



Exempt Action Proposed Regulation Agency Background Document

[NOTE: Section 10.1-104.9 of the Code of Virginia establishes a two stage exempt process for the promulgation of these regulations except that the Department of Planning and Budget shall prepare an economic impact analysis at the proposed stage. As such, this form includes both provisions from the proposed exempt form as well as the full APA proposed form in order to provide additional background on the action for DPB and the public that will be commenting on this proposed regulatory action.]

Agency name	Virginia Soil and Water Conservation Board
Virginia Administrative Code (VAC) citation	4VAC50-70
Regulation title	Resource Management Plans
Action title	Establishment of new Resource Management Plan Regulations (4VAC50-70-10 et seq.) that represent a balanced process by which farmers may voluntarily implement a high level of BMPs that are protective of water quality and that may be applied towards necessary nutrient and sediment reductions associated with the Chesapeake Bay Watershed Implementation Plan and other TMDLs.
Date this document prepared	April 30, 2012

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 14 (2010) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

Brief summary

In a short paragraph, please summarize all substantive provisions of new regulations or changes to existing regulations that are being proposed in this regulatory action.

In accordance with Chapter 781 of the 2011 Virginia Acts of Assembly (HB1830) the Virginia Soil and Water Conservation Board authorized the establishment of new regulations that clarify and specify the criteria that must be included in a resource management plan and the processes by which a Certificate of RMP Implementation is issued and maintained. The intent of the regulatory action is to encourage farm

owners and operators to voluntarily implement a high level of BMPs on their farmlands in order to be protective of water quality and for them to then benefit from the following legal provision stating that “notwithstanding any other provision of law, agricultural landowners or operators who fully implement and maintain the applicable components of their resource management plan, in accordance with the criteria for such plans set out in § 10.1-104.[8] and any regulations adopted thereunder, shall be deemed to be in full compliance with (i) any load allocation contained in a total maximum daily load (TMDL) established under § 303(d) of the federal Clean Water Act addressing benthic, bacteria, nutrient, or sediment impairments; (ii) any requirements of the Virginia Chesapeake Bay TMDL Watershed Implementation Plan; and (iii) applicable state water quality requirements for nutrients and sediment”.

The key substantive elements of this proposed regulatory action include:

- Establishment of minimum standards of a resource management plan;
- Processes for the development, updating, and approval of a resource management plans by Resource Management Plan Reviewers;
- Processes to ensure the implementation of a resource management plan and for issuance of a Certificate of Resource Management Plan Implementation;
- Processes associated with conducting inspections by the RMP Reviewer and ensuring RMP compliance after Certificate issuance by the Department of Conservation and Recreation including issuance of deficiency notices and development and implementation of corrective action agreements;
- Procedures for the review of duties performed by local soil and water conservation districts; and
- Establishment of qualifications and certification processes for Resource Management Plan Developers and the issuance or revocation of a Resource Management Plan Developer Certificate by the Department of Conservation and Recreation.

Acronyms and Definitions

Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the “Definition” section of the regulations.

Key acronyms and terms utilized in this discussion (and often outlined in the definitions) include:

- “Best management practice” or “BMP” means structural and nonstructural practices that manage soil loss, nutrient losses, or other pollutant sources to minimize pollution of water resources and improve water quality.
- “Board” means the Virginia Soil and Water Conservation Board.
- “Department” means the Department of Conservation and Recreation.
- “EPA” means the Environmental Protection Agency.
- “Operator” means a person who exercises managerial control over the management unit.
- “Owner” means a person who owns land included in a management unit.
- “Resource management plan” or “RMP” means a plan developed and implemented pursuant to the standards established by this chapter.
- “Review authority” means a soil and water conservation district or the department where no soil and water conservation district exists, that is authorized under this chapter to determine the adequacy of a resource management plan and perform other duties specified by this chapter.

- "RMP developer" means an individual who meets the qualifications established by this chapter to prepare or revise a resource management plan.
- "Soil and water conservation district" or "district" means a political subdivision of the Commonwealth organized in accordance with the provisions of §10.1-500 et seq. of the Code of Virginia.
- "Total maximum daily load" or "TMDL" means a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations for point source discharges, and load allocations for nonpoint sources or natural background or both, and must include a margin of safety and account for seasonal variations.
- "USDA" means United State Department of Agriculture.
- "WIP" mean Watershed Implementation Plan associated with the Chesapeake Bay Total Maximum Daily Load.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant citations to the Code of Virginia or General Assembly chapter number(s), if applicable, and (2) promulgating entity, i.e., agency, board, or person. Your citation should include a specific provision authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency/board/person's overall regulatory authority.

