

The Commonwealth of Virginia's FY 2021 Chesapeake Bay and Virginia Waters Clean-Up Plan details the Commonwealth's funding projections for implementation of BMPs to meet the Phase III WIP commitments. The plan indicates that, for FY2021 (July 1, 2020-June 30, 2021), DCR allocated "\$35 million in agricultural cost-share and \$5.85 million in technical assistance funds to Soil and Water Conservation Districts. An additional \$5.6 million in agricultural cost-share and \$547,000 in technical assistance funds were allocated to Districts in December 2020." As also stated in the Plan, "For FYs 2020-2030 a revised estimate of \$2.64 billion may be required from state and federal funds as well as farmer financial contributions to meet water quality goals. Approximately 40% of this total (nearly \$1.1 billion) could be needed from State sources, the vast majority of which is direct funding of the VACS Program and support for SWCDs that implement the VACS program." (Commonwealth of Virginia, 2021). Therefore, annual funding for cost-share and technical assistance would need to more than double the SFY2021 funding levels to meet this estimated 10-year need.

Table 2. BMP Funding Programs, Resources Allocated, Eligibility, and Implementation

| BMP Funding                        | Budget                        | Type of             | Eligible BMPs  | Implementation Level                      |
|------------------------------------|-------------------------------|---------------------|--|---|
| Program                            | Ŭ                             | Funding             |  | ·   |
| VACS Program                       | \$40.6<br>million<br>(FY2021) | Cost-share          | <ul> <li>Program eligibility requires NMPs for animal waste practices</li> <li>BMPs include Animal Waste Management Systems, nutrient management, cover crops, forest buffers, grass buffers, and livestock streamside exclusion measures. BMPs included in an RMP receive priority consideration</li> </ul> | 14,561 BMPs in FY2021                     |
| Virginia BMP Tax<br>Credit Program | \$1.5<br>million<br>(CY2018)  | Tax credit          | <ul> <li>Agricultural BMPs included in a SWCD-approved RMP, including livestock-waste and poultry-waste management, soil erosion control, and nutrient management</li> <li>Purchase of no-till or precision agriculture equipment</li> </ul>   | 527 farmers receiving tax credit (CY2018) |
| Conservation                       | \$1,258,32                    | Financial           | Riparian forest buffers, grass buffers, and  | 19,660 acres of riparian                  |
| Reserve                            | 1.58                          | incentives,         | wetlands   | buffers and filter strips                 |
| Enhancement                        | (FY2014-                      | cost-share,         |  | restored in Virginia's                    |
| Program                            | FY2021)                       | and rental payments |  | CBW (as of June 2021)                     |
| Direct Pay                         | \$23,647                      | Direct              | NMPs and RMPs  | 2,365 acres (in RMPs                      |
| Initiative                         | (through                      | payment             |  | only; through FY2021)                     |
|                                    | FY2021<br>for RMPs)           |                     |  |   |
| Whole Farm                         | Not                           | Cost-share          | • RMPs   | 900 acres of existing                     |
| Approach (pilot                    | available                     |                     | Agricultural BMPs, including nutrient  | RMPs will be certified                    |
| project on                         |                               |                     | management and cover crop practices  | New RMPs on more                          |
| Eastern Shore)                     |                               |                     |  | than 4,100 acres                          |

### 4.2.1 VACS Program

The VACS Program supports implementation of more than 70 agricultural BMPs including erosion control, stream fencing and alternative watering systems, stream bank stabilization, nutrient management, Animal Waste Management Systems, as well as restoring streamside buffers, planting cover crops, establishing rotational grazing, planting tree seedlings in open land, preserving wetlands, protecting sinkholes, and other practices known to protect or improve water quality (*refer to* DCR, 2022a for the complete list of supported BMPs). The Virginia Soil and Water Conservation Board Policy and Procedures on Soil and Water Conservation District Cost-share and Technical Assistance Funding Allocations for Fiscal Year 2023 (DCR, 2022a) states:

VACS emphasizes the implementation of agricultural BMPs in locations that provide the greatest nutrient and sediment reductions for the taxpayer's dollars spent. Cost-shared BMPs must maximize nutrient and sediment reductions and protect the taxpayer's interest, by implementing the most cost effective BMPs possible in locations that achieve the greatest pollutant reductions on a field-by-field basis. VACS objectives include special emphasis on the reduction of nutrients (nitrogen and phosphorus), and sediment delivered to the Chesapeake Bay; by preventing additional pollution from entering state waters; and meeting the criteria for Virginia's compliance with Section 319 of the Clean Water Act.

Of the BMPs selected by EPA for evaluation in this assessment, Animal Waste Management Systems, nutrient management, cover crops, forest buffers, grass buffers, and livestock streamside exclusion measures are priority VACS practices eligible for cost-share funding without having to meet any of the other VACS priority considerations. In FY2020, the following agricultural BMPs were installed in the CBW using VACS cost-share funding: 363,178 acres under NMPs, 46 animal waste facilities, 172,225 acres of cover crops, 2,516 acres of riparian buffers, and 1,719,400 linear feet of livestock exclusion (DEQ, 2021b).

EPA's 2015 assessment report indicated that the FY2013 disbursement to SWCDs for BMP installation was \$25,842,815 and \$23,439,337 million in FY2015. Since then, as part of a 2017 stakeholder advisory group, a recommendation was made that the VACS program baseline funding be maintained at \$35 million. At this funding level, it was determined that SWCDs would need at least \$4.55 million in technical assistance funding to support agricultural producers. As a result, during the 2020 General Assembly, the SWCDs received a \$4.55 million baseline technical assistance amount. VACS funding as well as funding for SWCDs to carry out this technical assistance will assist in necessary BMP implementation.

As reported by the Commonwealth of Virginia (2021), DCR initially allocated \$35.0 million in agricultural cost-share and \$5.85 million in technical assistance funds to SWCDs for FY2021. An additional \$5.6 million in agricultural cost-share and \$547,000 in technical assistance funds were allocated to Districts in December 2020. Finally, \$500,000 in Conservation Reserve Enhancement Program (CREP) cost-share funds were available for disbursement to Districts as state match for new projects. The VACS program funded the installation of 14,561 agricultural BMPs, in FY2021.

In addition, DCR continues to fund grants for 100% of the cost of implementing livestock stream exclusion practices to cost-share applicants. This practice requires stream exclusion fencing, installation of a permanent fence, alternative watering systems, and a minimum 35-foot vegetated buffer along streams. Furthermore, the VACS stream exclusion options were expanded in FY2020, including continued funding for up to 100% of the practice cost based upon buffer width and contract lifespan. Wide width buffers greater than or equal to 35 feet also receive a per acre buffer payment to incentivize the most invaluable practices. The expansion of cost-share options for these practices should increase farmer participation (Commonwealth of Virginia, 2021).

As of June 2019, almost \$50 million had been provided for this livestock stream exclusion initiative by the Commonwealth to producers within Virginia's Chesapeake Bay watershed. Once all stream exclusion practices are installed, approximately 5.5 million linear feet of stream bank will be protected and nearly 64,000 animal units in the Chesapeake Bay watershed will be excluded from streams. (Commonwealth of Virginia, 2021). Virginia's 2025 WIP implementation goal is 72,156 acres with grass or forest buffers for stream exclusion; however, the relationship between linear feet and acres of grass or forest buffers for stream exclusion is not clear.

### 4.2.2 Virginia BMP Tax Credit Program

Virginia passed new legislation in 2021 increasing the tax credit for RMPs under the Virginia BMP Tax Credit Program to increase financial incentive for producers to implement RMPs. The new legislation enhances tax credit equal to 50% of the first \$100,000 spent in implementing certain agricultural BMPs implemented on acreage included in a SWCD-approved RMP. This represents an increase from the 25% tax credit previously available. The bill retains a 25% tax credit for all other agricultural BMPs not eligible for the enhanced credit rate; however, the maximum amount of expenses to which the rate can be applied increased from \$70,000 to \$100,000. There is an annual cap on these credits of \$75,000 per year per taxpayer and \$2 million per year for all participants. (Commonwealth of Virginia, 2021). In seeking new legislation, DCR has worked to address Policy Initiative 21 (Increase tax credits for agriculture BMPs and equipment) of the Phase III WIP.

As indicated in EPA's 2015 report, disbursements from FY00-FY12 totaled \$5,309,039 and disbursements in FY2013 were \$627,272. By calendar year 2018, disbursements increased to \$1.5 million in tax credit dollars to 527 farmers (University of Maryland, 2019). As the new legislation increasing the tax credit for RMPs was recently passed, data were not available to show how the new legislation has impacted RMP implementation.

Of the BMPs selected by EPA for evaluation in this assessment, implementation of Animal Waste Management Systems, nutrient management, cover crops, forest buffers, grass buffers, and livestock streamside exclusion measures are all eligible for credit against state income taxes. Note that operators must have an NMP approved by the local SWCD to participate in Virginia's BMP Tax Credit Program (DCR, 2022b).

### 4.2.3 Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program provides financial incentives, cost-share and rental payments to farmers who voluntarily restore riparian forest buffers, grass buffers, and wetlands using CREP-approved BMPs. The Chesapeake Bay CREP aims to restore 22,000 acres of riparian buffers and filter strips and 3,000 acres of wetlands in Virginia's CBW. From FY2000 through FY2013, the total CREP cost share payment was \$5,914,608 which restored 18,962 acres of buffer in Virginia's CBW. From FY2014 through FY2021, the total CREP cost share payment was \$1,258,321.58 which restored 698 acres. As of June 2021, approximately 19,660 acres of riparian buffers and filter strips had been restored in Virginia's CBW. For FY2021, \$500,000 of cost-share funds were available to SWCDs (Commonwealth of Virginia, 2021). Based on these data, the rate of BMP implementation has decreased since 2015.

### 4.2.4 Direct Pay Initiative

DCR administers a Direct Pay Initiative for both Nutrient Management and Resource Management Plan Development and Certification. Both programs engage private consultants to improve BMP implementation on Virginia farms. The programs do not require consultants to respond to a Request for Applications (RFA). Instead, planners receive payments directly from DCR on a first-come, first-served basis until all available funding has been obligated. DCR indicated that direct payment is preferable to reimbursement because it is a simpler process and more efficient than going through SWCDs to process privately written NMPs. This model is also advantageous for providing a continuous opportunity for plan development as available funds are not tied up in contracts.

The Nutrient Management Direct Pay Program was established in 2019 as an alternative to funding nutrient management plans through the VACS Program. The program pays private Virginia-certified nutrient management planners to write, revise, and verify implementation of NMPs for individual operators. According to DCR, the program targets cropland within the Chesapeake Bay Watershed, with the stated goal of advancing progress towards meeting Virginia's WIP III objectives. Payment rates for plan development vary depending on the location of the farm, type of farm, and nutrient sources. The Nutrient Management Direct Pay Program is also available to planners writing acres outside the Bay if those acres are attached to the Resource Management Planning Program (RMP Direct Payment Initiative) and/or DCR's Litter Transport Program.

The initiative was expanded in 2020 with the announcement of the Resource Management Plan Development and Certification Direct Payment Initiative (RMP Direct Pay). RMP Direct Pay pays Virginia-certified private resource management consultants to develop RMPs for individual operations. According to the program guidelines available on DCR's website, the stated goal of the initiative is to increase the number of RMPs certified as implemented and reduce nutrient loss on agricultural lands, but is not specifically aimed at achieving WIP goals. The RMP initiative allows consultants to request pre-approval of funding to write RMPs and conduct

inspections and other activities related to RMP certification. After services are complete and the RMP has been approved by the appropriate SCWD, the RMP developer may submit an invoice and receive payment from DCR.

Based on information provided in Virginia's FY 2021 Chesapeake Bay and Virginia Waters Clean-Up Plan, the Direct Pay Initiative has funded NMP development for 94,631 acres, and RMP development for 2,365 acres of Virginia farmland.

### 4.2.5 Whole Farm Approach

DCR also developed a Whole Farm Approach Project, which began as a pilot program in 2019. This project aims to make BMP funding more accessible by allowing farms to submit a single cost-share application for a bundle of agricultural BMPs rather than seeking funding for each practice individually. Participating farms are required to have or obtain both an NMP and an RMP. At the time of EPA's assessment, the program has successfully facilitated RMP development and implementation in multiple Virginia counties. The RMP Highlights Report for Sept 1, 2020 - June 30, 2021, indicates that DCR anticipates that "nearly 900 acres of existing RMPs will be certified, and new RMPs will be written on more than 4,100 acres" among the Eastern Shore farms participating in the Whole Farm Approach.

# 5.0 Virginia and the Chesapeake Bay TMDL

As described in EPA's 2015 assessment report, EPA established the Chesapeake Bay Total Maximum Daily Load (TMDL) on December 29, 2010. The Chesapeake Bay TMDL assumes that the Bay states' Watershed Implementation Plans (WIPs) will be designed to ensure that all pollution control measures needed to fully restore the Bay and its tidal rivers are in place by 2025. The TMDL is supported by accountability measures, including short- and long-term benchmarks (WIPs and two-year milestones), a tracking and accountability system for jurisdiction activities, and federal contingency actions that can be employed, if necessary, to spur progress (EPA, 2010).

Virginia and the other Chesapeake Bay jurisdictions developed WIPs that detailed each jurisdiction's plan to meet the TMDL allocations for nitrogen, phosphorus, and sediment. The Phase I WIPs were submitted in late 2010 and largely formed the basis for the TMDL allocations. Phase II WIPs were finalized in March 2012.

Virginia's current Phase III WIP was finalized on August 23, 2019. The Phase III WIP was developed based on a midpoint assessment of progress made through 2017. The Phase III WIP was written to meet the State-Basin Planning Targets for nitrogen and phosphorus, issued in July 2018, and to address EPA's expectations for the Phase III WIP. In the Phase III WIP Virginia "...commits to have all practices and controls in place by 2025 to achieve the final Phase III WIP nutrient and sediment planning targets..."

Since EPA's 2015 assessment report was published, the Commonwealth has continued to set two-year milestones, submitting proposed commitments to EPA at the start of each milestone period. At the end of each milestone period, EPA evaluates the progress made toward the commitments.

EPA's Evaluation of Virginia's Phase III WIP (published in December 2019) indicated that the necessary pollutant reductions for Virginia's agricultural sector were 76% completed for nitrogen and 56% completed for phosphorus (EPA, 2019). Table 3 identifies the loadings (lbs/yr) of nitrogen, phosphorus, and sediment for 2009, 2017, and 2020; as well as the target agricultural loadings for 2020 and the 2025 WIP. The 2009-2020 percent reductions show changes in agricultural loading since the TMDL was established in 2010. According to the Chesapeake Assessment Scenario Tool (CAST), agricultural BMPs put in place between 2009 and 2020 in Virginia resulted in reduced nitrogen loading of 4%, reduced phosphorus loading of 9%, and reduced sediment loading of 21%. Table 3 also shows the percent reductions needed since 2009 to meet the 2025 WIP goals. According to CAST data, Virginia has made the following progress since 2009 towards achieving the agricultural WIP goals: 35% reduction for nitrogen, 36% reduction for phosphorus, and 50% for sediment (Chesapeake Progress, 2021). Comparing these observations with the progress made through 2020, Virginia must continue to reduce agricultural loading to achieve Virginia's 2025 goals.

Table 3. Simulated Virginia Agricultural Sector Target Loads by Progress or Target Year

| (lbs/year) | 2009<br>Progress | 2017<br>Progress | 2021 Progress | 2021 Target | 2025 WIP    | 2009-2021<br>Reduction<br>(%) | Reduction<br>Needed from<br>2009 Progress to<br>2025 WIP Goal<br>(%) |
|------------|------------------|------------------|---------------|-------------|-------------|-------------------------------|--|
|            |                  |                  |               |             |             |                               | ` '  |
| Nitrogen   | 20,242,036       | 20,588,641       | 19,402,218    | 14,564,093  | 13,144,607  | 4%                            | 35%  |
| Phosphoru  | 1,611,540        | 1,549,242        | 1,473,365     | 1,144,313   | 1,027,506   | 9%                            | 36%  |
| S          |                  |                  |               |             |             |                               |  |
| Sediment   | 481,254,31       | 445,151,46       | 379,718,128   | 286,979,492 | 238,410,785 | 21%                           | 50%  |
|            | 9                | 1                |               |             |             |                               |  |

Source: Phase 6 of the Watershed Model (Chesapeake Assessment Scenario Tool (CAST), https://www.chesapeakeprogress.com/clean-water/watershed-implementation-plans)

Virginia's Phase III WIP includes both programmatic and policy initiatives. For example, in Policy Initiative 26, Virginia has committed to pursue legislation specifying that if the implementation target of 85% of all cropland acres in the Chesapeake Bay watershed is not achieved by December 31, 2025, certain agriculture operations in the Chesapeake Bay watershed will be required to develop and implement Nutrient Management Plans in accordance with the regulations adopted pursuant to Va. Code § 10.1- 104.2. In addition, in Policy Initiative 27, Virginia committed to pursuing legislation specifying that if the implementation target for livestock stream exclusion is not achieved by December 31, 2025, all farms in the Chesapeake Bay watershed with livestock accessing perennial streams must provide exclusion measures (Commonwealth of Virginia, 2019). These WIP initiatives are further discussed in Section 7.5.

As described in EPA's 2015 report, EPA still collects data from Virginia regarding BMP implementation and land use. BMP implementation data is entered into data templates by the CBP jurisdictions and electronically made accessible to the EPA-CBPO via the CBP National Environmental Information Exchange Network (NEIEN) for upload into the Chesapeake Assessment Scenario Tool (CAST). The computer models maintained by the Chesapeake Bay Program partnership 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 2025 WIP implementation goals. The Commonwealth submitted a new Verification Quality Assurance Project Plan for Managing and Reporting BMP Data to the U.S. EPA - Chesapeake Bay Program Office, revised September 30, 2019.

In evaluating whether the Commonwealth's CAFO and AFO programs are aligned with meeting the Chesapeake Bay TMDL and Phase III WIP commitments, EPA focused its assessment on the BMPs listed below, which are the agricultural conservation practices in Virginia's Phase III WIP that are responsible for the greatest anticipated nutrient reductions. This assessment report evaluates how Virginia's regulatory and non-regulatory programs require or facilitate implementation of these nine BMPs.

- Animal Waste Management Systems
- Soil Conservation and Water Quality Plans
- Nutrient Management
- Cover Crops
- Tillage Management

<sup>&</sup>lt;sup>1</sup> Operations larger than 50 acres that apply fertilizer, manure, sewage sludge, or other compounds containing nitrogen or phosphorus to support plant growth would be subject to the requirement.

- Forest Buffers
- Grass Buffers
- Denitrifying Ditch Bioreactors
- Livestock Streamside Exclusion Measures (e.g., fencing)

# 6.0 Virginia's Animal Agriculture WIP BMPs

Virginia is relying on both regulatory and voluntary programs to meet the 2025 WIP goals pertaining to animal agriculture operations. Table 4 summarizes EPA's findings on the BMPs that may be required or implemented through each of Virginia's programs along with an estimated number of animal operations subject to each program. The BMPs listed as "required" are directly required to be implemented by the program. For the programs that list certain BMP as "may be included/required", these programs require implementation of a plan that would incorporate that BMP if appropriate to the facility. The estimated statewide facility universe for the voluntary programs is based on Virginia's estimate of 2,003 AFOs, as well as the estimates of 25,483 Virginia farms with livestock and poultry and 43,225 Virginia farms total (USDA, 2019).