Chapter 781 of the 2011 Virginia Acts of Assembly (HB1830) authorized the Virginia Soil and Water Conservation Board to establish regulations that would specify the criteria to be included in a resource management plan and sets out the regulatory process by which they shall be promulgated. The proposed regulations meet the intent of § 10.1-104.7 and remain true to the regulatory criteria framework set out in § 10.1-104.8. The regulatory process followed is in accordance with § 10.1-104.9.

ARTICLE 1.1: Resource Management Plans (§ 10.1-104.7 et seq.)

§ 10.1-104.7. Resource management plans; effect of implementation; exclusions.

A. Notwithstanding any other provision of law, agricultural landowners or operators who fully implement and maintain the applicable components of their resource management plan, in accordance with the criteria for such plans set out in § 10.1-104.8 and any regulations adopted thereunder, shall be deemed to be in full compliance with (i) any load allocation contained in a total maximum daily load (TMDL) established under § 303(d) of the federal Clean Water Act addressing benthic, bacteria, nutrient, or sediment impairments; (ii) any requirements of the Virginia Chesapeake Bay TMDL Watershed Implementation Plan; and (iii) applicable state water quality requirements for nutrients and sediment.

B. The presumption of full compliance provided in subsection A shall not prevent or preclude enforcement of provisions pursuant to (i) a resource management plan or a nutrient management plan otherwise required by law for such operation, (ii) a Virginia Pollutant Discharge Elimination System permit, (iii) a Virginia Pollution Abatement permit, or (iv) requirements of the Chesapeake Bay Preservation Act (§ 10.1-2100 et seq.).

C. Landowners or operators who implement and maintain a resource management plan in accordance with this article shall be eligible for matching grants for agricultural best management practices provided through the Virginia Agricultural Best Management Practices Cost-Share Program administered by the Department in accordance with program eligibility rules and requirements. Such landowners and operators may also be eligible for state tax credits in accordance with §§ 58.1-339.3 and 58.1-439.5.

D. Nothing in this article shall be construed to limit, modify, impair, or supersede the authority granted to the Commissioner of Agriculture and Consumer Services pursuant to Chapter 4 (§ 3.2-400 et seq.) of Title 3.2.

E. Any personal or proprietary information collected pursuant to this article shall be exempt from the Virginia Freedom of Information Act (§ 2.2-3700 et seq.), except that the Director may release information that has been transformed into a statistical or aggregate form that does not allow identification of the persons who supplied, or are the subject of, particular information. This subsection shall not preclude the application of the Virginia Freedom of Information Act (§ 2.2-3700 et seq.) in all other instances of federal or state regulatory actions.

§ 10.1-104.8. Resource management plans; criteria.

A. The Soil and Water Conservation Board shall by regulation, and in consultation with the Department of Agriculture and Consumer Services and the Department of Environmental Quality, specify the criteria to be included in a resource management plan.

B. The regulations shall:

1. Be technically achievable and take into consideration the economic impact to the agricultural landowner or operator;

2. Include (i) determinations of persons qualified to develop resource management plans and to perform on-farm best management practice assessments; (ii) plan approval or review procedures if determined necessary; (iii) allowable implementation timelines and schedules; (iv) determinations of the effective life of the resource management plans taking into consideration a change in or a transfer of the ownership or operation of the agricultural land, a material change in the agricultural operations, issuance of a new or modified total maximum daily load (TMDL) implementation plan for the Chesapeake Bay or other local total maximum daily load water quality requirements, and a determination pursuant to Chapter 4 (§ 3.2-400 et seq.) of Title 3.2 that an agricultural activity on the land is creating or will create pollution; (v) factors that necessitate renewal or new plan development; and (vi) a means to determine full implementation and compliance with the plans including reporting and verification;

3. Provide for a process by which an on-farm assessment of all reportable best management practices currently in place, whether as part of a cost-share program or through voluntary implementation, shall be conducted to determine their adequacy in achieving needed on-farm nutrient, sediment, and bacteria reductions;

4. Include agricultural best management practices sufficient to implement the Virginia Chesapeake Bay TMDL Watershed Implementation Plan and other local total maximum daily load water quality requirements of the Commonwealth; and

5. Specify that the required components of each resource management plan shall be based upon an individual on-farm assessment. Such components shall comply with on-farm water quality objectives as set forth in subdivision B 4, including best management practices identified in this subdivision and any other best management practices approved by the Board or identified

in the Chesapeake Bay Watershed Model or the Virginia Chesapeake Bay TMDL Watershed Implementation Plan.

a. For all cropland or specialty crops such components shall include the following, as needed and based upon an individual on-farm assessment:

(1) A nutrient management plan that meets the nutrient management specifications developed by the Department;

(2) A forest or grass buffer between cropland and perennial streams of sufficient width to meet water quality objectives and consistent with Natural Resources Conservation Service standards and specifications;

(3) A soil conservation plan that achieves a maximum soil loss rate of "T," as defined by the Natural Resources Conservation Service; and

(4) Cover crops meeting best management practice specifications as determined by the Natural Resources Conservation Service or the Virginia Agricultural Best Management Practices Cost-Share Program.

b. For all hayland, such components shall include the following, as needed and based upon an individual on-farm assessment:

(1) A nutrient management plan that meets the nutrient management specifications developed by the Department;

(2) A forest or grass buffer between cropland and perennial streams of sufficient width to meet water quality objectives and consistent with Natural Resources Conservation Service standards and specifications; and

(3) A soil conservation plan that achieves a maximum soil loss rate of "T," as defined by the Natural Resources Conservation Service.

c. For all pasture, such components shall include the following, as needed and based upon an individual on-farm assessment:

(1) A nutrient management plan that meets the nutrient management specifications developed by the Department;

(2) A system that limits or prevents livestock access to perennial streams; and

(3) A pasture management plan or soil conservation plan that achieves a maximum soil loss rate of "T," as defined by the Natural Resources Conservation Service.

§ 10.1-104.9. Regulations under this article.

Regulations adopted by the Board for the enforcement of this article shall be subject to the requirements set out in §§ 2.2-4007.03, 2.2-4007.04, 2.2-4007.05, and 2.2-4026 through 2.2-4030 of the Administrative Process Act (§ 2.2-4000 et seq.), and shall be published in the Virginia Register of Regulations. The Board shall convene a stakeholder group to assist in development of these regulations, with representation from agricultural and environmental interests as well as Soil and Water Conservation Districts. All other provisions of the Administrative Process Act shall not apply to the adoption of any regulation pursuant to this article. After the close of the 60-day comment period, the Board may adopt a final regulation, with or without changes. Such regulation shall become effective 15 days after publication in the Virginia Register of Regulations, unless the Board has withdrawn or suspended the regulation or a later date has been set by the Board. The Board shall also hold at least one public hearing on the proposed regulation during the 60-day comment period. The notice for such public hearing shall include the date, time, and place of the hearing.

Purpose

Please explain the need for the new or amended regulation by (1) detailing the specific reasons why this regulatory action is essential to protect the health, safety, or welfare of citizens, and (2) discussing the goals of the proposal, the environmental benefits, and the problems the proposal is intended to solve.

The regulation has been developed to implement a process by which farmers may improve the water quality of Virginia's rivers and the Chesapeake Bay through the voluntary implementation of a high level of BMPs on their property and thereby be certified for a 9-year period as being compliant with (i) any load allocation contained in a total maximum daily load (TMDL) established under § 303(d) of the federal Clean Water Act addressing benthic, bacteria, nutrient, or sediment impairments; (ii) any requirements of the Virginia Chesapeake Bay TMDL Watershed Implementation Plan; and (iii) applicable state water quality requirements for nutrients and sediment. Such action will protect the health, safety, and welfare of citizens through the water quality improvements that will result through implementation of the proposed regulations.

Within the Chesapeake Bay watershed, this regulatory action will address the Environmental Protection Agency's (EPA) established requirements within the state Watershed Implementation Plans (WIP) as part of a larger Chesapeake Bay Total Maximum Daily Load (TMDL) accountability framework. Virginia's Phase I WIP was approved by EPA on December 29, 2010. Additionally, as part of the accountability framework, the Commonwealth submitted preliminary milestones for 2012-2013 to EPA on November 4, 2011 and final programmatic milestones on January 6, 2012. These represent the first set of two-year milestone commitments associated with the Bay TMDL. Virginia submitted a draft Phase II WIP document on December 15, 2011 and a final Phase II WIP on March 30, 2012. This document supplements the strategies offered in Virginia's Phase I WIP. The resource management plan regulations are a component of the WIP and the milestones. The RMP regulations set forth specific criteria for the implementation of a suite of agricultural BMPs and will serve to promote greater and more consistent use of voluntary agricultural practices across the state. The RMP regulations, though voluntary, provide an incentive to farmers who utilize agricultural BMPs in that they will receive a "safe harbor" from future mandatory requirements related to the Chesapeake Bay TMDL. They may also be used as a baseline for participation in the expanded nutrient credit exchange program. By incentivizing such practices, the RMP program can serve as a mechanism for localities to implement their agricultural strategies and BMPs.