Table 41. WIP Phase III BMPs Responsible for Greatest Anticipated Nutrient Reductions as Implemented by Virginia Programs

| Viigilia Piografiis  | NMP                       | VPA AFO and  | VPDES CAFO   |                           |                              |                           |
|--|---------------------------|--|--|---------------------------|------------------------------|---------------------------|
|  | Program                   | PWM Program  | Program  | RMP Program               | Small AFO Strategy           | ASA Program               |
| Lead Agency  | DCR                       | DEQ  | DEQ  | DCR                       | DEQ and VDACS                | VDACS                     |
| Estimated Facility Universe  | 5,532<br>farms            | 1,010<br>(permitted)                                 | 10 (permitted)                                       | Up to 43,225*             | 996                          | Up to<br>43,225*          |
| Animal Waste<br>Management<br>Systems  | May be included/ required | If onsite,<br>requirement to<br>properly<br>maintain | If onsite,<br>requirement to<br>properly<br>maintain | May be included/ required | May be included/<br>required | May be included/ required |
| Soil Conservation<br>and Water<br>Quality Plans  |                           |  |  | Required                  | May be included/<br>required | May be included/ required |
| Nutrient<br>Management   | Required                  | Required   | Required   | Required                  | May be included/<br>required | May be included/ required |
| Cover Crops  | May be included/ required |  |  | May be included/ required | May be included/<br>required | May be included/ required |
| Tillage<br>Management  | May be included/ required |  |  | May be included/ required | May be included/<br>required | May be included/ required |
| Forest Buffers   | May be included/ required |  |  |                           | May be included/<br>required | May be included/ required |
| Grass Buffers  | May be included/ required | May be<br>included/<br>Required                      | May be included/ required                            | May be included/ required | May be included/<br>required | May be included/ required |
| Denitrifying Ditch Bioreactors  Not a reportable BMP for credit until it becomes a release status BMP in the NEIEI |                           |  | us BMP in the NEIEN no                               | omenclature.              |                              |                           |
| Livestock<br>Streamside<br>Exclusion<br>Measures   | May be included/ required |  | May be<br>included/<br>required                      | Required                  | May be included/<br>required | May be included/ required |

<sup>\*</sup>Not limited to animal agriculture operations.

Table 5 summarizes Virginia's 2017 progress toward meeting the 2025 implementation goals, as reported by Virginia to the Chesapeake Bay Program partnership, for the 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 52. Virginia's Progress Toward 2025 BMP Implementation Goals

| ВМР                                  | Units    | 2009      | 2017      | 2021 Progress | Additional         | 2025 Goal |
|--------------------------------------|----------|-----------|-----------|---------------|--------------------|-----------|
|                                      |          | Progress  | progress  |               | Units<br>Needed to |           |
|                                      |          |           |           |               | Achieve            |           |
|                                      |          |           |           |               | 2025 Goal          |           |
| Animal Waste                         | Animal   |           | 1,127,337 |               |                    |           |
| Management                           | Units    | 1,448,824 | 1,127,337 | 481,003       | 1,747,897          | 2,228,900 |
| Systems                              | Offics   |           |           |               |                    |           |
| Soil Conservation                    |          |           |           |               |                    |           |
| and Water Quality                    | Acres    | -         | -         | 7,250         | 1,176,210          | 1,183,460 |
| Plans                                |          |           |           |               |                    |           |
| Nutrient                             | Acres    | 543,549   | 591,528   | 584,909       | 366,486            | 951,395   |
| Management Nutrient                  |          |           |           |               |                    |           |
| Management -                         | Acres    | _         | _         | 207,951       | 550,523            | 758,474   |
| Enhanced                             | Acres    |           |           | 207,331       | 330,323            | 750,474   |
| Cover Crops -                        |          |           | 135,187   |               |                    |           |
| Traditional                          | Acres    | 77,290    | ,         | 153,488       | 230,908            | 384,396   |
| Cover Crop –                         | Acros    | 24 200    | 21,088    | 20.070        | 10,053             | 39,124    |
| Commodity                            | Acres    | 24,398    | 22,766    | 29,070        |                    | 39,124    |
| Cover Crop -                         |          |           |           |               |                    |           |
| Traditional with                     | Acres    | -         | 62        | 1,518         | 18,520             | 20,038    |
| Fall Nutrients                       |          |           | 674.007   |               |                    |           |
| Tillage                              | Acres    | 653,921   | 674,937   | 634,908       | -                  | 608,044   |
| Management                           | Acres in |           |           |               |                    |           |
| Forest Buffers                       | Buffers  | 12,248    | 5,433     | 3,592         | 18,373             | 21,965    |
|                                      | Acres in |           | 5,668     |               |                    |           |
| Grass Buffers                        | Buffers  | 2,542     | 2,200     | 5,303         | 18,755             | 24,058    |
| Agricultural                         |          | 1 511     | 022       | 244           | 162.042            | 164 196   |
| Drainage                             | Acres    | 1,511     | 832       | 244           | 163,942            | 164,186   |
| Denitrifying Ditch                   | pounds   |           |           |               |                    |           |
| Bioreactors                          | of       | -         | -         | -             | 300,000            | 300,000   |
|                                      | nitrogen |           |           |               |                    |           |
| Forest Buffer-                       | Acres in |           |           | 474           | 26.242             | 26.222    |
| Streamside with                      | Buffers  | -         | -         | 171           | 26,219             | 26,390    |
| Exclusion Fencing Grass Buffer- with | Acres in |           | 8,857     |               |                    |           |
| Exclusion Fencing                    | Buffers  | 5,262     | 0,037     | 17,147        | 28,619             | 45,766    |
| Exclusion I Chichig                  | Dancis   | 1         |           | 1             | I                  | İ         |

Source: Chesapeake Bay Program, 2020. Chesapeake Assessment Scenario Tool (CAST) Version 2019. Chesapeake Bay Program Office, Last accessed July 2022

Virginia requires that all permitted operations properly manage and store the animal waste in accordance with the VPA and VPDES regulations and permits. In addition, Animal Waste Management Systems may be required in an ASA Plan and may be included in the voluntarily implemented NMPs, when needed to address water quality issues. As shown in Table 5, as of 2021, Animal Waste Management System implementation, or reported implementation, has significantly decreased since the beginning of the Chesapeake Bay TMDL. To meet the 2025 goal, Virginia will need to increase implementation of Animal Waste Management Systems on unpermitted operations. Alternatively, Virginia could revise AFO thresholds to capture additional operations under the VPA AFO permit program, though this would require a change in state law.

Policy Initiative 20 of the Phase III WIP commits the VACS Program to sustain the 2017 level of tillage management practices, increase development of conservation plans (including RMPs and soil conservation plans) to cover 70% of all agricultural lands, and increase cover crop levels to 70% of available cropland acres. Tillage management and cover crops may be included in NMPs for operations permitted under the VPA or VPDES permit programs or required as part of ASA Plans when needed to address nutrient management or soil erosion, or both. Soil Conservation and Water Quality Plans may be included or required as part of ASA Plans, RMPs, or through the Small AFO Evaluation and Assessment Strategy. Based on the data in Table 5, Virginia must increase cover crop implementation and coverage of soil conservation and water quality plans to meet the 2025 goal included in the Phase III WIP. As shown in Table 5, Virginia reports achieving its WIP goal for tillage management in 2009 and 2017. Note that tillage management is an annual management BMP and must be verified annually.

NMPs are required for all VPA-permitted operations – all operations have current NMPs. NMPs are also required at the 10 operations covered by VPDES permits. NMPs are also required for any farmer who participates in the voluntary RMP program, and NMPs may be a requirement of a required ASA plan. The Phase III WIP relies heavily on increased NMP implementation. Based on the data in Table 5, as of 2021, NMPs were implemented on 62% of the acres required to meet the 2025 goal. Virginia must increase NMP implementation under permits and voluntary programs to meet the 2025 goal included in the Phase III WIP.

Virginia must increase implementation of grass and forest buffers to meet the 2025 goal included in the Phase III WIP. Policy Initiative 31 of the Phase III WIP commits Virginia to increase grass and forest buffers through the Conservation Reserve Enhancement Program. The Phase III WIP noted that forest and grass buffers next to streams and other state waters are very cost-effective for reducing nonpoint source nutrient runoff. "Consequently, the state match percentage for U.S. Department of Agriculture CREP buffer projects has been increased from 25% match to 35% match in fiscal year 2020 to encourage additional signup" (Commonwealth of Virginia, 2019). For state fiscal year 2023, the state match has been increased from 35% to 50%. Forest buffers may be included in NMPs for operations permitted under the VPA or VPDES permit programs or required as part of ASA Plans.

Buffer zones, with and without a permanent vegetated buffer, between waste application sites and surface water courses are required for all VPA- and VPDES-permitted facilities and may be included in voluntarily implemented NMPs or required as part of ASA Plans. The VPA and VPDES Animal Waste Program Regulations and permits define vegetated buffer as "a permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface waters."

- The VPA Regulation and General Permit for Animal Feeding Operations and Animal Waste Management requires minimum buffer zones where waste shall not be land applied at waste application sites including a buffer zone of 100 feet (without a permanent vegetated buffer) or 35 feet (if a permanent vegetated buffer exists) of surface water courses. (9VAC25-192-70.B.13.c.)
- The VPA Regulation and General Permit for Poultry Waste Management states that poultry waste shall
  not be land applied within buffer zones. The minimum distances for surface waste courses are 100 feet
  (without a permanent vegetated buffer) or 35 feet (if a permanent vegetated buffer exists) of surface
  water courses. (9VAC25-630-50.C.10.c.)
- Any individual permit written by DEQ for an AFO or CAFO includes identical buffer zone distances for land application. All the VPDES CAFO Individual Permits which cover operations that land apply include the same buffer zone distances.

These buffer zones are included in the Virginia Nutrient Management Standards and Criteria, July 2014 revision, as setback distances for manure applications in plans written as part of a VPA or VPDES permit.

Policy Initiative 8 of the Phase III WIP commits Virginia to expanding voluntary use of innovative BMPs and agricultural drainage management such as bioreactors. The Phase III WIP identifies the final nitrogen reduction for denitrifying ditch bioreactors as 300,000 pounds of nitrogen or 164,000 acres if drainage management for Virginia's Chesapeake Bay watershed. However, none of Virginia's animal agriculture programs evaluated, require or encourage implementation of this BMP. The CBPO reports that, to date, ditch bioreactors are primarily used as part of USDA and academic research projects.

Livestock streamside exclusion measures may be included in NMPs for operations permitted under the VPA or VPDES permit programs or required as part of ASA Plans. The Phase III WIP relies heavily on increased implementation of livestock stream exclusion practices. As shown in Table 5, as of 2017, streamside grass buffers with exclusion fencing were implemented on 24% of the total acres required to meet the 2025 goal, and no streamside forest buffers with exclusion fencing had been implemented. Virginia must increase implementation of livestock stream exclusion practices to meet the 2025 goals included in the Phase III WIP.

As reflected in EPA's 2015 assessment report, Virginia is still relying heavily on voluntarily implemented BMPs to meet the 2025 WIP implementation goals. Therefore, Virginia's voluntary programs, such as the RMP Program and Small AFO Evaluation and Assessment Strategy, are important in achieving Virginia's animal agriculture pollution reduction goals set forth in the WIP. In addition, the Phase III WIP places considerable emphasis on increasing voluntary NMP implementation and implementation of stream fencing on pastures.

Since 2015, Virginia has made changes to cost-share reimbursement programs and established a new Direct Pay Initiative, Whole Farm Approach, and increased tax credits under the Virginia BMP Tax Credit Program, all of which may help incentivize more farmers to voluntarily implement these BMPs. Virginia's 2024-2025 milestones set a goal of getting Nutrient Management Core Plans on 800,000 acres and reaching 650,000 cumulative acres under soil conservation and water quality plans. If Virginia meets these milestones, it will have achieved approximately 84% of its Phase III WIP commitments for Nutrient Management Plans and approximately 55% of its target acres for soil conservation and water quality plans.

At the time of EPA's 2015 assessment, it was unclear whether Virginia's important voluntary programs would help ensure animal agriculture reductions set forth in the WIP are met. In addition, the RMP program was not well established and there was uncertainty as to how many operations would voluntarily sign up. As stated in Section 10.1 of this report, as of June 30, 2021, there were 512 RMPs in the Chesapeake Bay drainage, 72 plans

outside the Chesapeake Bay drainage and 18 plans in both drainages. These 582 plans cover 130,779 acres nearly 35,000 of which are within the Chesapeake Bay watershed (DCR, 2021a).

Virginia is implementing the Small AFO Strategy to address water quality concerns related to discharges or potential discharges on unpermitted operations. Since the inception of the program in 2012, Virginia has completed 996 AFO evaluations under the Small AFO Strategy. Of these 996 evaluations, 235 onsite assessments were performed. As stated in EPA's 2015 assessment, because the Small AFO Strategy is not designed to document all voluntary BMPs present on farms, or those BMPs installed in anticipation of an assessment, EPA was unable to determine the full scope of BMP implementation that has resulted from implementation of the Small AFO Strategy.

BMP tracking has improved since EPA's 2015 assessment. BMPs implemented through NMPs and RMPs and which receive credit under the WIP are tracked on separate modules in DCR's Conservation Application Suite. Although tracking BMPs installed voluntarily (without government assistance) is challenging, Virginia continues to rely heavily on voluntary programs to achieve the agricultural nutrient and sediment reductions in the Phase III WIP. Virginia is hopeful that incentivization through new or revised funding mechanisms will help increase BMP implementation on unpermitted farms. Additionally, Virginia contracted with the Virginia Cooperative Extension to conduct a comprehensive producer survey in 2021 of voluntary BMP implementation in the Commonwealth's portion of the CBW (VASWCD, 2022). Results from this survey were included in Virginia's 2020-2021 progress report to the CBPO.

Virginia passed legislation in 2020 (later amended in the 2023 General Assembly session) that will take effect in 2028 if nutrient management and livestock stream exclusion goals are not met. If Virginia is unable to meet its implementation targets for NMPs and livestock stream exclusion by December 31, 2025, certain agricultural operations in the Chesapeake Bay watershed will be required to develop and implement NMPs and any person who owns property in the Chesapeake Bay Watershed on which 20 or more bovines are pastured shall install and maintain stream exclusion practices sufficient to exclude all such bovines from any perennial stream in the watershed. Va. Code § 62.1-44.123. (For contingent effective date, see Va. Code § 62.1-44.119:1).

Additional mandatory BMPs that Virginia may consider include additional conservation plans and vegetated buffers on cropland. Virginia could also increase mandatory NMPs by lowering the VPA permit size thresholds to increase the number of operations required to obtain VPA permits and implement NMPs, which would require a change in the Code of Virginia.

# 6.1 Virginia's Animal Agriculture WIP BMPs - Observations

- Participation in the Virginia BMP Tax Credit Program requires an NMP approved by the local SWCD.
- The ASA Program and Small AFO Strategy may require any of the BMPs responsible for the greatest anticipated nutrient reductions in the Phase III WIP, based on the operation's impact or potential impact to water quality.
- Virginia is relying heavily on programs with voluntary participation, such as the RMP program, Small AFO Strategy, the Virginia Agriculture Cost-Share (VACS) program, and the Virginia BMP Tax Credit Program to increase BMP implementation to meet Virginia's WIP goals.
- **Recommendation:** VA should consider implementing data management SOPs to document processes. Policy Initiative 8 of the Phase III WIP commits Virginia to expanding voluntary use of innovative BMPs and bioreactors. The CBPO reports that, to date, ditch bioreactors are primarily used as part of USDA and academic research projects. However, none of Virginia's animal agriculture programs evaluated require or encourage implementation of this BMP.

| • | Future reductions in nutrient and sediment loading will need to come from voluntary BMP installation at unpermitted operations, additional BMP requirements for permitted operations, or an increase in the number of operations that are required to implement BMPs or obtain permits. Amending the animal type thresholds which require an AFO owner to obtain a permit would require a change in the Code of Virginia. |
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# 7.0 Nutrient Management Program

DCR's role in Virginia's Nutrient Management Program has not changed since EPA's 2015 assessment. DCR is responsible for developing regulations and policy, reviewing and approving NMPs, and providing nutrient management planner certification and training. Virginia's <a href="Nutrient Management Training and Certification Regulations">Nutrient Management Training and Certification Regulations</a> (4VAC50-85), effective November 23, 2014, contain requirements for nutrient management planner training and certification. As noted in EPA's 2015 assessment report, the regulations also contain the standards for information included in an NMP written by a certified planner. The requirements for DCR-certified planners have not changed since EPA's 2015 assessment.

During the interview, DCR staff indicated that, as identified in EPA's 2015 assessment, DCR nutrient management planners still write approximately 90 percent of all NMPs for livestock operations, while private sector certified nutrient management planners complete the other 10 percent.

As described in EPA's 2015 assessment report, DCR reviews and approves all NMPs, including NMPs for animal operations. Animal operation NMPs are submitted to and reviewed by one DCR staff member. In order for DCR to approve an NMP, the NMP must be developed in accordance with the Virginia Nutrient Management Standards and Criteria, revised in July 2014, as well as technical guides, academic research, and other resources. DCR's review typically takes around two weeks depending on the number of deficiencies identified in the plan. During the review process, the DCR reviewer ensures that the planner is following the regulations in developing the plan. The reviewer does not typically visit the operation as part of the review. However, the reviewer may go onsite to assist the planner in addressing unique management situations that will be incorporated into the NMP. In addition, DCR performs third-party verification of NMPs developed by DCR planners when a plan is renewed, or changes are needed. According to DEQ, DEQ is coordinating with DCR staff regarding the NMP verification program to ensure that verification of BMP implementation is assessed appropriately.

Table 6 presents findings from EPA's 2015 assessment report and how the Commonwealth addressed the findings between the 2015 and 2021 assessment reports.

Table 6: VA Actions to Address Findings from 2015 Assessment – Nutrient Management Plan

| 2015 Finding   | VA Actions to Address Findings                                  |
|--|---|
| In FY2014, DCR had approximately 5 FTEs dedicated to | Unchanged since the 2015 assessment.                            |
| the Nutrient Management program and a budget of      |   |
| \$1,417,718 for programmatic support for SWCD        |   |
| programs and \$32,107,924 for agricultural BMP       |   |
| support. DCR also received EPA funding through the   |   |
| 319 Non-Point Source program and the Chesapeake      |   |
| Bay Implementation Grant (CBIG) totaling \$1,073,500 |   |
| in support the nutrient management program and       |   |
| \$538,000 in support of the SWCDs.                   |   |
| Virginia's Nutrient Management Program only          | Based on data current as of May 26, 2022, Virginia reports that |
| requires NMPs at farms covered by VPDES and VPA      | all VPA- and VPDES- permitted facilities have approved NMPs.    |
| permits, which currently cover 1,037 farms.          |   |
| Approximately 945 of the 1,037 VPA-permitted         | DCR notes that it is challenging to obtain NMP numbers for      |
| operations have current NMPs, and an additional 97   | unpermitted dairies since very few submit NMPs for review and   |
| NMPs have been developed for unpermitted dairies.    | approval. Virginia's FY 2021 Chesapeake Bay and Virginia        |
| As a result, NMPs currently cover approximately 56%  | Waters Clean-Up Plan also notes that there are "376 dairies in  |

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|--|--|
| of all 1,860 Virginia AFOs, approximately 4% of all 26,555 Virginia farms with livestock and poultry, and  | Virginia, a reduction from more than 500 in recent years."   |
| approximately 2% of all 46,030 Virginia farms.   |  |
| NMP noncompliance was observed at approximately 20% of DEQ's VPA permit inspections.   | Of those VPA-permitted facilities inspected in SFY2019-2020, DEQ identified NMP non-compliance at 13 (approximately 21%) VPA-permitted AFOs and at 100 (approximately 20%) VPA-permitted confined poultry feeding operations. Of the 38 VPA AFO GP permitted facilities inspected in the state's portion of the CBW SFY2019-2020, DEQ reports none were out of compliance with permit requirements.  |
| VADEQ has yet to issue any VPDES CAFO permits, so  | VADEQ issued 11 VPDES CAFO permits between 2015 and  |
| there are no VPDES CAFO NMPs yet.  | 2021. During this time, one operation closed, and the permit was terminated bringing the total to 10 operations covered by VPDES CAFO individual permits.  |
| Virginia is trying to increase the number of NMPs at unpermitted operations by:  a. Requiring NMPs for some VA or federal cost-share programs.  b. Requiring NMPs for any operation who participates in Virginia's Resource Management Plan program.  c. Developing a nutrient management training program for small unpermitted dairies.  d. Making \$152,000 in funding available for the development of NMPs at unpermitted dairies and confined beef operations. | NMPs have been implemented at unpermitted farms through the RMP program. DCR's questionnaire response specifies that, during FY2020, there were 5,532 active NMPs (developed by DCR and private planners), which represents 12.8% of all Virginia farms and 22% of Virginia farms with livestock and poultry. Therefore, since the 2015 assessment, NMPs increased from 4% to 22% for all Virginia farms with livestock or poultry; and NMPs increased from 2% to 12% for all Virginia farms.  During the interview DCR noted that it is difficult for DCR to determine the number of NMPs unpermitted dairies. DCR indicated that very few NMPs are submitted for review and approval outside of DEQ permit required NMPs.  Under a cooperative agreement signed in 2016, Virginia Tech and Virginia Department of Conservation created the Small Farms Nutrient Management Program in response to the development of the Chesapeake Bay TMDL and WIP goals. The program provides NMP planning, technical assistance, soil testing, manure sampling, nitrate tests, equipment calibration, fertilization and lime recommendations, and water quality agreement program support to farms that operate on less than 10,000 square feet and fewer than 400 acres or dairy operations with fewer than 200 animal units. According to staff interviews, there are approximately 400 unpermitted dairy operations in the state of VA and it is estimated that approximately half of those unpermitted operations have a NMP in place. |
| Virginia DCR reviews 100 percent of NMPs for VPA-<br>and VPDES-permitted operations.   | DCR reviews and approves all NMPs, including NMPs for animal operations. Animal operation NMPs are submitted to and  |
| Virginia's Nutrient Management program requires one or two of the six priority BMPs.   | reviewed by one DCR staff member.  DCR's questionnaire response indicates that NMPs may include or require seven of the nine BMPs selected by EPA for evaluation in this assessment, but not all BMPs are included or required in all NMPs.  |

# 7.1 Small Farms Program NMP

Virginia Tech (VT) and DCR created the Small Farms Nutrient Management Program in response to the development of the Chesapeake Bay TMDL and WIP goals. During the reporting period Virginiaestimated that there were approximately400 unpermitted dairy operations in the state of VA and it is estimated that approximately half of those unpermitted operations have a NMP in place.

According to staff interviews, The Small Farms Nutrient Management program is currently funded by EPA and the VA DEQ under section 319 grant agreement to the VA DCR. Program technicians work closely with DCR, NMP plan writers, Conservation districts, and cooperative extension. As far as staff are aware, funding is stable through 2025.

DCR staff has sent letters to the approximately400 unpermitted operations about the NMP, including importance of BMP adoption, and how it helps VA meet the requirements for the TMDL. DCR staff follow up with impromptu farm visits to engage directly with farmers about their interest in developing an NMP. DCR staff estimated that every farm in the western part of the state has received a visit from DCR. Small Farms outreach staff also participate in field days, the Virginia Farm Show, and Cattleman's association events. They estimate that they host 3-4 events per year. Small farm outreach staff maintain relationships with farmers by following up with yearly visits. After an initial visit, farmers may participate in soil sampling and eventually write a NMP with technical assistance from plan writers. Farmers are required to have NMP to participate in some cost-share programs and the USDA Dairy Margin Protection Program. NMP writers may keep track of how many plans they have but staff are uncertain if and how that number is reported. Conservation District staff may also have access to specific numbers based on participation in cost-share programs.

# 7.2 Facility Universe

NMPs are required for all operations covered under VPDES CAFO and VPA AFO Individual Permits, as well as those under VPA AFO or VPA Poultry Waste Management General Permits. NMPs may also be implemented by operations not under a VPA or VPDES permit. NMPs are required for any farm electing to participate in the voluntary RMP Program. NMPs may be implemented at other animal agriculture operations through an ASA Plan or implemented by an operation participating in a Virginia or federal cost-share program.

The 2025 targets for nutrient management implementation in the agriculture sector (not specific to animal operations) in the Phase III WIP are 951,395 acres for Nutrient Management – Core Plans and 758,474 acres for Nutrient Management – Enhanced. EPA's evaluation of Virginia's 2018-2019 and 2020-2021 milestones report specifies that the 2020-2021 milestone targets for nutrient management were 675,000 acres for Nutrient Management – Core Plans, and at least 100,000 acres for Nutrient Management – Enhanced (EPA, 2020). As stated in DCR's response to the questionnaire, within the Chesapeake Bay Watershed in Virginia, 643,770 acres are covered under NMPs (DCR, 2021b). As discussed below, the total acreage covered under NMPs includes most facilities required to implement NMPs through permit programs as well as voluntary implementation of NMPs by unpermitted facilities.

The data provided by DCR and DEQ and publicly available data is insufficient to evaluate where NMP resources need to be focused to ensure Virginia meets the nutrient management targets in the Phase III WIP. Below is a summary of the data provided.

As stated in DCR's responses to the questionnaire, as of FY2020, 907 plans have been developed (but not all approved) by DCR planners for permitted and unpermitted farms with livestock and poultry. This equates to approximately 12.8% of all Virginia farms statewide (5,532 plans developed by DCR and private planners out of 43,225 total farm operations listed in the 2017 USDA Ag Census) being covered by NMPs. Within the Chesapeake Bay Watershed in Virginia, 643,770 acres are covered under NMPs (DCR, 2021b).

Table 7 shows data provided by DEQ in the questionnaire responses indicating the number of facilities covered under VPDES CAFO individual permits, the VPA AFO general permit, and the VPA Poultry Waste Management general permit. These 1,021 facilities constitute approximately 46% of all 2,190 Virginia AFOs². NMPs may also be implemented by operations not under a VPA or VPDES permit. NMPs may be implemented at other animal agriculture operations through an RMP, an ASA Plan, or implemented by an operation participating in a Virginia or federal cost-share program. Table 7 also compares the number of permitted facilities (provided by DEQ) and the number of permitted facilities with approved NMPs (provided by DCR)). In addition, DCR indicated that one unpermitted poultry AFO and one unpermitted swine AFO have approved NMPs. Based on the data shown below, current as of May 26, 2022, DEQ reports that all VPA- and VPDES- permitted facilities have approved NMPs.

Table 7: NMPs in VPA- and VPDES-permitted Facilities

| Program                      | Permitted Facilities with NMPs | Permitted Facilities |
|------------------------------|--------------------------------|----------------------|
| VPDES CAFO                   | 10                             | 10                   |
| VPA AFO                      | 112                            | 112                  |
| VPA Poultry Waste Management | 899                            | 899                  |
| VA Total                     | 1,021                          | 1,021                |

As noted above, DCR staff indicated that DCR nutrient management planners write approximately 90 percent of all NMPs for livestock operations. During the 2022 interview, DCR noted that very few NMPs are submitted to DCR for review and approval outside of those for VPDES- and VPA-permitted operations. Data provided from DCR's tracking system listed 126 NMPs for dairy facilities, 140 plans for beef facilities, and 641 plans for poultry facilities developed by DCR planners as of FY2020 (this includes NMPs for both approved and unapproved plans; and for permitted and unpermitted facilities). DCR noted that this number may not account for all the plans as some planners were still transitioning to DCR's new NMP module (discussed in section 7.3). Based on the data provided by DCR, approximately 12% (125 out of 1,048) of dairy facilities have NMPs developed by DCR planners.

In addition, Virginia wrote 77 new NMPs for small farms in SFY2018-2019 which exceeded the goal of 25 new NMPs for small farms each year. Virginia also developed 18 NMPs for beef operations in SFY2018-2019 (EPA, 2020).

<sup>&</sup>lt;sup>2</sup> DEQ's questionnaire response indicated that 120 facilities meet the AFO definition as defined in 9VAC25-192-10 (VPA AFO GP); 893 facilities meet the "confined poultry feeding operation" definition as defined in 9VAC25-630-10 (VPA PWM GP); 183 facilities meet the Large CAFO definition as defined in 9VAC25-31-10; and 996 Small AFOs have been handled through the Small AFO Strategy.

### 7.3 Resources Allocated

DCR's response to the questionnaire indicated that there have been no changes to the number of program FTEs since EPA's 2015 assessment. The Department is considering a marginal increase in staffing. In addition, Virginia's FY 2021 Chesapeake Bay and Virginia Waters Clean-Up Plan specifies that DCR has dedicated two certified nutrient management staff to work with small dairies and other small farms to develop Nutrient Management Plans.

# 7.4 Data Systems

As discussed in the interview with DCR staff, DCR developed a nutrient management planning module within its Conservation Application Suite. The Conservation Application Suite software includes nutrient management planning, BMP tracking, conservation planning, and resource management planning modules. There is also a mapping component which crosses over the modules. A planner can recommend a BMP and the components of the BMP can be mapped within the software. DCR share information with DEQ on BMP implementation by generating reports from the module.

The nutrient management planning module went through an initial phase of beta testing before being more broadly used in 2020. DCR planners use this module for NMP development and for BMP tracking and reporting purposes. Private planners are not required to use the module. SWCDs also enter observations noted during inspections directly into the module.

The module does not alert DCR of NMPs coming up for renewal. However, DCR uses an Access database to track NMP renewal and send out letters to farms whose NMPs are coming up for renewal. The planning module is also functionally limited in other areas of NM planning, such as P-Index and soil P management. NM planners may still be continuing to rely on the previous NM planning software developed by VT to support these planning functions.

# 7.5 Compliance and Enforcement

DEQ is responsible for conducting nutrient management compliance inspections at VPDES- and VPA-permitted facilities. To determine compliance with the VPDES and VPA-permits, DEQ reviews the facility's NMP and associated documentation.

DEQ uses a risk-based inspection strategy and inspects each VPDES and VPA permitted facility approximately once every three years. This frequency can be increased or extended to once every four years based on facility type, compliance history, process complexity, agency priorities, environmental sensitivity, or citizen concerns. While onsite, DEQ inspectors review the NMP and manure monitoring records. If applicable, inspectors also review a facility's soil or groundwater monitoring records, land application records, waste transfer records, Farm Operating Manual, and annual reports. DEQ's questionnaire response indicates that, in SFY2019-2020, DEQ inspected 5 of 10 operations covered by the VPDES- CAFO IP (50%), 61 of 119 operations covered under the VPA-AFO GP (51%), and 487 of 887 operations covered under the VPA-PWM GP (55%). DEQ also performed an

inspection on the 1 operation covered under the VPA-AFO IP, as well as an additional 21 inspections of unpermitted AFOs.

For permitted operations, DEQ assesses compliance using terms stated in the operation's permit and NMP. Noncompliance is identified through file reviews as well as on-site inspections and is handled using DEQ's Compliance Auditing Manual.

Because a permitted operation's NMP is incorporated into and enforceable through its permit, operations that are out of compliance with the NMP are also out of compliance with the permit. Of those VPA-permitted facilities inspected across the Commonwealth in SFY2019-2020, DEQ identified NMP non-compliance at 13 (approximately 21%) VPA-permitted AFOs and at 100 (approximately 21%) VPA-permitted confined poultry feeding operations. DEQ reported that the most common types of NMP non-compliance identified at these operations are expired NMPs and expired litter analyses. 18 warning letters and 4 notices of violation were issued during this inspection cycle. All operations where NMP non-compliance was identified resolved the non-compliance issues within the specified timeframe. None of the non-compliant operations were in the CBW. DEQ noted that they do not have the authority to assess NMP compliance at unpermitted AFOs.

# 7.6 WIP Implementation Goals

The Phase III WIP includes goals seeking implementation of NMPs on 85% of all cropland acres in the Chesapeake Bay watershed. Virginia committed to pursuing legislation specifying that if this implementation target of 85% is not achieved by December 31, 2025, "agriculture operations in the Chesapeake Bay watershed larger than 50 acres that apply fertilizer, manure, sewage sludge, or other compounds containing nitrogen or phosphorus to support plant growth must develop and implement Nutrient Management Plans in accordance with the regulations adopted pursuant to § 10.1-104.2."

The Phase III WIP also includes goals seeking exclusion of livestock from all perennial streams in the Chesapeake Bay watershed. Virginia committed to pursuing legislation "...specifying that if the implementation target for livestock stream exclusion is not achieved by December 31, 2025, that all farms in the Chesapeake Bay watershed with livestock accessing perennial streams must provide exclusion measures."

The Virginia General Assembly 2020 session, House Bill 1422 and Senate Bill 704 Chesapeake Bay watershed implementation plan initiatives passed and were signed by the Governor in June 2020. This legislation was amended in the 2023 General Assembly session. The legislation included regulatory actions that will take effect in 2028 if the required implementation is not met by December 31, 2025. DCR also developed the , published in April 2021, which discusses the Commonwealth's plan for achieving these goals. The plan emphasizes increasing financial incentives for NMP development and implementation of livestock stream exclusion practices as well as outreach to small farmers.

As discussed in Section 4.2.1 of this report, DCR continues to fund grants for 100% of the cost of implementing livestock stream exclusion practices to cost-share applicants. Once all stream exclusion practices are installed, approximately 5.5 million linear feet of stream bank will be protected and nearly 64,000 animal units in the Chesapeake Bay watershed will be excluded. (Commonwealth of Virginia, 2021).

EPA's evaluation of Virginia's 2022-2023 milestones and 2024-2025 milestone commitments specifies that the 2024-2025 milestone targets for nutrient management were 800,000 acres for Nutrient Management – Core Plans, and 550,000 acres for Nutrient Management – Precision Rate Nitrogen and Nutrient Management – Precision Timing Nitrogen (EPA, 2024). The 2025 targets in the Phase III WIP are 951,395 acres for Nutrient Management – Core Plans and 426,452 acres for Nutrient Management – Enhanced.

As stated above, according to DCR, 643,770 acres are covered under NMPs within the Chesapeake Bay Watershed in Virginia, as of August 2021. This level of implementation does not meet the 2020-2021 milestone targets. DCR must continue to incentivize development and implementation of NMPs, including at small, unpermitted facilities.

In addition, the Phase III WIP includes goals for implementing a variety of BMPs, including those identified by EPA for evaluation in this assessment. DCR stated in the questionnaire responses that, of the BMPs selected by EPA for evaluation in this assessment, the following may be included or required in a particular NMP, but not all are included or required in all NMPs.

Animal Waste Management Systems
Nutrient Management
Cover Crops
Tillage Management
Forest Buffers
Grass Buffers
Livestock Streamside Exclusion Measures

Based on DCR's questionnaire responses, neither Soil Conservation and Water Quality Plans nor Denitrifying Ditch Bioreactors are required or included in NMPs. During the interview, DCR indicated that the BMPs most implemented through NMPs include Animal Waste Management Systems, nutrient management, cover crops, tillage, and buffers.

In the questionnaire response, DCR stated that one major challenge the Department is facing in implementing the Phase III WIP is in the marketing of available funding to eligible agricultural producers. DCR planned to develop a marketing plan; however, DCR staff indicated during the interview that, due to staff turnover, the marketing plan has not been completed.

DCR does, however, perform outreach and marketing of the nutrient management program. DCR staff explained that the primary effort of marketing is conducted through the SWCD staff due to their direct contact with farmers. Also, DCR developed a Conservation Marketing Warehouse, which is a tool for SWCDs to share and promote BMPs, including Nutrient Management Plans, livestock stream exclusion, conservation buffers, continuous cover crops, and continuous no-till with producers. DCR also hopes that this will ensure consistency in program implementation throughout the state.

In addition, DCR's questionnaire response specifies that outreach and training occur through DCR's cooperation with Virginia Tech in teaching a Nutrient Management Class in the University's Agricultural Technology Program. DCR explained that "students who complete AT 0984 are allowed to sit for the nutrient management certification exam." Also, DCR nutrient management staff regularly speak at various field days and Extension

meetings. DCR also contracts with a nutrient management specialist in Virginia State University's Small Farm Outreach Program as previously discussed.

During the interview, DCR staff indicated that they have enough certified planners to write the plans for the acres targeted in the WIP; however, many certified planners are not actively writing plans. DCR needs to find incentives to encourage planners to develop plans. As mentioned previously, DCR is trying to incentivize development of NMPs through multiple funding mechanisms, including cost-share for planning and the Direct Pay Program, which pays private planners to write NMPs. VACS funding can be used to implement numerous BMPs, including the BMPs selected by EPA for evaluation in this assessment. DCR noted that with initiation of these programs, they have received more plans for review than before. These programs are less burdensome and create a mechanism to make payments without going through a bidding process.

Regarding the Small Farms Outreach Program, DCR staff discussed the following challenges:

- Unpermitted farms are not required to maintain any type of record keeping on manure transfer or hauling.
- Further, a vast majority of farmers who do not have plans, do not want to maintain the records or do not want to limit on how much manure they can apply.
- While some farmers appreciate the soil sampling, many of these farmers do not want to be regulated.

# 7.7 Nutrient Management Program - Observations

- DCR increased NMP implementation on Virginia farms (including farms with only cropland and animal operations) by approximately 10% since 2015. According to DCR, 643,770 acres are covered under NMPs within the Chesapeake Bay Watershed in Virginia. NMP implementation must be increased to meet the 2025 target in the Phase III WIP, listed as 951,395 acres for Nutrient Management Core Plans and Nutrient Management Enhanced as 758,474 acres.
  - Recommendation: DCR should continue to incentivize development and implementation of NMPs, including at small, unpermitted facilities.
- The data provided by DCR and DEQ and publicly available data is insufficient to evaluate where NMP resources need to be focused to ensure Virginia meets the nutrient management targets in the Phase III WIP.
  - Recommendation: Recognizing that Virginia needs to implement nutrient management on an
    additional 366,486 acres in the CBW by 2025, DCR should evaluate the Nutrient Management
    Program to identify where opportunities exist to better utilize existing staff and resources to
    improve productivity, including evaluating how the current program management structure, and
    implementation of incentive program requirements, are or are not supporting increased
    implementation of NMPs by DCR and SWCDs.
- Additional NMPs have been implemented at unpermitted farms through the RMP program. The RMP regulations for each land use type require "an NMP that meets specifications of the Nutrient Management Training and Certification Regulations (4VAC5-15)". As described in Section 10.1 (RMP section) below, as of the end of SFY2020-2021, 157 RMPs received a certificate of implementation (DCR, 2021a); covering nearly 35,000 acres within the CBW (Commonwealth of Virginia, 2021). Thirty-five thousand acres is less than 10 percent of the difference between Virginia's 2025 nutrient management goal (951,395 acres) and progress reported in 2021 (584,909 acres).
- DCR performs outreach to small dairy farms through DCR's contract with Virginia State University. This

outreach includes education on the nutrient management program. DCR estimate that there are approximately 400 unpermitted operations in the state and approximately half have an NMP. Unpermitted farms are not required to maintain any type of record keeping on manure transfer or hauling. Further, a vast majority of farmers who do not have plans, do not want to maintain the records, or do not want a limit on how much manure they can apply. While some farmers appreciate the soil sampling, many of these farmers do not want to be regulated.

- Recommendation: Virginia needs to identify opportunities for unpermitted agriculture operations to implement approved NMPs. The Commonwealth will need to approve NMPs for an additional 90,000 acres per year in the CBW, approximately, to meet the 2025 nutrient management goal, starting in 2021.
- DCR is facing challenges in the marketing of available funding to eligible agricultural producers. DCR planned to develop a market plan; however, staff turnover has delayed DCR's development of a marketing plan.
  - Recommendation: DCR should complete the plan for marketing the availability of conservation BMPs funding for to eligible agricultural producers.
- The Virginia General Assembly 2020 session, House Bill 1422 and Senate Bill 704 Chesapeake Bay Watershed Implementation Plan Initiatives passed and were signed by the Governor in June 2020. This legislation was amended in the 2023 General Assembly session. The legislation included regulatory actions that will take effect in 2028 if the required implementation is not met by December 31, 2025.

# 8.0 Virginia Pollution Abatement (VPA) Permit Program

As discussed in EPA's 2015 report, DEQ administers the VPA permitting program to regulate waste management activities for AFOs, CAFOs, and poultry waste brokers and end-users. Implementation of the VPA Permit program has remained largely unchanged since EPA's 2015 assessment, with the exceptions of updates noted below. Permits issued through the VPA program are Virginia state permits, issued separately from federal VPDES permits. DEQ highlighted in its questionnaire that VPA permits are sufficient to cover the activities of the majority of permit-eligible operations, but certain conditions may require some CAFOs to obtain coverage under the VPDES program instead. Details of these conditions and the VPDES permit requirements are discussed in section 9 of this report.

Based on the program assessment update, DEQ has addressed some of the concerns identified in EPA's 2015 assessment report as presented in Table 8.

Table 8: VA Actions to Address Findings from 2015 Assessment – VPA Permit Program

| 2015 Finding  | VA Actions to Address Findings   |
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| In FY2013, the VPA Program had a total budget of \$620,776 and approximately 9.56 FTEs dedicated to the VPA program.  | Staffing for DEQ's VPA AFO and VPA Poultry Waste Management has remained relatively constant since EPA's 2015 assessment. However, DEQ indicated that some staff that will be retiring soon and it is not clear that those FTEs will be replaced.                    |
| Operations that meet the VPA requirements are required to obtain a VPA AFO General Permit Coverage, VPA Poultry General Permit, or VPA AFO Individual Permit. Operations that meet the VPDES requirements are required to obtain a VPDES individual permit for CAFOs.   | Unchanged since the 2015 assessment, the VPA AFO General Permit was reissued on November 16, 2014, and expires on November 15, 2024.   |
| The 2015 assessment report noted that the VPA AFO and Poultry Waste Management permit programs covered 1,037 farms. These 1,037 farms represent approximately 56% of all Virginia AFOs, approximately 4% of all Virginia farms with livestock and poultry, and approximately 2% of all Virginia farms. These 1,037 farms also represent approximately 97% of swine, approximately 80% of the poultry AFOs, and approximately 13% of the dairy AFOs in Virginia. | For the 2021 assessment Virginia reported 899 operations with VPA Poultry Waste Management permits and 112 operations with VPA AFO permits, for a total of 1,011 VPA-permitted operations or 26 fewer VPA-permitted operations than reported in the 2015 assessment. |
| Because Virginia requires permits of the largest farms, the percentage of total animals in confinement which are permitted is markedly greater than the percentage of farms permitted. For example, the dairy cow inventory in the 2012 Ag Census is 94,105 animals, and the corresponding number of dairy cattle on farms with VPA permits is 37,384 animals, representing approximately 40% of the total dairy animal population in Virginia.                 | Virginia continues to require VPA permits for the largest animal agriculture operations. However, analysis of the percentage of total animals in confinement and under a VPA permit was not conducted for the 2021 assessment.                                       |
| The VPA Poultry Waste General Permit also establishes requirements for poultry waste brokers and end-users that receive poultry waste from a VPA-permitted AFO. The reissued 2014 VPA AFO General   | Unchanged since the 2015 assessment. The VPA Poultry Waste General Permit was reissued and became effective on February 17, 2021, and expires on February 16, 2031. The VPA AFO General Permit in place during the 2015 assessment will expire                       |

| Permit establishes requirements for end-users that receive manure from a VPA-permitted APO.  Since 2011, DEQ has conducted inspections at VPA-permitted operations in accordance with DEQ's Risk-based inspection Strategy. Routine inspections must be completed at least once every three to four years.  Based on what Virginia reported in the questionnaire and what EPA observed during the file review, DEQ appears to be exceeding this frequency by inspecting every VPA-permitted facility at least once every two years.  In FY2013, DEQ inspected approximately 50% of all VPA-permitted operations.  The DEQ valley Regional Office conducts approximately 42% of its VPA inspection, rather than randomizing the time of inspection, rather than randomizing the time of inspection, rather conduct inspections, how deficiencies are recorded in inspection reports, and how deficiencies are addressed.  Inconsistency exists between DEQ regional offices in how they conduct inspection, show deficiencies are recorded in inspection reports, and how deficiencies are recorded in inspection reports indicate that a detailed review of MMP records is conducted during each inspection and numerous inspection reports indicate that a detailed review of MMP records is conducted during each inspection and numerous inspection reports indicate that a detailed review of MMP records is conducted during each inspection and numerous inspection reports indicate that a detailed review of MMP records is conducted during each inspection and numerous inspection reports indicate that a detailed review of MMP records is conducted during each inspection.  DEQ inspection reports indicate that a detailed review of MMP records is conducted during each inspection in DEQ's Comprehensive Environmental Data System (CECs).  DEQ inspection reports indicate that a detailed review of MMP records is conducted during each inspection in DEQ's Comprehensive Environmental Data System (CECs).  DEQ inspection of nutrients, application to fields not in the NMP, and operating with an ex  |  |   |
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| NMP violations were the largest category of deficiencies identified in DEQ's inspection reports of VPA-permitted operations.  The common types of non-compliance observed during inspections of VPA-permitted AFOs, as reported by DEQ for the 2021 assessment, are the NMP needs revision or a revised NMP requires DCR approval; incomplete manure application records; expired manure analysis; and maintenance needed for manure storage.  The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are being observed by DEQ and how these deficiencies are   |  | 1 -   |
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| VPA-permitted operations.  2021 assessment, are the NMP needs revision or a revised NMP requires DCR approval; incomplete manure application records; expired manure analysis; and maintenance needed for manure storage.  The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are being observed by DEQ and how these deficiencies are   | <u> </u>   |   |
| requires DCR approval; incomplete manure application records; expired manure analysis; and maintenance needed for manure storage.  The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are being observed by DEQ and how these deficiencies are   |  |   |
| expired manure analysis; and maintenance needed for manure storage.  The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are being observed by DEQ and how these deficiencies are   | VPA-permitted operations.                              | 2021 assessment, are the NMP needs revision or a revised NMP  |
| storage.  The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are   |  | requires DCR approval; incomplete manure application records; |
| storage.  The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are   |  | expired manure analysis; and maintenance needed for manure    |
| The most common non-compliance issues at VPA permitted poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are   |  |   |
| poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are  |  | J = -   |
| poultry operations are NMP revision needed; expired manure analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are  |  | The most common non-compliance issues at VPA permitted        |
| analysis; residual manure exposed; or incomplete manure transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are   |  |   |
| transfer records.  The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are   |  |   |
| The EPA team reviewed 273 compliance inspection reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are  |  |   |
| reports from 60 VRO and TRO VPA-permitted AFO files provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are  |  |   |
| provided by DEQ to determine what deficiencies are being observed by DEQ and how these deficiencies are DEQ reported handling the non-compliance with the DEQ's  | The EPA team reviewed 273 compliance inspection        | In SFY2019-2020, DEQ inspected 61 operations with VPA AFO     |
| being observed by DEQ and how these deficiencies are DEQ reported handling the non-compliance with the DEQ's   | reports from 60 VRO and TRO VPA-permitted AFO files    | permits, statewide. Four of these operations were out of      |
| being observed by DEQ and how these deficiencies are DEQ reported handling the non-compliance with the DEQ's   | provided by DEQ to determine what deficiencies are     | compliance with one or more VPA AFO permit requirements.      |
|  |  |   |
| peing addressed. These inspection reports covered — Finiormal Compilance/Enforcement methods since the issues  | being addressed. These inspection reports covered      | Informal Compliance/Enforcement methods since the issues      |

| the time period from FY2008 through FY2013. Approximately 44% of the inspection reports identified deficiencies.  | were not at a level for immediate escalation to enforcement and each of the permittee's responded within the appropriate timeframe to the requested actions. Note that 38 of these VPA AFO inspections were within the CBW and none of these inspections identified non-compliance.  |
|---|--|
|   | In SFY2019-2020, DEQ inspected 488 VPA-permitted confined poultry feeding operations, 63 of these operations were found to be non-compliant with one or more permit requirements. One Administrative Unilateral Order was issued during this timeframe. Two other cases were referred to enforcement. All other non-compliance was handled through the DEQ's Informal Compliance/Enforcement methods since the issues were not at a level for immediate escalation to enforcement and each of the permittee's responded within the appropriate timeframe to the requested actions. Note that 435 of these VPA permitted poultry operation inspections were within the CBW and 33 of these inspections exhibited non-compliance  There were a total of 18 WLs and 4 NOVs issued to VPA permitted operations during this timeframe.  Warning letters and NOVs are not considered enforcement actions, but EPA does file them under non-compliance. |
| Virginia's Civil Enforcement Manual does not appear to be consistently implemented at VPA-permitted animal agriculture operations, as facilities with similar noncompliance issues were often addressed | DEQ regional staff follow the DEQ's Civil Enforcement Manual and Compliance Manual. Staff confer with the State Program Coordinator on the appropriate steps to handle issues, particularly unusual issues, to ensure consistency across the   |
| differently. Clear deadlines were not always provided to the  | state.   Files reviewed for 2021 assessment provided clear deadlines   |
| facility for addressing deficiencies.   | for all recommended corrective actions.  |
| Violations that remained unresolved across  | Files reviewed for the 2021 assessment did not identify  |
| consecutive annual inspections often were not escalated. Enforcement often was not elevated, even   | unresolved noncompliance.  |
| for facilities with multiple NOVs.  |  |
| Virginia's VPA AFO permit and Poultry Waste   | The VPA AFO and Poultry Waste Management general permit  |
| Management general permit program requires one or   | program requires one of the priority BMPs nutrient   |
| two of the six priority BMPs.   | management. Virginia requires that all permitted operations  |
|   | properly manage and store the animal waste in accordance   |
|   | with the VPA and VPDES regulations and permits.  |

#### 8.1 VPA AFO General Permit

The VPA AFO General Permit was reissued on November 16, 2014, and expires on November 15, 2024. According to DEQ's questionnaire response, no changes were made to program implementation since 2015, apart from the development and implementation of new inspection report forms (discussed in Section 8.6 below). According to VADEQ these forms have since been fully implemented since between the time of EPA assessment process and the publishing of the report.

# 8.2 VPA Poultry Waste Management General Permit

Recent revisions to VPA Regulation (9VAC25-630-10 et. seq.) and the General Permit for Poultry Waste Management standardize waste transfer reporting procedures and expand end-user recordkeeping requirements. These changes will be inputted and tracked in DEQ's Comprehensive Environmental Data System (CEDS). Outlined below are how the amendments affect each involved party.

Permitted growers: Beginning February 17, 2022, upon request by the department, the permitted grower shall submit the records in a format and method determined by the department. Beginning February 17, 2023, the permitted grower shall submit to the department, annually, the records for the preceding state fiscal year (July 1 through June 30) no later than September 15.

Poultry waste end-users: Beginning February 17, 2022, and continuing through February 17, 2023, upon request by the department, the end-user shall submit the records in a format and method determined by the department; and beginning February 17, 2024, the end-user shall submit to the department, annually, the records for the preceding state fiscal year (July 1 through June 30) no later than September 15.

Poultry Brokers have been required to send in the records annually prior to the recent regulation amendment, changes during the most recent regulatory amendment only changed the reporting timeframe and submittal date to align with reporting to the Bay Program model.

In addition, the revised regulation requires poultry growers and poultry waste end-users to report more detailed information on poultry waste transfers with respect to the location (city, county, and zip code) and receiving water where the transferred waste will be utilized. Records were not required to include the county prior to this amendment.

These changes are effective as of February 17, 2021, and are to remain in effect until February 17, 2031.

The revisions remedy the previous lack of structure in submission policies, which required permittees to maintain records of their waste transfers but did not provide clear guidelines for transmitting that data. Under the previous regulation, CBPO had observed that manure transfer data collected by DEQ was not always being reported, resulting in an incomplete historical record. DEQ could always collect records during inspections or request that permittees submit them to the regional office, but no systems were in place to regulate record transfers from the operators to DEQ, and from DEQ to the CBPO.

While the amendments do not address the gaps in the history, they will ensure a more consistent record going forward. DEQ has stated that the current priority is maximizing reports for the current progress year, but plans to revise its historical data (any data collected prior to the current CBP progress reporting year) during WIP phase 7. DEQ also anticipates future development of a new model for BMP reports and intends to provide supplemental historical data at the time of its implementation for calibration purposes. CBPO has always been receptive to retroactive reports and will accept the revised data as it becomes available.

# 8.3 Facility Universe

As of August 2021, there were 119 active and 1 pending VPA general permits. The permitted facilities included 70 Dairy AFOs, 42 Swine AFOs, and 7 Other Cattle AFOs. DEQ did not include the farm type of the operation pending coverage. DEQ's questionnaire indicates that these 120 operations comprise 100% of the facilities that meet the threshold for VPA AFO general permit coverage.

Table 9: VPA AFO General Permit Program 2021 Facility Universe

|                        | VPA AFO General Permit  |                                |                                       |
|------------------------|---|--------------------------------|---------------------------------------|
| DEQ<br>Region          | Number of facilities<br>that meet the<br>threshold for coverage | Number of permitted facilities | Number of pending permit applications |
| Tidewater              | 10  | 10                             | 0                                     |
| Piedmont               | 26  | 26                             | 0                                     |
| Northern               | 11  | 11                             | 0                                     |
| Valley                 | 33  | 33                             | 0                                     |
| Blue Ridge             | 36  | 36                             | 0                                     |
| Southwest              | 4   | 3                              | 1                                     |
| VA Total<br>(# in CBW) | 120<br>(69)   | 119<br>(69)                    | 1<br>(0)                              |

At this time there were also 0 active and 6 pending VPA AFO individual permits.

DEQ's responses also indicated that operations' coverage type may change over time. For example, EPA's 2015 assessment reported 9 facilities covered under VPA AFO individual permits. At the time of EPA's 2021 assessment, 8 of these had transferred coverage and now used VPDES CAFO individual permits, while the remaining operation had closed and terminated its permit. DEQ staff also explained that if a facility performs any upgrades or changes, coverage may change from a VPA individual permit to a general permit (or vice versa).

Although information about the number of animal waste end-users is not tracked separately in the DEQ database, DEQ was able to provide a statewide estimate of 50 animal waste end-users as informed by regional knowledge and input. This includes an estimate of 30 end-users of dairy manure, and 20 end-users of beef manure. DEQ also estimated an additional 100 end-users of horse manure who were not included in the statewide estimate because no horse operations are covered under the VPA AFO general permit and horse manure transfers tend to occur in much smaller quantities than dairy or beef.

As of August 2021, there were 887 active and 6 pending VPA Poultry Waste Management general permits. DEQ's questionnaire indicated that these 893 facilities comprise 100% of the facilities that meet the definition for "confined poultry feeding operation" in 9VAC25-630-10. Table 10 shows the regional distribution of these facilities.

Table 10: VPA Poultry Management Permit Program 2021 Facility Universe

|                        | VPA Poultry Waste Management General Permit                     |                                |                                       |  |
|------------------------|---|--------------------------------|---------------------------------------|--|
| DEQ<br>Region          | Number of facilities<br>that meet the<br>threshold for coverage | Number of permitted facilities | Number of pending permit applications |  |
| Tidewater              | 82  | 82                             | 0                                     |  |
| Piedmont               | 83  | 83                             | 0                                     |  |
| Northern               | 17  | 17                             | 0                                     |  |
| Valley                 | 708   | 702                            | 6                                     |  |
| Blue Ridge             | 2   | 2                              | 0                                     |  |
| Southwest              | 1   | 1                              | 0                                     |  |
| VA Total<br>(# in CBW) | 893<br>(833)  | 887<br>(827)                   | 6<br>(6)                              |  |

According to the questionnaire, a total of 31 poultry waste brokers statewide have registered with DEQ as required under the VPA Poultry Waste Management regulations. DEQ was not aware of any non-registered poultry waste brokers. DEQ stated that the total number of poultry waste end users varies but is estimated to be 2,200 end users. At the time of this assessment, no registered poultry waste brokers or poultry waste end-users had been required to seek coverage under the VPA Poultry Waste Management General Permit. However, brokers can seek a permit if they choose, and in a follow-up response, DEQ indicated that six permit applications had been submitted. These permits were noted as pending because staff were waiting on updated NMPs in order to complete the process. Since the initial response to EPA through the questionnaire, four of those permits were moved to active and only two were still pending. As of March 2023, the two pending cases were referred to DEQ Enforcement staff to resolve. The last two permits were signed in September 2022 and February 2023. A consent order was issued for the facility for which the permit coverage was authorized in February 2023.

#### 8.4 Resources Allocated

As DEQ stated in its response to the questionnaire, staffing for DEQ's VPA AFO and VPA Poultry Waste Management has remained relatively constant since EPA's 2015 assessment. However, DEQ indicated that some staff that will be retiring soon and it is not clear that those FTEs will be replaced. At least one position has been advertised. In addition, DEQ responded that one animal waste program FTE was eliminated from the Piedmont Regional Office due to state budget limitations. However, following allocation of funds for DEQ FTEs related to Virginia Executive Order 6, another FTE was created for the Piedmont Regional Office that splits responsibilities between the biosolids and AFO/CAFO programs (DEQ, 2021a). During the follow-up interview and DEQ's written response provided after the interviews, DEQ staff indicated that they would not be lacking in staff to implement agriculture programs if these positions aren't filled, specifying that "DEQ conducts a position-by-position evaluation to determine what impacts will occur if a position is not filled. In most cases, if the decision is made to not fill a position, some alternative has been devised to meet the programmatic need."

In addition, recent changes to the VPA Regulation and General Permit for Poultry Waste Management will require that DEQ apply additional resources to compliance assurance for the end-user reporting rules. DEQ will also draw from existing staff resources to provide a considerable training effort for permittees, entry of data from regulated entities that lack internet access, and ongoing compliance assurance.

It is not clear if current staffing will be sufficient to cover the increased compliance assurance needs associated with poultry waste reporting.

# 8.5 Data Systems

Since the 2015 assessment, DEQ has continued its use of CEDS to record and track compliance, permitting, and inspection activities for the VPDES CAFO permit program, as well as maintain maps documenting the locations of animal waste facilities. DEQ staff indicated that they still use CEDS to record and track compliance, enforcement, permitting, and inspection activities. Since EPA's 2015 assessment, DEQ indicated that they have made upgrades and improvements to the CEDS software since 2015. Additionally, CEDS allows for mapping of locations of permitted animal waste facilities. DEQ has also continued to staff also use Microsoft Excel to analyze and report data not tracked in CEDS.

At the time of assessment DEQ had announced its intention to transition to web-based reporting for operators, a goal which has since been accomplished. The myDEQ portal was developed using CBRAP (Chesapeake Bay Regulatory Accountability Program) grant funds, and allows permitted poultry growers, waste brokers, and waste end-users to enter, track, and report annual waste transfer records. The ability to submit the records online will streamline the reporting process and improve organization, as well as help all parties adhere to the newly established deadlines for report submittal. At the time of this publication, use of myDEQ for Poultry Waste Management General Permits is voluntary. However, DEQ anticipates incorporating Poultry Waste Transfer Reporting as a requirement in upcoming future releases. Until web-based reporting becomes mandatory, operators who do not wish to participate must continue to submit copies of the Poultry Waste Transfer Records Form to the appropriate DEQ regional office.

DEQ has demonstrated its commitment to supporting permittees in adapting to the new regulations. Training opportunities related to the amended permits are ongoing, and training materials for the myDEQ portal have been completed since the time of assessment. DEQ is also drawing from existing staff resources to support data entry from regulated entities that lack internet access and conduct ongoing compliance assurance throughout the transition.

The recent amendments to the VPA Regulation and General Permit for Poultry Waste will allow for tracking compliance in DEQ's Comprehensive Environmental Data System (CEDS), where staff can input permit and additional reporting and record keeping requirements. The new phased in reporting requirements will become effective as explained in 8.2.

# 8.6 Compliance and Enforcement

As indicated in the questionnaire, DEQ regional staff typically contact the permittee to schedule the inspection. During the interview, DEQ representatives explained that DEQ uses a risk-based inspection strategy. The recent regulatory action of the VPA Regulation and General Permit for Poultry Waste Management, effective on February 17, 2021, added reporting requirements for the permitted grower and poultry waste end-user. The development of the new inspection report forms was intended to provide better documentation of the extensiveness of the compliance inspections completed of the facilities and further standardize VADEQ permit inspection forms between the DEQ regional offices. DEQ's 2021 assessment questionnaire response states,

[a]s previously mentioned, due to the recent amendments to the regulation, DEQ staff will begin tracking compliance with the new recordkeeping and reporting requirements set forth by the regulation. Additionally, new inspection report forms are being implemented to better document the extensive compliance inspections of the facilities. While the previous report forms allowed inspectors to document compliance to the permits and regulations including if a facility discharged

to State Waters or not; the new inspection forms include more detailed questions related to areas of concern at the farms including specifics related to whether a facility is discharging.

DEQ performs inspections once every three to four years, using a matrix to determine inspection frequency. For example, inspection frequency may change due to concerns from citizens or compliance issues. In most cases, inspections are being performed more frequently than once every three years, and DEQ has flexibility to decrease inspection frequency if resource issues arise. In SFY 2019-2020, DEQ inspected approximately 50% of VPA AFO permittees and approximately 55% of VPA Poultry Waste Management permittees. DEQ also performed a total of 25 inspections of unpermitted poultry waste brokers and end users SFY2019-2020. According to DEQ, inspections are conducted at poultry waste brokers and end users as needed, depending on complaints and review of annual reports. There were no enforcement actions taken against poultry waste brokers in the SFY2019-2020.

Table 11 displays the number of VPA-permitted AFOs that were inspected as of August 20, 2021 (for SFY2020-2021), and the number of facilities where noncompliance was identified by DEQ. In addition, DEQ conducted one animal waste end-user inspection during SFY2019-2020. DEQ reported the following non-compliance issues at VPA-permitted AFOs during this time frame: NMP revision needed, or revised plan needs DCR approval (farm under permit level); incomplete manure application records; expired manure analysis; and lack of maintenance of manure storage (brush, trees, groundhog holes) (DEQ, 2021a).

Table 11: Inspection Reports of Noncompliance in VPA-permitted AFOs

| ·            |                   | Number of Facilities |
|--------------|-------------------|----------------------|
| DEQ Regional | Number of VPA AFO | Where Non-Compliance |
| Office       | Inspections       | was Discovered       |
| Tidewater    | 3                 | 0                    |
| Piedmont     | 11                | 0                    |
| Northern     | 0                 | 0                    |
| Valley       | 25                | 0                    |
| Blue Ridge   | 22                | 4                    |
| Southwest    | 0                 | 0                    |
|              | 61                | 4                    |
| VA Total     | (38)              | (0)                  |
| (# in CBW)   |                   |                      |

Table 12 displays the number of VPA-permitted Confined Poultry Feeding Operations that were inspected as of August 20, 2021 (for SFY2020-2021), and the number of non-compliance instances identified by DEQ. According to the interview, in the VPA Poultry Waste Management Program, DEQ issued one Administrative Unilateral Order for not providing litter transfer records, poultry waste analysis, and NMP to DEQ for review during SFY2019-2020. Two other cases were referred to enforcement for not having litter transfer records available onsite; records have since been provided and the case was closed (DEQ, 2021a).

Table 12: Inspection Reports of Noncompliance in VPA-permitted Confined Poultry Feeding Operations

|                     | Number of VPA Poultry | Number of Facilities |  |
|---------------------|-----------------------|----------------------|--|
| <b>DEQ Regional</b> | Waste Management      | Where Non-Compliance |  |
| Office              | Inspections           | was Discovered       |  |
| Tidewater           | 101                   | 57                   |  |
| Piedmont            | 65                    | 0                    |  |
| Northern            | 1                     | 1                    |  |
| Valley              | 316                   | 95                   |  |
| Blue Ridge          | 3                     | 0                    |  |
| Southwest           | 1 1                   |                      |  |
| VA Total            | 487                   | 63                   |  |
| (# in CBW)          | (434)                 | (33)                 |  |

As indicated in the questionnaire, DEQ staff will begin tracking compliance with the new poultry waste transfer reporting requirements set forth by the regulation. The DEQ State Program Coordinator continues to work with DEQ compliance staff to make certain that inspectors understand the permit and regulatory requirements and can determine when a facility is out of compliance with the permits, including identifying a discharge to State Waters. Where there are unusual circumstances or situations on a site, DEQ regional staff reach out to the DEQ State Program Coordinator for guidance and assistance. This practice helps to ensure consistency with compliance activities across the state (DEQ, 2021a).

Based on the file review of VPA AFO permittees, DEQ adequately identified issues during inspections, including issues related to expired manure analysis. Based on the file review of VPA Poultry Waste Management permittees, DEQ appropriately identified issues related to inadequate storage of manure, transfer records not being maintained, expired NMP, expired litter analysis, missing field application records, inaccurate registration statement, and NMP animal units exceeded. Issues of non-compliance were handled through DEQ's Informal Compliance/Enforcement methods because the issues were not at a level for immediate escalation to enforcement and each of the permittee's responded within the appropriate timeframe to the requested actions. DEQ does not consider warning letters and NOVs to be enforcement actions. DEQ issued 18 WLs and 4 NOVs issued during SFY2019-2020. (DEQ, 2021a)

#### 8.6.1 Compliance Inspections

As noted above, the VPA AFO permit inspection report forms included in the file were not consistent between the two Regional Offices included in the review DEQ has since noted that this was due to the piloting of the newly developed forms in the Tidewater Regional Office for the timeframe of the data request. The Tidewater Regional Office inspection form includes a few more pieces of key information than the Valley Regional Office inspection form, such as if DCR training has been completed by the AFO owner/operator, biosecurity information and more information on feeding and waste storage facilities. In addition, the Tidewater Regional Office inspection form includes previous inspection deficiencies and status. The Valley Regional Office inspection forms did not include previous inspection deficiencies.

New inspection report forms have been developed and are being implemented to better document the extensive compliance inspections of the facilities. According to DEQ, at the time of the assessment, the inspection forms were undergoing final revisions. While the previous report forms allowed inspectors to document compliance with the permits and regulations, including whether a facility discharged to state waters; the new inspection forms include more detailed questions related to areas of concern at the farms including specifics related to whether a facility is discharging (DEQ, 2021a).

#### 8.6.2 Compliance Determinations

DEQ uses the permit and NMP to assess compliance of a specific facility. The NMP is incorporated into the permit and enforceable through the permit. A facility that does not comply with the permit and NMP for the facility is considered out of compliance.

DEQ staff review the following records during inspections to ensure compliance with the permit and NMP:

NMP, including associated revisions and documentation; land application records (if applicable); waste transfer records (if applicable); and monitoring records: manure, soils (if applicable) and groundwater (if applicable).

As indicated in the questionnaire, DEQ regional staff follow the DEQ's Civil Enforcement Manual and Compliance Manual. Additionally, often staff confer with the State Program Coordinator on the appropriate steps to handle issues (especially issues that are out of the ordinary) to ensure consistency across the state.

#### 8.6.3 Compliance Inspection Follow-up Activities

During SFY 2019-2020, one Administrative Unilateral Order was issued. Two additional cases were referred to enforcement. All other non-compliance was handled through the DEQ's Compliance Auditing Manual since the issues were not at a level for immediate escalation to enforcement and each of the permittees responded within the appropriate timeframe to the requested actions. DEQ does not consider warning letters and notices of violation (NOVs) as enforcement actions. DEQ issued 18 warning letters and 4 NOVs during SFY2019-2020.

Based on the file review for one VPA-permitted poultry facility, during the December 17, 2019 inspection, the DEQ inspectors observed inadequate storage of manure at multiple locations on the facility. The warning letter, sent to the facility on January 21, 2020, requested the facility to respond to DEQ in writing within 20 days detailing actions taken or planned to ensure compliance; however, the file did not include the written response from the facility. During the interview, DEQ noted that the facility was not required to respond in writing because DEQ inspectors observed corrective actions within 20 days and adequate corrections were noted in the report dated 3/12/2020 for the inspections conducted on 1/28/20 and 2/7/20.

# 8.7 WIP Implementation Goals

Related to the VPA AFO General Permit and VPA Poultry Waste Management General Permit, the Phase III WIP includes goals to achieve nutrient and sediment load reductions through implementation of BMPs that are required or may be implemented through these permits. The following BMPs are required or implemented at VPA-permitted AFOs and VPA-permitted confined poultry feeding operations: Animal Waste Management Systems and Nutrient Management.

All permitted operations are required to properly manage and store the animal waste in accordance with the VPA and VPDES regulations and permits. Animal Waste Management Systems are not required at VPA or VPDES permitted operations, but they must be implemented if on-site.

Grass buffers are not required at VPA permitted operations but may be implemented depending on land application buffer zones. The other BMPs selected by EPA for evaluation in this assessment, such as livestock stream exclusion practices, are not required through the VPA Permits. DEQ noted that during inspections and training programs, DEQ discusses additional voluntary BMPs with farmers. In addition, inspectors look for

opportunities to suggest additional voluntary BMPs when onsite and inform AFOs or small farms about DEQ's programs, nutrient management, or other programs including the Small AFO Assessment and Evaluation Strategy.

In the questionnaire response, DEQ indicated that the BMP requirements for poultry waste brokers and end users assist in the goals of the Phase III WIP because the BMP requirements for VPA poultry waste brokers and end users (specified in the technical regulations Sections 60, 70 and 80 of 9VAC25-630) mirror the requirements for poultry waste storage for growers (found in Section 50). The technical regulations related to land application include requirements for recording land application site, nearest stream or waterbody, the method used to determine the land application rates, the land application rate used, date of application, crops planted, nutrient analysis results, soil tests (if obtained) and NMP (if applicable).

# 8.8 VPA Program - Observations

- The VPA Regulation and General Permit for Poultry Waste Management became effective on February 17, 2021. The general permit and regulations were revised and now require poultry growers and poultry waste end-users to report detailed information to DEQ on poultry waste transfers.
  - Recommendation: DEQ should complete the deployment of the MyPortal online VPA Poultry Waste permit data reporting system to enable growers to submit their annual records electronically in 2023.
- The VPA AFO and Poultry Waste Management permit programs currently cover 1,010 operations, and 896 these VPA permitted operations are in the CBW.
- DEQ estimated that there are approximately 50 animal waste end users in Virginia (including approximately 30 end users of dairy manure from unpermitted dairies and 20 end users of beef manure). All animal waste end users are located in the Valley Region, none are in the CBW.
- A total of 31 poultry waste brokers statewide have registered with DEQ as required under the VPA Poultry Waste Management regulations.
- It is not clear if current staffing will be sufficient to cover the increased compliance assurance needs associated with poultry waste reporting.
  - o **Recommendation:** DEQ should ensure adequate staffing to increase compliance assurance needs associated with poultry waste reporting.
  - Recommendation: DEQ has existing SOPs for implementing any new requirements. However, because adhering to the updated legislation may require staffing changes, DEQ should consider a department-wide training to help ensure that all staff are adequately prepared for uniform implementation.
- In SFY 2019-2020, DEQ inspected approximately 50% of VPA AFO permittees and approximately 55% of VPA Poultry Waste Management permittees.
- VPA AFO permit inspection reports included in the file were not consistent between the two Regional
  Offices included in the review. DEQ notes that the inconsistency was temporary, as the review was
  conducted during a pilot period for new inspection report forms, DEQ reports that it has since
  completed the transition and the new and more extensive inspection forms have been implemented at
  both regional offices.
- The most common non-compliance issues at VPA permitted poultry operations are: NMP revisions needed, expired manure analysis, residual manure exposed, and incomplete manure transfer records.
  - Recommendation: As resources allow, DEQ should explore opportunities to increase permit
    holders' awareness of common noncompliance issues as part of DEQ's existing compliance
    assistance services.

- Based on the file review of VPA AFO permittees, DEQ adequately identified issues during inspections, including issues related to expired manure analysis.
- Based on the file review of VPA Poultry Waste Management permittees, DEQ appropriately identified
  issues related to inadequate storage of manure, transfer records not being maintained, expired NMP,
  expired litter analysis, missing field application records, inaccurate registration statement, and NMP
  animal units exceeded.

# 9.0 Virginia Pollutant Discharge Elimination System (VPDES) CAFO Permit Program

DEQ administers the CWA's NPDES program as the VPDES program to issue coverage for operations that meet federal permitting requirements. This includes all facilities that meet the federal definition for a CAFO or any of the conditions outlined in section B of 9VAC25-31-130. During the follow-up interview, DEQ representatives stated that the roles of the DEQ Central Office and Regional Offices and outreach and communication have not changed significantly since EPA's 2015 assessment. DEQ performs outreach through face-to-face meetings, required operator trainings, other outreach opportunities, email, and mail communications, the DEQ website, and the Virginia Regulatory Townhall website to communicate guidance and policies.

EPA's 2015 assessment report included an observation that DEQ had not issued any final VPDES CAFO permits. The report noted that Virginia planned to issue two VPDES CAFO permits by January 2015 and intended to draft six additional VPDES CAFO permits for swine operations and four VPDES CAFO permits for poultry operations. In addition, at the time, DEQ had reviewed another 75 VPDES permit applications and concluded that most of the facilities do not discharge and therefore do not require coverage under a VPDES permit. DEQ reports it has issued a total of 11 VPDES CAFO Individual Permits since 2015 (eight swine operations and three poultry operations). As of August 20, 2021, one of the poultry facilities had closed and terminated its permit, leaving ten active VPDES CAFO Individual Permits.

EPA's 2015 assessment report specified that DEQ will review existing VPDES CAFO regulations at least once every four years unless specifically exempted from periodic review by the Governor. During the follow-up interview, DEQ staff stated that the last periodic VPDES CAFO review was September 10, 2019. The VPDES CAFO Regulations were updated on October 1, 2020, to incorporate minor administrative and clerical revisions not specific to CAFO permits.

The VPDES CAFO General Permit expired on December 31, 2010, and was not reissued. Instead, DEQ now issues individual VPDES permits to CAFOs. DEQ's response to the questionnaire indicates that they have finalized the VPDES Individual Permit Template which is used to create draft VPDES CAFO Individual Permits. DEQ noted that the template is designed to be revised as needed to incorporate regulatory or programmatic changes.

DEQ indicated that the nine minimum measures and standards of 40 C.F.R. Part 122 and 40 C.F.R. Part 412 are addeincorporated into the permit package through the Permit Application Addendum, the VPDES CAFO Individual Permit, and the NMP. These documents address the requirements of the federal CAFO regulations .

In accordance with the federal regulations mentioned above, a VPDES CAFO permit must address certain minimum requirements, including but not limited to, land features or structures related to discharges from stormwater or land application sites, methods and procedures used to ensure the appropriate design and operation of waste storage facilities; and practices for proper equipment maintenance, waste monitoring and analysis, solids management, and chemical storage.

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A VPDES CAFO permit also identifies the minimum NMP requirements, including a site map showing waste storage facility locations and land application fields, soil assessments, soil and waste monitoring, storage and land area requirements, calculation of waste application rates, and waste application rate schedules.

VPDES CAFO permits also require development of a Farm Operating Manual. These documents are developed by the operator and provide opportunity for further clarification on requirements that are not specified by the CAFO Rule, thereby functioning as a mechanism to incorporate additional permit guidelines that would not otherwise be enforceable- DEQ's questionnaire provided the example that the manual could specify inspection intervals of specific items associated with the operation. DEQ's response to the questionnaire indicates that DEQ staff reviews a submitted Farm Operating Manual to ensure that it meets the requirements outlined in the facility's individual permit. Once DEQ staff determine the Farm Operating Manual meets the permit requirements, staff approve the Farm Operating Manual, and a letter is sent to the permittee. If DEQ identifies deficiencies in the submitted manual, staff will request revisions to be submitted for review and approval. EPA received one poultry operation's Farm Operating Manual for review. The Farm Operating Manual included the information described above for the facility's BMPs (including heavy use pads and a grass buffer), as well as information on waste monitoring, solids waste management, and chemical storage As of November 15, 2021, DEQ staff have approved 11 new and revised Farm Operating Manuals since the permits have been issued (DEQ, 2021a).

DEQ's questionnaire response described the public notice procedures for individual VPDES CAFO permits, which are set forth at 9VAC25-31-290. Draft permits are made available for public notice and comment, along with the permit application, Permit Application Addendum, and NMP. For permit issuances, the notice is published in a newspaper for two weeks and on DEQ's website for at least 30 days. DEQ receives public comments and schedules public hearings, as necessary, in accordance with 9VAC25-31-300 and 9VAC25-31-310. DEQ stated that a public hearing is held if DEQ receives enough requests that meet the criteria to hold a hearing. A public hearing provides an opportunity for the agency to present information and hear citizen concerns related to the draft permit. There are separate procedures regarding the permit decisions related to a permit denial or grievances that are not in relation to the public involvement (DEQ, 2021a).

DEQ's questionnaire response explained that the Farm Operating Manual is not part of the application package and therefore is not made available for public notice and comment with the draft permit. However, VPDES CAFO permits require that a Farm Operating Manual is submitted to DEQ within 90 days after the effective date of the permit. Consistent with Virginia's procedures for other types of VPDES and VPA permits that require operation and maintenance manuals, the Farm Operating Manual becomes a public record after it is submitted (DEQ, 2021a).

Regarding the VPDES permit issuance process, DEQ reported the only change to the VPDES CAFO permit issuance process since EPA's 2015 assessment is that permits are not automatically sent to EPA for review based on the agreement with EPA since CAFOs are considered minors.; however, EPA may request to review a permit. In addition, EPA's 2015 report incorrectly suggested that appeals of permit decisions or conditions occur as part of the public notice and hearing process. During the follow-up interview, DEQ staff clarified that the appeal process is separate from the public notice/hearing process.

Table 13: VA Actions to Address 2015 Findings- VPDES CAFO Permit Program

| 2015 Finding   | VA Actions to Address Findings  |
|--|---|
| In FY2013, the VPDES CAFO program had a total budget of \$68,590 and approximately 0.725 FTEs dedicated to the VPDES CAFO program.   | <ul> <li>DEQ's 2021 assessment questionnaire response states:         "Human resources for Virginia DEQ's VPDES CAFO, VPA AFO, VPA Poultry, and Small AFO program implementation have remained relatively flat since 2015 with the following qualifications:         <ul> <li>In the DEQ Piedmont Regional Office (PRO), one FTE dedicated to animal waste programs was eliminated due to state budget limitations. However, following allocation of funds for DEQ FTEs related to Virginia Executive Order 6 that focused on ensuring DEQ had the resources necessary to carry out the agency's mission, another PRO FTE was created that splits responsibilities between the biosolids and AFO/CAFO programs.</li> <li>Some FTEs are currently or will soon be vacant due to staff retirements; at this time, it is unknown if these positions will be filled.</li> </ul> </li> </ul> |
| To date, approximately 86 CAFOs have submitted VPDES permit applications to DEQ, but DEQ has not issued any final VPDES CAFO permits.  | As of August 20, 2021, DEQ reported 10 operations are covered by a VPDES CAFO individual permit, two of these operations are in the CBW.  |
| In EPA's evaluation of Virginia's 2012-2013 Milestone Progress and 2014-2015 Milestone Commitments, one of the identified shortfalls was that "Virginia did not issue any CAFO permits as committed to by September 2012 and later deferred to December 2013; this milestone has been carried over to the 2014-2015 milestones."   | As of August 20, 2021, DEQ reported 10 operations are covered by a VPDES CAFO individual permit, two of these operations are in the CBW.  |
| In May 2014, DEQ submitted two draft VPDES CAFO permits for two swine operations to EPA for review and comment, EPA completed its review in October 2014, and Virginia plans to issue these two permits by January 2015. Afterwards, DEQ has stated that it intends to draft six additional VPDES CAFO permits for swine operations and four VPDES CAFO permits for poultry operations. Virginia estimates that the eight swine permits and associated NMPs will address approximately 40% of the permitted swine in Virginia. | As of August 20, 2021, DEQ reported 10 operations are covered by a VPDES CAFO individual permit, two of these operations are in the CBW.  |
| DEQ has reviewed the remaining 75 VPDES permit applications and concluded that the majority of the facilities do not discharge and therefore do not require issuance of a VPDES permit. DEQ determined that two additional poultry facilities have drainage issues of concern and plans to begin processing these permit applications. DEQ has determined that the remaining 73 of 75 facilities will continue to be regulated under VPA permits. EPA has not to date provided a response to that conclusion.                  | As of August 20, 2021, DEQ reported 10 operations are covered by a VPDES CAFO individual permit, two of these operations are in the CBW.  |
| Virginia's VPDES CAFO program requires between one and four of the six priority BMPs.  | The VPA AFO and Poultry Waste Management general permit program requires one of the priority BMPs nutrient management. Virginia requires that all permitted operations properly manage and store the animal waste in accordance with the VPA and VPDES regulations and permits.   |

### 9.1 Facility Universe

At the time of EPA's 2015 assessment, DEQ had not issued any final VPDES CAFO permits.

As DEQ stated in its response to the questionnaire, as of August 20, 2021, 183 facilities statewide met the Large CAFO definition in 9VAC25-31-10 and 11 facilities were covered by a VPDES CAFO individual permit (the other facilities are covered under VPA AFO or Poultry Waste Management Permits). Of the 11 permitted facilities, 3 were poultry facilities and 8 were swine facilities. Since 2015, 1 poultry operation closed, and the permit was terminated bringing the total to 10 operations covered by a VPDES CAFO IP. DEQ responded that six permit renewal applications were pending as of August 20, 2021.

As DEQ stated in its response to the questionnaire, one of the main challenges the department faces in implementing the VPDES CAFO program "...has been and remains identifying clear applicability of the duty to apply for a VPDES permit. The VPA AFO program includes all of the substantive physical best management requirements of the federal program that actually protect surface waters (e.g., nutrient management, waste storage, etc.), nearly all of the administrative requirements (recordkeeping, etc.), and additional requirements (training) that make the state program completely adequate to protect the environment and human health." (DEQ, 2021a).

DEQ also stated that they have "...applied considerable [resources] to the administrative overhead necessary to meet federal requirements, without any measurable effect on water quality improvement. In fact, the resources applied to the federal program serve as a sink for DEQ resources that would otherwise be available to further the effectiveness of the state program [VPA Program]. A change in the federal rule that would acknowledge the effectiveness of the state program as an equivalent administrative tool would dramatically improve DEQ's ability to effect meaningful water quality improvement and protection by reducing the administrative burden." (DEQ, 2021a).

#### 9.2 Resources Allocated

As DEQ stated in its response to the questionnaire, staffing for the VPDES CAFO Permit Program has remained relatively constant since EPA's 2015 assessment. However, DEQ indicated that some staff that will be retiring soon and it is not clear that those FTEs will be replaced. DEQ was actively seeking applicants for at least one role at the time the questionnaire was completed and has since reported that one position has been filled.

In addition, DEQ responded that one animal waste program FTE was eliminated from the Piedmont Regional Office due to state budget limitations. However, following allocation of funds for DEQ FTEs related to Virginia Executive Order 6, another FTE was created for the Piedmont Regional Office that splits responsibilities between the biosolids and AFO/CAFO programs (DEQ, 2021a).

During the follow-up interview and DEQ's written response provided after the interviews, DEQ staff indicated that they would not be lacking in staff to implement agriculture programs if these positions aren't filled, specifying that "DEQ conducts a position-by-position evaluation to determine what impacts will occur if a position is not filled. In most cases, if the decision is made to not fill a position, some alternative has been devised to meet the programmatic need."

#### 9.3 Data Systems

Since the 2015 assessment, DEQ has continued its use of CEDS to record and track compliance, permitting, and

inspection activities for the VPDES CAFO permit program, as well as maintain maps documenting the locations of animal waste facilities. DEQ indicated that they have also made upgrades and improvements to the software since 2015.

# 9.4 Compliance and Enforcement

DEQ uses the same risk-based inspection strategy for scheduling inspections at VPDES-permitted facilities as it does for VPA-permitted facilities, utilizing the same matrix to determine the appropriate frequency. Additionally, inspections for both types of facilities are conducted at similar intervals, and VPDES-permitted facilities are receiving similar levels of assessment- exceeding the requirement of at least one inspection every three years. As stated above, DEQ can reduce inspection frequency if resources become limited.

DEQ's questionnaire response indicates that staff review the following records to determine compliance with VPDES Individual Permits:

- Individual permit and permit application records, including the Permit Application Addendum
- NMP, including associated revisions and documentation
- Farm Operating Manual (if applicable)
- Land application records (if applicable)
- Waste transfer records (if applicable)
- Annual reports
- Monitoring records for manure, soils (if applicable) and groundwater (if applicable).

DEQ's response to the questionnaire indicates that 5 VPDES-permitted CAFOs (or 50%) were inspected in SFY2019-2020. Noncompliance was identified at each of the inspected facilities, relating to exposed manure, expired manure analysis, and/or incomplete or unavailable visual inspection records for BMPs and stormwater. The noncompliance issues were handled through DEQ's Compliance Auditing Manual and were resolved at all facilities within the appropriate timeframes. As such, escalation to enforcement was not necessary, and no warning letters or notices of violation were issued in SFY2019-2020 (DEQ, 2021a).

# 9.5 WIP Implementation Goals

Related to the VPDES CAFO Permit Program, the Phase III WIP includes goals to achieve nutrient and sediment load reductions through implementation of BMPs that are required or may be implemented through these permits. DEQ stated in the questionnaire responses that, of the BMPs selected by EPA for evaluation in this assessment, the following may be included or required at a particular VPDES-permitted CAFO: Animal Waste Management Plans and Nutrient Management Plans.

All permitted operations are required to properly manage and store the animal in accordance with the VPA and VPDES regulations and permits. Animal Waste Management Systems are not required at VPA or VPDES permitted operations, but they must be utilized if on-site.

Grass buffers are not required at VPDES-permitted CAFOs but may be implemented depending on land application buffer zones.

The other BMPs identified by the Phase III WIP, such as livestock stream exclusion practices, are not required through the VPDES CAFO Permits. However, DEQ noted that DEQ staff discuss additional voluntary BMPs with operators during inspections and training programs and identify specific opportunities while onsite.

# 9.6 VPDES CAFO Program - Observations

- DEQ reports the only change to the VPDES CAFO permit issuance process since EPA's 2015 assessment is
  that permits are not automatically sent to EPA for review based on the agreement with EPA since CAFOs
  are considered minors. EPA may request permits for review.
- Farm Operating Manuals become part of the public record for a CAFO permit after they are submitted to the state prior to permitting.
- As of August 20, 2021, 183 facilities statewide meet the Large CAFO definition, 139 of these are in the CBW, and 10 facilities are covered by a VPDES CAFO individual permit, 2 VPDES CAFO permitted facilities are in the CBW (the other facilities are covered under VPA AFO or Poultry Waste Management Permits). As of August 20, 2021, 6 permit renewal applications were pending, none of these facilities are in the CBW. The last 2 permits were signed in September 2022 and February 2023, a consent order was issued for the facility that the permit coverage was signed in February 2023.
- Five VPDES-permitted CAFOs (or 50%) were inspected in SFY2019-2020. Noncompliance was identified at each of the inspected facilities and the noncompliance issues were resolved at all facilities. DEQ listed incomplete or unavailable visual inspection records for BMPs and Stormwater, exposed manure, and expired manure analysis as causes of the non-compliance at VPDES-permitted CAFOs (DEQ, 2021a).
  - As resources allow, DEQ should explore opportunities to increase permit holders' awareness of common noncompliance issues as part of DEQ's existing compliance assistance services, similar to our recommendation for the VPA program.
- Staffing for the VPDES CAFO Permit Program has remained constant since 2015 and may decrease due to retirements and budget limitations.

# 10.0 Resource Management Plan Program

The Resource Management Plan (RMP) program is administered by DCR and promotes the voluntary development and implementation of a comprehensive conservation plan on cropland, hayland, and pastures. The Resource Management Plan includes agricultural practices that are protective of water quality such as practices that address onsite erosion issues, nutrient management, and protection of perennial streams. These agricultural practices may be applied toward nutrient and sediment reductions associated with the Chesapeake Bay TMDL and other TMDLs. The plans are written by certified RMP developers and are specific to the farm operation.

The RMP program was new at the time of EPA's 2015 assessment and has not changed since that time. According to DCR staff, since EPA's 2015 assessment, the program has been transitioning from RMP development to certification of RMPs, with fewer new plans being submitted for review.

EPA's 2015 assessment report included observations suggesting that a long-term source of funding for the administration and implementation of the RMP program had not been identified. In addition, the report specified that it was unclear if the grants made available by DCR would be sufficient to fund RMP development in the Virginia portion of the Chesapeake Bay Watershed. Based on the program assessment update, DCR began a Direct Pay Initiative for RMP developers to incentivize RMP development. In addition, Virginia increased the tax credits available for implementation of BMPs that are part of an approved RMP.

At the time of EPA's 2015 assessment, Virginia had not estimated the number of farms that that would be preparing RMPs. At that time, Virginia had anticipated wide-spread acceptance and implementation of the program, but there was still uncertainty about ultimate subscription to the program. According to the RMP Annual Report for the period Sept. 1, 2020 – June 30, 2021, there are 512 plans in the Chesapeake Bay drainage, 72 plans outside the Chesapeake Bay drainage, and 18 plans in both drainages. These 582 plans cover 130,779 acres statewide, including 112,422 acres of land in the Chesapeake Bay watershed.

Table 14: VA Actions to Address 2015 Findings – RMP Program

| 2015 Finding   | VA Actions to Address Findings                               |
|--|--|
| Since January 2014, the RMP Program has had 3 FTEs         | In the 2021 questionnaire, DCR reported no changes in RMP    |
| dedicated to program implementation and support.           | staff since 2015.  |
| A farmer who chooses to participate in the RMP             | As DCR indicated in the questionnaire response, the          |
| program agrees to implement certain BMPs, such as an       | regulations must be reviewed every 4 years. DCR reviewed     |
| NMP, conservation plan, and stream fencing on pasture.     | the RMP regulations in SFY 2020, including a public comment  |
| In exchange for preparing and implementing the RMP,        | period. No revisions were made based on this review.         |
| farmers with RMPs will be assured of a "safe harbor" for   |  |
| nine years from new Commonwealth environmental             |  |
| regulations related to the Chesapeake Bay or local         |  |
| TMDLs, assuming the RMP is fully implemented.              |  |
| Virginia has not identified a long-term source of funds    | DCR's 2021 questionnaire response stated, "the current       |
| for administration and implementation of the RMP           | limitation is the number of active certified RMP developer   |
| program.   | capacity, as additional developers are certified, additional |
|  | funding may be required."                                    |
| DCR is awarding \$472,640 in EPA CBRAP funds and other     | DCR's 2021 questionnaire response stated, "the current       |
| DCR grant funds for the development of 274 RMPs in the     | limitation is the number of active certified RMP developer   |
| Virginia Chesapeake Bay Watershed covering a total of      | capacity, as additional developers are certified, additional |
| 47,264 acres. It is unclear if the grant made available by | funding may be required."                                    |
| DCR will be sufficient to fund RMP development in the      |  |

| Virginia Chesapeake Bay Watershed.                        |   |
|---|---|
| Virginia's RMP program requires three of the six priority | The RMP program requires three of the priority BMPs; soil |
| BMPs.   | and water conservation plans, nutrient management, and    |
|   | livestock streamside exclusion measure.                   |

# **10.1 Facility Universe**

Table 15a displays the number of RMPs submitted for approval since the start of SFY2016 through 2020, as provided in DCR's response to the questionnaire.

Table 15a:

| Region     | SFY2016-2017 | SFY2017-2018 | SFY2018-2019 | SFY2019-2020 |
|------------|--------------|--------------|--------------|--------------|
| Tidewater  | 17           | 4            | 1            | 22           |
| Valley     | 1            | 0            | 0            | 3            |
| Piedmont   | 29           | 39           | 28           | 68           |
| Northern   | 11           | 11           | 1            | 11           |
| Blue Ridge | 4            | 8            | 2            | 0            |
| Southwest  | 0            | 0            | 0            | 0            |
| VA Total   | 62           | 62           | 32           | 104          |

Table 15b displays how many certificates of RMP Implementation were issued since the start of SFY2016 through 2020, as provided in DCR's response to the questionnaire. Certificates of RMP Implementation are issued to the owner/operator after an on-site inspection and DCR determination that the RMP is adequate and fully implemented.

Table 15b:

| Region     | SFY2016-2017 | SFY2017-2018 | SFY2018-2019 | SFY2019-2020 |
|------------|--------------|--------------|--------------|--------------|
| Tidewater  | 0            | 0            | 8            | 1            |
| Valley     | 3            | 0            | 8            | 7            |
| Piedmont   | 8            | 0            | 62           | 20           |
| Northern   | 0            | 2            | 14           | 0            |
| Blue Ridge | 0            | 0            | 0            | 0            |
| Southwest  | 0            | 0            | 0            | 0            |
| VA Total   | 11           | 2            | 92           | 28           |

According to the RMP Annual Report, as of the end of SFY2020-2021, the RMP Program had developed 582 plans throughout Virginia. Of those developed plans, 55 plans were being finalized for submittal to the appropriate SWCD for approval, and 370 plans had been approved but not yet certified (including almost 70,000 acres in the Chesapeake Bay watershed (Commonwealth of Virginia, 2021)). The remaining 157 RMPs received a certificate of implementation (DCR, 2021a); those plans cover nearly 35,000 acres within the Chesapeake Bay watershed (Commonwealth of Virginia, 2021).

As noted above, according to the RMP Annual Report for the period Sept. 1, 2020 – June 30, 2021, there are 512 plans in the Chesapeake Bay drainage, 72 plans outside the Chesapeake Bay drainage and 18 plans in both drainages. These 582 plans cover 130,779 acres and 35 plans covering just over 8,300 acres were certified during the reporting period. The average plan size is 225 acres (DCR, 2021a).

According to the SFY2020-2021 RMP Annual Report, a total of 3,757 BMPs included in RMPs had been implemented or proposed. Of those, 1,944 BMPs (52%) were included in RMPs that had been implemented or proposed with public funding and 1,813 BMPs (48%) were included in RMPs that had been implemented or proposed without public funding (DCR, 2021a).

#### 10.2 Resources Allocated

DCR's response to the questionnaire indicated that there have been no changes in DCR RMP staff since 2015. The current limitation to implementing the program is the number of active certified RMP developers. As more developers become certified additional funding may be required. DCR explained that they are considering options that will allow SWCDs to develop and approve RMPs as the regulations currently do not allow SWCDs to perform both functions. In addition, DCR has developed its own conservation planning certification training program. Since the requirements to become a certified RMP developer require proficiencies in conservation planning, DCR hopes this will increase the number of certified RMP developers. During the interview, DCR also indicated that they are developing a regulatory action that would allow for a two-year degree, rather than a four-year degree, to meet the educational requirements for an RMP developer. This regulatory action could increase number of RMP developers.

The DCR questionnaire responses specified that RMP staff provide trainings and educational outreach to SWCD staff and encourage them to advertise the program during their direct communication with operators. DCR also trains SWCD on its responsibilities associated with the RMP program. Almost every year, DCR RMP staff present an RMP program update to SWCD staff at annual VACS trainings and have presented at multiple SWCD Spring Area meetings and Virginia SWCD Annual meetings. In addition, DCR RMP staff held monthly training teleconferences during the first years of RMP review activity to assist SWCDs with RMP review duties. RMP staff present directly to farmers and farmers groups at events such as Ag Expo, Virginia Farm Bureau events, and producers' meetings.

# 10.3 Data Systems

During the interview, DCR staff explained that they have created an RMP module housed within their Conservation Application Suite. All RMP developers use the RMP module to develop the plans. The module allows the DCR RMP planner to recommend a BMP and draw out the components of the BMP within the module. SWCD staff also enter data into the module for the cost-share program.

DCR uses the module to generate the RMP annual reports, BMP progress reports, and custom reports to respond to other inquiries.

# 10.4 Compliance and Enforcement

As stated in the RMP regulations, each management unit that has been issued a Certificate of RMP Implementation must be inspected by the local SWCD at least once every 3 years to ensure implementation of, maintenance of, and compliance with the RMP. SWCD staff conduct an onsite inspection and complete a DCR RMP inspection form. The inspection data and outcome are entered into the DCR RMP module. Since 2015, one compliance inspection has been completed at a management unit with a Certificate of RMP Implementation; that inspection was conducted during SFY2019-2020. DCR indicated that a SWCD identified noncompliance at one facility in SFY2019-2020 due to an expired Nutrient Management Plan. This issue was resolved via a corrective action agreement and did not require enforcement action. According to the DCR questionnaire, DCR

began notifying SWCDs of upcoming inspections in February 2020; six inspections were conducted in SFY2020-2021 and nearly 100 are due during SFY2022-2023.

# 10.5 WIP Implementation Goals

Virginia's Phase III WIP includes goals to enhance Virginia's implementation of the RMP program through periodic review of the regulations and for VDACS and DCR to pilot a long-term marketing plan to promote certain farm products grown on farms implementing an RMP. In addition, related to the RMP Program, Virginia's Phase III WIP seeks to enhance implementation of RMPs and associated NMPs and other BMPs that may be required or included in RMPs.

DCR reviewed the RMP regulations in SFY 2020, including a public comment period; no revisions were made based on this review. As stated in the DCR questionnaire response, the RMP program is committed to meeting the current WIP goal of new RMPs covering 10,000 acres annually and 200,000 acres covered under conservation plans including RMPs. According to Virginia's FY 2021 Chesapeake Bay and Virginia Waters Clean-Up Plan, the certified RMPs within the Chesapeake Bay watershed include nearly 35,000 acres, and almost 70,000 additional acres within the Chesapeake Bay watershed are included in an RMP that is currently being implemented but not yet certified.

The Phase III WIP includes goals for implementing a variety of BMPs, including those identified by EPA for evaluation in this assessment. Of the BMPs selected by EPA for evaluation in this assessment, the following may be included or required in a particular RMP, depending on the facility.

- Soil Conservation and Water Quality Plans
- Nutrient Management
- Cover Crops
- Tillage Management
- Forest Buffer
- Grass Buffers
- Livestock Streamside Exclusion Measures (e.g., fencing)

Virginia's requirements for BMPs included in RMPs have not changed since EPA's 2015 assessment. As stated above, a farmer who chooses to participate in the RMP program agrees to implement certain BMPs, such as an NMP, a conservation plan that meets DCR standards, and stream fencing on pastures. During the interview, DCR staff noted that the most common BMPs implemented in the RMPs include animal waste management, cover crops, tillage, and buffers. Stream and livestock exclusion measures are not always included in a plan, depending on the facility. An RMP does not require vegetated buffers on pastures. An RMP also does not require an animal waste management system or barnyard runoff control because it does not address animal confinement.

In the questionnaire response, DCR noted that one of the biggest challenges to RMP program implementation is the lack of certified RMP developers. In 2021, there were 2 DCR developers, 6 SWCD developers, and 5 "other entity" RMP developers. DCR RMP staff recruit potential RMP developers at annual Virginia Nutrient Management Planner Update sessions. In addition, direct farmer outreach is primarily conducted by the RMP developers to their own client base or by SWCD staff when working in partnership with DCR on RMP promotional projects such as Whole Farm Approach projects.

# **10.6 RMP Program - Observations**

- According to DCR, the current limitation to implementing the RMP program is a lack of certified RMP developers. To address this issue, DCR is considering options that will allow SWCDs to develop and approve RMPs, which will require regulatory revision.
  - Recommendation: In considering whether this is a valid option, DCR should carefully consider
    and put measures in place for adequate oversight to address conflicts of interest that may arise
    from having SWCDs both develop and approve the RMPs.
- DCR has also developed its own conservation planning certification training program. Since the
  requirements to become a certified RMP developer require proficiencies in conservation planning, DCR
  is hopeful this will increase the number of certified RMP developers. In addition, DCR is developing a
  regulatory action that would reduce the educational requirements for an RMP developer to help
  increase the number of RMP developers.
- According to the RMP Annual Report for the period Sept. 1, 2020 June 30, 2021, there are 512 plans in the Chesapeake Bay drainage covering nearly 112,422 acres, 72 plans outside the Chesapeake Bay drainage and 18 plans in both drainages.
- According to Virginia's FY 2021 Chesapeake Bay and Virginia Waters Clean-Up Plan, the developed but
  not yet certified RMPs within the Chesapeake Bay watershed include approximately 100,000 acres in the
  watershed. DCR's questionnaire response stated that DCR is committed to achieving 200,000 acres
  under conservation plans through the RMP program. This is insufficient to achieve the 1.176 million
  acres needed to achieve the 2025 soil conservation and water quality plan goal of 1.183 million acres.
- According to the RMP Annual Report, as of the end of SFY2020-2021, 157 RMPs received a certificate of implementation (DCR, 2021a); those plans cover nearly 35,000 acres within the Chesapeake Bay watershed (Commonwealth of Virginia, 2021).
- Each management unit that has been issued a Certificate of RMP Implementation must be inspected by the local SWCD at least once every 3 years to ensure implementation of, maintenance of, and compliance with the RMP. According to the DCR questionnaire, DCR began notifying SWCDs of upcoming inspections in February 2020; six inspections were conducted in SFY2020-2021 and nearly 100 are due during SFY2022-2023.
- **Recommendation:** DCR should evaluate whether increased staffing is needed in order for SWCDs to conduct 100 inspections in the next FY given only six inspections were conducted in the previous FY.
  - Through the RMP program, NMPs have been implemented at unpermitted farms. The RMP regulations for each land use type require "an NMP that meets specifications of the Nutrient Management Training and Certification Regulations (4VAC5-15)". These NMPs are then verified as fully implemented through RMP certification inspections.
  - DCR began a Direct Pay Initiative for RMP developers to incentivize RMP development. In addition, increased tax credits are available for implementation of BMPs that are part of an approved RMP.
  - DCR has created an RMP module housed within its Conservation Application Suite. All RMP developers use the RMP module for development of the plans.

# 11.0 Agricultural Stewardship Act Program

The Agricultural Stewardship Act (ASA) program works with farmers and local Soil and Water Conservation Districts to resolve water quality problems reported to the Virginia Department of Agriculture and Consumer Services (VDACS) concerning nutrients, sediment, and toxins from agricultural activities. If a reported complaint is found to be relevant, VDACS will work with a farmer to develop a plan to remedy the issue (ASA Plan). The ASA program gives the farmer an opportunity to correct a water quality problem voluntarily before any enforcement action is taken. The ASA program can also be an opportunity to educate all parties involved regarding BMPs and agriculture.

The ASA program is administered by the VDACS Commissioners Office. The intent and implementation of the ASA program has not changed since EPA's 2015 assessment; however, updates and additional information gathered are provided below.

VDACS has not published new guidelines since EPA's 2015 assessment and is still operating in accordance with the <u>Virginia Agricultural Stewardship Act Guidelines</u> published April 1, 2010. As discussed in EPA's 2015 assessment report, the ASA Guidelines outline constraints that could limit the effectiveness of investigations related to water quality. For example, neither the Guidelines nor the ASA define what constitutes "substantial evidence" that an agricultural activity is impacting water quality. Further, the guidelines discuss collecting samples only when necessary to prove a case and state that samples are not necessary when the investigator can see that pollutants are entering or will enter the water body in question and the case can be proven through photographs, maps, eye-witness testimony, or other general evidence. During the interview, VDACS staff indicated that what is considered substantial evidence is based on a judgement call from staff. VDACS staff explained that water samples are taken in rare circumstances, typically when VDACS is working in conjunction with DEQ staff. DEQ staff are trained in collecting water samples. VDACS relies mainly on physical and visual evidence of pollution.

Another constraint identified in the ASA Guidelines is that the scope of the ASA investigation cannot be broader than the scope of the complaint. During the interview, VDACS staff noted that if activities that are causing or will cause pollution are identified during the site investigation, but they were not the subject of the complaint, these activities are pointed out to the owner or operator as areas that should be voluntarily addressed. Practices to address these activities may be identified in the ASA plan, at the farmer's discretion. If the farmer agrees with the VDACS staff and includes these activities and practices in the ASA Plan, then it can be addressed by the ASA.

During the interview for this assessment, VDACS representatives indicated that VDACS has drafted an updated version and expected the updated guidelines to be published in Spring 2022; however, as of July 2022 the updated guidelines had not been published. According to the VDACS representatives, the modifications consist of minor revisions including modifications to process descriptions, description of how VDACS interacts with the SWCDs, and the description of VDACS's ability to respond to complaints. The updated guidelines were published in November of 2022.

Table 16: VA Actions to Address 2015 Findings- ASA Program

| 2015 Finding   | VA Actions to Address Findings   |
|--|--|
| In FY2013, the ASA Program had a budget of \$324,187 and 3 FTEs dedicated to program implementation and support.   | At the time of EPA's assessment, staffing had remained constant since 2015, with 3 FTE's dedicated to the ASA Program. However, VDACS indicated in the questionnaire that state funding had been acquired to hire 1 additional FTE for SFY 2021-2022   |
| From April 2013 through March 2014, VDACS received more than 140 inquiries regarding possible agricultural pollution. 80 inquiries became official complaints, of which 32 were determined to be founded complaints that required corrective actions to be implemented through an ASA Plan. 23 of the 32 founded complaints were at livestock operations.  | VDACS's April 1, 2020 – March 31, 2021, Annual Report on the ASA Program indicates that of the complaints received, 64 became official complaints (VDACS, 2021a). VDACS determined that 22 (34%) of those official complaints were founded and required ASA Plans. The report indicates that approximately 55% of the founded complaints (12 out of 22) were at livestock operations including six beef operations; one equine operation; two swine operations; one dairy operation; one operation with beef, poultry, and swine; and one operation with beef, equine, poultry, and sheep.   |
| EPA was not provided access to documentation and thus was unable to determine the overall effectiveness of the ASA program at resolving water quality complaints at individual animal agriculture operations. It is unknown whether or not operations had other water quality issues that could not be addressed due to the scope limitations of the ASA program or what BMPs were required to be implemented by the ASA Plans that these animal agriculture operations. | EPA did not obtain access to facility-specific documentation for this assessment update. However, based on this program assessment update, VDACS has addressed some of the concerns identified in EPA's 2015 assessment report by developing a tracking system to track BMPs under the ASA Program including a geographic information system (GIS) tracking module, added in 2017.  In addition, VADCS's 2021 questionnaire response stated, "[t]he ASA program can only legally address the specific complaint received at the location described in the complaint. However, if staff witnesses other possible water quality issues, it is discussed and the owner or operator is advised to address it." |
| Virginia's ASA program does not set forth minimum BMPs for inclusion in every ASA Plan. Rather, each ASA Plan will identify BMPs to resolve the water quality issue(s) related to the founded complaint, some of which may be priority BMPs.   | Unchanged since the 2015 assessment.   |

# 11.1 Facility Universe

The ASA program covers all agricultural operations without DEQ permits. Per the 2017 USDA Ag Census, there are 43,225 farms in Virginia. The current number of farms with VPDES CAFO, VPA AFO, and VPA Poultry Waste Management permits is 1,017. Therefore, the ASA program covers approximately 42,208 farms.

#### 11.2 Resources Allocated

According to VDACS's response to the questionnaire, staffing has not changed since EPA's 2015 assessment. However, VDACS received state funding for an additional FTE to be hired in SFY2021-2022. VDACS staff provide a handful of trainings each year including for SWCDs and farm groups. All three current staff as well as the future FTE are tasked with verifying stewardship plan BMP tracking and implementation.

## 11.3 Data Systems

VDACS's April 1, 2020 – March 31, 2021, Annual Report on the ASA program indicates that DCR and VDACS have successfully collaborated to expand BMP tracking for the ASA program. VDACS tracks BMPs under the ASA Program using a module on DCR's Conservation Application Suite. A GIS module added in 2017 extended and diversified tracking capacity and report modeling. The database is used to generate the ASA Annual Report, as well as smaller reports that target specific geographic areas upon request. In conjunction with the additional FTE mentioned above, the modernized module will help VDACS capture practices implemented prior to 2017. s.

During the interview, the VDACS representatives explained that they track the BMPs for which they receive credit under the WIP. One challenge that VDACS noted during the questionnaire response and interview, is that nutrient and sediment reductions from some non-traditional BMPs are not being credited. For example, on some farms, streamside BMPs may not work because the area is prone to flooding. In this case, VDACS works with the operators to implement a different practice, such as, removing animals during the summer months, and rotating the animals to the flood-prone area during the winter when direct deposition is not a concern. Management changes used in lieu of physical BMPs may successfully reduce streambank erosion but are ineligible for pollutant reduction credit.

# 11.4 Compliance and Enforcement

VDACS's April 1, 2020 – March 31, 2021 Annual Report on the ASA program indicates that of the complaints received, 64 became official complaints (VDACS, 2021a). VDACS determined that 22 (34%) of those official complaints were founded and required ASA Plans. The report indicates that approximately 55% of the founded complaints (12 out of 22) were at livestock operations including six beef operations; one equine operation; two swine operations; one dairy operation; one operation with beef, poultry, and swine; and one operation with beef, equine, poultry, and sheep. The annual report also contains data on the type of water pollution identified in each complaint. Of the 22 founded complaints, ten were categorized as sediment pollution; seven were categorized as bacteria, nutrient, and sediment pollution; three were categorized as nutrient and sediment pollution; one was categorized as nutrient pollution. The report indicates that compared to the previous program year, the ASA program experienced a 33 percent increase in official complaints, from 48 to 64. The number of founded complaints requiring plans increased by 47 percent, from 15 to 22.

The report indicates that no corrective orders were issued between April 1, 2020, and March 31, 2021. However, four corrective orders have been issued since the start of SFY2016-2017. Of these four corrective orders, there have been five violations of the corrective orders, three of which resulted in civil penalties. VDACS has sought a court order two times out of approximately 1,200 complaints. The report did not provide further information on the basis for the violations.

During the interview, the VDACS representatives indicated that the most common BMPs implemented by an ASA Plan are establishing permanent vegetative cover, stream fencing, cattle exclusion, and grass buffers.

VDACS representatives stated that the most common forms of noncompliance are incomplete implementation or failure to maintain BMPs prescribed in a farm's ASA Plan. Of these BMPs, VDACS noted that farmers most frequently have difficulty maintaining sufficient vegetation to prevent nutrient or sediment loss. Other common non-compliance issues include the lack of sufficient manure storage, failure to manage adequate manure storage levels, and failure to complete gutters on farm buildings.

To address noncompliance, VDACS has developed a verification manual and schedule, approved by EPA, for all BMPs. VDACS will be submitting a new version of this document later in 2022. The verification schedule is based on lifespan of the practices and ensures that BMPS are checked every 3 years (depending on schedule).

# 11.5 WIP Implementation Goals

Virginia's Phase III WIP included a policy initiative (#33) for VDACS to enhance verification of BMPs implemented under the ASA Program. The Phase III WIP indicated that "VDACS will increase the current ASA program staffing levels to allow more focus on Stewardship Plan BMP tracking and verification of BMPs implemented as a result of the program. The program will need additional resources to keep up with the verification schedule necessary to ensure those BMPs are accounted for as part of the Bay model. As the number of stewardship plans increase, so will the staff time needed to verify BMPs in those plans." As discussed above, VDACS has addressed this stipulation by modernizing its BMP tracking data systems and hiring additional FTEs as resources allow.

The ASA program is also used as a tool to achieve WIP goals for reducing agricultural nutrient pollution and sediment loading to the Chesapeake Bay. These include goals for implementing a variety of BMPs, including those identified by EPA for evaluation in this assessment. VDACS stated in the questionnaire responses that, of the BMPs selected by EPA for evaluation in this assessment, the following may be included or required in a particular ASA Plan, but not all are included or required in all ASA Plans.

- Animal Waste Management Systems
- Soil Conservation and Water Quality Plans
- Nutrient Management
- Cover Crops
- Tillage Management
- Forest Buffers
- Grass Buffers
- Livestock Streamside Exclusion Measures (e.g., fencing)

As described in EPA's 2015 assessment report, the ASA program does not require implementation of any specific management practices. In an ASA Plan, the farmer proposes which BMPs will be implemented to prevent the water pollution, and VDACS determines whether the proposed BMPs are appropriate. According to VDACS staff, the most common BMPs in ASA plans are establishing permanent vegetative cover in critical areas, stream fencing, cattle exclusion, and grass buffers associated with stream exclusion practices.

VDACS's questionnaire response noted that, with regard to Initiative 14 (*Enhance Coordination among State Agencies assisting farmers*) in the Phase III WIP, VDACS has worked with other state agency partners. In the Fall of 2021, VDACS met with other state agencies to discuss their various programs (VDACS, 2021b).

# **11.6 ASA Program - Observations**

- The ASA program covers all agricultural operations without DEQ permits.
- VDACS now can track BMPs under the ASA Program. VDACS's tracking system is a module on DCR's
  current Conservation Application Suite. VDACS added a GIS tracking module in 2017. The additional FTE
  mentioned above will allow VDACS to capture past practices implemented prior to 2017. VDACS Annual
  Report should include BMPs implemented as part of the ASA plans to address water quality concerns.

- At the time of review, VDACS had not published new guidelines since EPA's 2015 assessment. Revised guidelines were published on November 10, 2022.
- Neither the Guidelines nor the ASA define what constitutes "substantial evidence" that an agricultural activity is impacting water quality. VDACS staff indicated that previous attempts at a technical definition have been difficult to apply due to the wide range of issues that the ASA program addresses. The current protocol for determining what is considered substantial evidence is based on a judgement call from staff. VDACS has stated that the small number of ASA staff and the program's cross-training procedures allow for consistent determinations to be made. VDACS staff explained that water samples are taken in rare circumstances, typically when VDACS is working in conjunction with DEQ staff. DEQ staff are trained in collecting water samples. VDACS staff rely mainly on physical and visual evidence of pollution occurring.
- The scope of the ASA investigation cannot be broader than the scope of the complaint.
  - Recommendation: Include in the ASA plan all activities that are causing or will cause pollution, regardless of whether they are within the scope of the complaint.
- VDACS received state funding for an additional FTE to be hired in SFY2021-2022. This FTE will support
  the VDACS team with verifying stewardship plan BMP tracking and implementation.
- VDACS added a GIS tracking module in 2017 for the ASA Program. The tracking system is a module on DCR's current Conservation Application Suite.

# 12.0 Small AFO Evaluation and Assessment Strategy

Virginia's Small Animal Feeding Operations Evaluation and Assessment Strategy (Small AFO Strategy) is a cooperative strategy between VDACS and DEQ to proactively evaluate and assess Small AFOs for water quality risks and impacts. Small AFOs are defined as AFOs that do not meet Virginia's thresholds for required permit coverage (see section 12.1). DEQ and VDACS have developed a Memorandum of Understanding which describes their roles in program implementation. DEQ staff indicated that they work with VDACS to discuss which agency will handle each complaint. VDACS and DEQ consult regularly when it comes to the Small AFO Strategy. The agencies staff also communicate regularly about complaints and other programmatic issues.

As stated in the 2015 assessment report, if DEQ or VDACS determines that a facility is an AFO, DEQ or VDACS will perform an in-office evaluation to determine whether an on-site assessment is necessary. DEQ or VDACS makes this determination based on the proximity of the operation to surface waters, whether the confined animals have access to surface waters in the production area, whether the nearby surface waters are impaired, and whether a waste storage system is present at the operation. During an evaluation, DEQ or VDACS may determine that an operation poses little or no risk to water quality and does not require an on-site assessment. DEQ or VDACS may also conduct a "non-assessment site visit" to support the in-office evaluation. If DEQ or VDACS determines that an on-site assessment is required, DEQ or VDACS will contact the farmer and schedule the on-site assessment. Participation in the Small AFO Strategy is voluntary, and DEQ or VDACS cannot access a farm without the owner or operator's consent. In addition, the owner or operator must be present for the on-site assessment.

The purpose and processes outlined in the Small AFO Strategy have not changed since EPA's 2015 assessment. However, at the time of data collection for EPA's 2015 assessment, the Small AFO Strategy was a new program and had not performed the majority of its desktop assessments. Since then, the program has assessed 100% of its existing facility universe and performed all appropriate onsite evaluations. EPA's 2015 assessment report included observations concluding that EPA was not provided access to documentation and was unable to determine the overall effectiveness of the Small AFO Strategy at identifying and addressing water quality issues at individual animal agriculture operations. The report also noted that the Small AFO Strategy is designed only to identify operation deficiencies at an AFO that would result in a discharge and does not document all BMPs implemented on farms assessed. EPA was therefore also unable to determine the full scope of BMP implementation under the Small AFO strategy.

Table 17: VA Actions to Address 2015 Findings – Small AFO Strategy

| 2015 Finding  | VA Actions to Address Findings   |
|---|--|
| In FY2013, the Small AFO Evaluation and Assessment Strategy had a budget of \$282,593 and 3.325 FTEs dedicated to program implementation and support. | DEQ's 2021 assessment questionnaire response states:  "Human resources for Virginia DEQ's VPDES CAFO, VPA AFO, VPA Poultry, and Small AFO program implementation have remained relatively flat since 2015 with the following qualifications:  In the DEQ Piedmont Regional Office (PRO), one FTE dedicated to animal waste programs was eliminated due to state budget limitations. However, following allocation of funds for DEQ |
|   | FTEs related to Virginia Executive Order 6 that focused on ensuring DEQ had the resources necessary to carry out the agency's mission, another PRO FTE was created that splits responsibilities between the biosolids and AFO/CAFO programs.   |

|   | Some FTEs are currently or will soon be vacant due to staff retirements; at this time, it is unknown if these positions will be filled."   |
|---|--|
| Virginia estimated that there are approximately 823 unpermitted AFOs in Virginia that are candidates for assessment under the Small AFO Strategy.   | DEQ's 2021 assessment questionnaire response lists 996 Small AFOs in Virginia handled through the Small AFO Strategy Program. Only unpermitted operations are handled through the Small AFO Strategy. 20 Small AFOs are permitted under the VPA Permit Program.  |
| As of August 2013, Virginia reported that 335 of 823 eligible candidates had been evaluated using the Small AFO Strategy, resulting in 105 on-site assessments. During these assessments, Virginia determined that only 19 facilities had water quality risks or impacts requiring corrective measures. EPA | As of EPA's 2021 assessment, Virginia had evaluated all eligible Small AFO Strategy candidates, completing 996 evaluations resulting in 235 on-site assessments since the inception of the program. No on-site assessments were completed during EPA's reporting period.   |
| was not provided access to further documentation and thus was unable to determine the overall effectiveness of the Small AFO Strategy at identifying and addressing water quality issues at individual animal agriculture operations.   | Therefore, no documentation of water quality risks or impacts identified using the Small AFO Strategy was available for this report, and EPA remains unable to directly assess the effectiveness of the Small AFO Strategy at identifying and addressing water quality issues at individual animal agriculture operations.                       |
|   | However, although no facilities required on-site assessment during SFY2019-2020, DEQ's 2021 questionnaire reports that since the inception of the program, the most common water quality risks that have been observed in past inspections are lack of NMP implementation, absence of manure storage, and unrestricted stream access for cattle. |
| The Small AFO Strategy is designed only to identify operation deficiencies at an AFO that would result in a discharge. The Small AFO Strategy is not designed to document all BMPs implemented on farms assessed.   | Unchanged since 2015 assessment. Evaluations and assessments conducted through the Small AFO Strategy are intended to identify water quality and discharge risks, and are not designed to document BMP implementation.   |
| Virginia's Small AFO Strategy does not require any priority BMPs as minimum components of any outcome. Instead, Virginia works with individual farmers to identify appropriate BMPs to address potential water quality issues.  | Unchanged since 2015 assessment. DEQ's 2021 questionnaire response emphasizes that the program is voluntary, and that Small AFO owners are the primary decisionmakers regarding BMP implementation in response to water quality risks associated with their operations.  |

# **12.1 Facility Universe**

A Small AFO is defined as any AFO that does not meet Virginia's thresholds for required permit coverage.

These thresholds are as follows:

#### VPA AFO General Permit thresholds\*:

• 300 animal units means 300,000 pounds of live animal weight, or the following numbers and types of animals:

- 300 slaughter and feeder cattle;
- 200 mature dairy cattle (whether milked or dry cows);
- 750 swine each weighing over 25 kilograms (approximately 55 pounds);
- 150 horses;
- 3,000 sheep or lambs;
- 16,500 turkeys;
- 30,000 laying hens or broilers.

VPA Poultry Waste Management General Permit thresholds\*\*:

• 200 or more animal units of poultry equates to 20,000 chickens or 11,000 turkeys, regardless of animal age or sex.

Farmers may use these thresholds as well as a checklist provided by DEQ to determine if their operation qualifies as a Small AFO.

Although not required, Small AFOs may voluntarily apply for VPA permits. As of August 20, 2021, 20 Small AFOs have elected to obtain permit coverage. Table 19 shows the number of facilities handled through the Small AFO Strategy Program and the number of Small AFOs covered by VPA permits across DEQ regional offices.

| <b>DEQ Regional Office</b> | Small AFO Strategy Candidates | Small AFOs covered by VPA Permit |
|----------------------------|-------------------------------|----------------------------------|
| Tidewater                  | 8                             | 1                                |
| Piedmont                   | 41                            | 4                                |
| Northern                   | 76                            | 3                                |
| Valley                     | 708                           | 11                               |
| Blue Ridge                 | 157                           | 1                                |
| Southwest                  | 6                             | 0                                |
| VA Total                   | 996                           | 20                               |

#### 12.2 Resources Allocated

As indicated in the questionnaire, at the commencement of implementation of the Small AFO Strategy, all known Small AFOs were evaluated by DEQ and VDACS staff. After the initial implementation, it was expected that the number of AFOs needing evaluation would significantly decrease. DEQ indicated that human resource needs for implementation of the Small AFO Strategy have remained relatively constant since 2015. Furthermore, there are no changes expected to be made to the Strategy as it currently allows the agencies to act within the agency's respective authority.

During the interview, VDACS staff explained that when the strategy started, DEQ typically performed the evaluation or notified VDACS. The number of assessments performed has decreased in recent years as all known Small AFOs were evaluated and assessed, as necessary. VDACS has been performing mainly complaint responses under the ASA Program in recent years.

<sup>\*</sup>AFO also utilizes a liquid manure collection and storage system

<sup>\*\*</sup>AFO manages poultry waste (dry poultry litter and composted dead poultry)

In terms of outreach to farmers to enhance implementation of the Strategy, DEQ utilizes required NMP plan writer trainings, operator trainings, one-on-one time during routine inspections, outreach meetings, agricultural field days, written communication sent via mail and email and the DEQ external website. DEQ also uses opportunities, when presented, to provide information to growers through newsletters sent by agricultural organizations, VA Cooperative Extension and SWCDs.

### **12.3 Data Systems**

No changes have occurred to the Small AFO Strategy procedures.

# 12.4 Compliance and Enforcement

The annual need for program activity has decreased significantly since the initial effort to evaluate all known Small AFOs. For example, DEQ has conducted 996 evaluations since the inception of the Small AFO Strategy, only 2 of which occurred during the SFY2019-2020 timeframe. Table 20 shows the regional distribution of farms evaluated through the Small AFO Strategy.

Table 19: Small AFO Strategy Implementation – AFO Evaluation Rates

| DEQ Regional Office | AFO Evaluations Completed in SFY2019-2020 | AFO Evaluations Since Inception of Small AFO Strategy |
|---------------------|---|---|
| Tidewater           | 1   | 8   |
| Piedmont            | 0   | 41  |
| Northern            | 1   | 76  |
| Valley              | 0   | 708   |
| Blue Ridge          | 0   | 157   |
| Southwest           | 0   | 6   |
| VA Total            | 2   | 996   |
| (# in CBW)          | (2)                                       | (816)   |

Similarly, DEQ has performed 235 On-Site Assessments since the inception of the program, none of which were completed in the SFY2019-2020 timeframe. The regional distribution of these assessments is shown in Table 21. So far, the most common types of water quality risks or impacts that have been observed during these assessments are as follows: NMPs not implemented; no manure storage installed; unrestricted stream access for cattle.

Table 20: Small AFO Strategy Implementation - On-Site Assessments

| DEQ Regional<br>Office | AFO On-Site<br>Assessments in<br>SFY2019-2020 | AFO On-Site Assessments since inception of Small AFO Strategy |
|------------------------|---|---|
| Tidewater              | 0   | 2   |
| Piedmont               | 0   | 0   |
| Northern               | 0   | 28  |
| Valley                 | 0   | 194   |
| Blue Ridge             | 0   | 6   |
| Southwest              | 0   | 5   |
| VA Total<br>(# in CBW) | 0<br>(0)                                      | 235<br>(225)  |

The On-Site Assessment component of the Small AFO Strategy allows state environmental agencies to determine if an unpermitted AFO's activities are impacting water quality through discharge of pollutants to state waters. As records are not required to determine a discharge, records are not typically used to make this determination. The on-site inspection includes discussion and assessment of the production area, storm water conveyances, animal access to surface water, mortality handling, and land application areas. Any noncompliance identified during the assessment is discussed on-site with the operator and addressed formally in a follow-up letter that communicates the relevant water quality concerns and issues guidance on any further requirements.

DEQ has indicated that corrective voluntary actions that have resolved water quality issues on noncompliant farms include the implementation of Nutrient Management Plans; manure storage installation; and the restriction of cattle from streams. DEQ has seen and documented water quality benefits through the implementation of the Small AFO Strategy. No facilities have been required to obtain a VPA permit to address water quality issues under the Strategy.

# **12.5 WIP Implementation Goals**

Though the Small AFO Strategy does not require implementation of any specific management practices, changes are required in cases of noncompliance. DEQ indicated that a Small AFO owner may employ any of the BMPs identified by the Phase III WIP to address the water quality risks or impacts of their operation. In these cases, the farmer proposes which BMPs will be implemented and DEQ and VDACS determine whether the proposed BMPs are appropriate. These BMPs are considered voluntary. Any BMPs that are implemented would be eligible to count towards the 2025 Goal if they have been approved for use by the CBP partnership. If the farmer agrees, the operation works with the local SWCD to document the BMPs. However, because the Strategy does not require construction or implementation of any new BMPs, the Small AFO Strategy will not contribute significantly to the current WIP goals for BMP implementation going forward.

# 12.6 Small AFO Evaluation and Assessment Strategy - Observations

- Based on the information provided by DEQ, the majority of the Small AFOs were evaluated and/or
  assessed after the program was established. As such, it does not appear that the Small AFO Strategy will
  be a significant contributor to achieving the 2025 WIP goals moving forward.
- Staff from the DEQ and VDACS continue to evaluate Small AFOs as the need arises. The Strategy
  procedures are used when a new facility is brought to the staff's attention. The agencies do not expect
  to need to make changes to the Strategy as it currently allows each agency to act within its respective
  authority.
- The Small AFO Strategy does not require implementation of any specific management practices. To address any water quality issues, the farmer proposes which BMPs will be implemented and DEQ and VDACS determine whether the proposed BMPs are appropriate.
- Publicly accessible information about the Small AFO Strategy is lacking. The publicly accessible
  information about the Small AFO Strategy is a brief paragraph on DEQ's Animal Agriculture Waste
  webpage. Because information is not publicly accessible, it appears that additional information about
  the program can only be accessed by contacting a DEQ staff member directly.
  - Recommendation: DEQ's webpage should provide additional information regarding the program
    applicability, as well as any other tools associated with this program.
- DEQ has a Small AFO Strategy Self-assessment checklist that a farmer can use to determine if they are

an AFO and if there are potential water quality concerns at their facility; however, this document is not available, nor is it referenced, on the DEQ webpages.

o **Recommendation:** DEQ should make the Small AFO Strategy Self-assessment checklist available online.

### 13.0 Recommendations

Virginia should consider implementing data management SOPs to document processes. (Section 6.1, Virginia's Animal Agriculture WIP BMPs – Observations)

DCR should continue to incentivize development and implementation of NMPs, including at small, unpermitted facilities. (Section 7.6, Nutrient Management Program – Observations)

Recognizing that Virginia has committed to implement nutrient management on an additional 366,486 acres in the CBW by 2025, DCR should evaluate the Nutrient Management Program to identify where opportunities exist to better utilize existing staff and resources to improve productivity, including evaluating how the current program management structure, and implementation of incentive program requirements, are or are not supporting increased implementation of NMPs by DCR and SWCDs. (Section 7.6, Nutrient Management Program – Observations)

Virginia should continue to identify opportunities for unpermitted agriculture operations to implement approved NMPs. The Commonwealth would need to approve NMPs for an additional 90,000 acres per year in the CBW, approximately, to meet the 2025 nutrient management goal, starting in 2022. (Section 7.6, Nutrient Management Program – Observations)

DCR should complete the plan for marketing the availability of conservation BMPs funding for to eligible agricultural producers. (Section 7.6, Nutrient Management Program – Observations)

DEQ should complete the deployment of the MyPortal online VPA Poultry Waste permit data reporting system to enable growers to submit their annual records electronically in 2023. (Section 8.8, VPA Program – Observations)

DEQ should ensure adequate staffing to increase compliance assurance needs associated with poultry waste reporting. (Section 8.8, VPA Program – Observations)

DEQ has existing SOPs for implementing any new requirements. However, because adhering to the updated legislation may require staffing changes, DEQ should consider a department-wide training to help ensure that all staff are adequately prepared for uniform implementation. (Section 8.8, VPA Program – Observations)

As resources allow, DEQ should explore opportunities to increase permit holders' awareness of common noncompliance issues as part of DEQ's existing compliance assistance services, similar to our recommendation for the VPA program. (Section 8.8, VPA Program, Section 9.6, VPDES CAFO Program – Observations)

DCR should evaluate whether increased staffing is needed in order for SWCDs to conduct 100 inspections in the next FY given only six inspections were conducted in the previous FY. (Section 10.6, RMP Program – Observations)

VDACS should include in the ASA plan all activities that are causing or will cause pollution, regardless of whether they are within the scope of the complaint. (Section 11.6, ASA Program – Observations)

DEQ's webpage should provide additional information regarding the program applicability, as well as any other tools associated with this program. (Section 12.6, Small AFO Evaluation and Assessment

Strategy – Observations)

DEQ should make the Small AFO Strategy Self-assessment checklist available online. (Section 12.6, Small AFO Evaluation and Assessment Strategy – Observations)

#### 14.0 References

- Chesapeake Progress. 2021, September. 2025 Watershed Implementation Plans (WIPs). https://www.chesapeakeprogress.com/clean-water/watershed-implementation-plans
- Commonwealth of Virginia. 2021, November. FY 2021 Chesapeake Bay and Virginia Waters Clean-Up Plan. <a href="https://rga.lis.virginia.gov/Published/2021/RD682/PDF">https://rga.lis.virginia.gov/Published/2021/RD682/PDF</a>
- Commonwealth of Virginia. 2019, August 23. Chesapeake Bay TMDL Phase III Watershed Implementation Plan. <a href="https://www.deq.virginia.gov/home/showpublisheddocument/4481/637469262077670000">https://www.deq.virginia.gov/home/showpublisheddocument/4481/637469262077670000</a>
- DCR. 2021a, December. *Resource Management Plan Program Highlights Report, Sept. 1, 2020 June 30, 2021.* https://www.dcr.virginia.gov/soil-and-water/document/RMP-annual-report-2021.pdf
- DCR. 2021b, August. DCR's responses to the EPA questionnaire Virginia Animal Agriculture Program Assessment 2021 Questionnaire.
- DCR. 2022a, June. Virginia Soil and Water Conservation Board Policy and Procedures on Soil and Water Conservation District Cost-share and Technical Assistance Funding Allocations (Fiscal Year 2023). <a href="https://www.dcr.virginia.gov/laws-and-regulations/document/swcd-cost-share-policy-fy23.pdf">https://www.dcr.virginia.gov/laws-and-regulations/document/swcd-cost-share-policy-fy23.pdf</a>
- DCR, 2022b, July. BMP Tax Credit Program. <a href="https://www.dcr.virginia.gov/soil-and-water/costshar3">https://www.dcr.virginia.gov/soil-and-water/costshar3</a>.
- DEQ. 2021a, August. DEQ's responses to the EPA questionnaire Virginia Animal Agriculture Program Assessment 2021 Questionnaire.
- DEQ. 2021b, August. 2020 Virginia Nonpoint Source Management Program Annual Report. https://www.deq.virginia.gov/home/showpublisheddocument/10794/637680997177030000
- EPA. 2020, July 29. Evaluation of Virginia's 2018-2019 and 2020-2021 Milestones.

  <a href="https://www.epa.gov/sites/default/files/2020-07/documents/va-2018-2019-2020-2021-final-milestone-evaluation.pdf">https://www.epa.gov/sites/default/files/2020-07/documents/va-2018-2019-2020-2021-final-milestone-evaluation.pdf</a>
- EPA. 2019, December 19. Evaluation of Virginia's Phase III Watershed Implementation Plan (WIP). https://www.epa.gov/sites/default/files/2019-12/documents/va.pdf
- EPA. 2010, December 29. Chesapeake Bay TMDL Executive Summary.

  <a href="https://www.epa.gov/sites/default/files/2014-12/documents/bay tmdl">https://www.epa.gov/sites/default/files/2014-12/documents/bay tmdl</a> executive summary final 12.29.10 final 1.pdf
- USDA (United States Department of Agriculture). 2019. 2017 Census Publications. https://www.nass.usda.gov/Publications/AgCensus/2017/index.php
- VASWCD (Virginia Association of Soil and Water Conservation Districts), 2022. Virginia Farm Voluntary Ag BMP Inventory. https://vaswcd.org/virginia-farm-voluntary-agricultural-bmp-inventory.

- VDACS (Virginia Department of Agriculture and Consumer Services). 2021a, August 9. Virginia Agricultural Stewardship Act Annual Report, For Program Year April 1, 2020 March 31, 2021. https://www.vdacs.virginia.gov/pdf/stewardship-report.pdf
- VDACS. 2021b, August. VDACS's responses to the EPA questionnaire Virginia Animal Agriculture Program Assessment 2021 Questionnaire.
- University of Maryland. 2019, July. BMP Tax Credit Research Memorandum.

  <a href="https://agnr.umd.edu/sites/agnr.umd.edu/files/files/documents/Hughes%20Center/BMP%20Tax%20Credit%20Research%20Memorandum.pdf">https://agnr.umd.edu/sites/agnr.umd.edu/files/files/documents/Hughes%20Center/BMP%20Tax%20Credit%20Research%20Memorandum.pdf</a>