This regulatory approach was also determined to be the best path forward in order to meet the necessary nutrient and sediment reductions and to protect the health, safety, or welfare of citizens. In 2010, the Department of Conservation and Recreation developed several draft bills for the consideration of the Administration and the public that would have made livestock exclusion and nutrient management planning mandatory. These draft proposals were floated to stakeholders for comment. In response to these comments and discussions with stakeholders and the Administration and in lieu of these mandatory actions, a more progressive piece of legislation establishing a voluntary resource management plan approach was introduced and enacted by the General Assembly and Governor.

Accordingly, the resulting legislation [Chapter 781 of the 2011 Virginia Acts of Assembly (HB1830)] authorized the Virginia Soil and Water Conservation Board to establish new regulations that clarify and

specify the criteria that must be included in a resource management plan and the processes by which a Certificate of RMP Implementation is issued and maintained.

As specified in the resulting law, it is the goal of these regulations to:

1. Be technically achievable and take into consideration the economic impact to the agricultural landowner or operator;
2. Include (i) determinations of persons qualified to develop resource management plans and to perform on-farm best management practice assessments; (ii) plan approval or review procedures if determined necessary; (iii) allowable implementation timelines and schedules; (iv) determinations of the effective life of the resource management plans taking into consideration a change in or a transfer of the ownership or operation of the agricultural land, a material change in the agricultural operations, issuance of a new or modified total maximum daily load (TMDL) implementation plan for the Chesapeake Bay or other local total maximum daily load water quality requirements, and a determination pursuant to Chapter 4 (§ 3.2-400 et seq.) of Title 3.2 that an agricultural activity on the land is creating or will create pollution; (v) factors that necessitate renewal or new plan development; and (vi) a means to determine full implementation and compliance with the plans including reporting and verification;
3. Provide for a process by which an on-farm assessment of all reportable best management practices currently in place, whether as part of a cost-share program or through voluntary implementation, shall be conducted to determine their adequacy in achieving needed on-farm nutrient, sediment, and bacteria reductions;
4. Include agricultural best management practices sufficient to implement the Virginia Chesapeake Bay TMDL Watershed Implementation Plan and other local total maximum daily load water quality requirements of the Commonwealth; and
5. Specify that the required components of each resource management plan shall be based upon an individual on-farm assessment. Such components shall comply with on-farm water quality objectives as set forth in subdivision B 4 [directly above], including best management practices identified in this subdivision and any other best management practices approved by the Board or identified in the Chesapeake Bay Watershed Model or the Virginia Chesapeake Bay TMDL Watershed Implementation Plan.

On a statewide basis, the voluntary implementation of these regulations will provide substantial incentives to farmers to implement high priority water quality conservation practices and specifically within the Chesapeake Bay watershed, implementation will help the Commonwealth meet its commitments outlined in the Phase II Watershed Implementation Plan and provide for “agricultural certainty”.

Substance

Please briefly identify and explain new substantive provisions (for new regulations), substantive changes to existing sections or both where appropriate. (More detail about all provisions or changes is requested in the “Detail of changes” section.)

This entire regulatory action involves the promulgation of a new Chapter of regulations (Chapter 70) by the Virginia Soil and Water Conservation Board titled Resource Management Plans (4VAC50-70-10 et seq.).

The key substantive elements of this proposed regulatory action include:

- Establishment of minimum standards of a resource management plan (4VAC50-70-40);
- Processes for the development, updating, and approval of a resource management plans by Resource Management Plan Reviewers (4VAC50-70-50) and (4VAC50-70-60);
- Processes to ensure the implementation of a resource management plan and for issuance of a Certificate of Resource Management Plan Implementation (4VAC50-70-70) and (4VAC50-70-80);
- Processes associated with conducting inspections by the RMP Reviewer and ensuring RMP compliance after Certificate issuance by the Department of Conservation and Recreation including issuance of deficiency notices and development and implementation of corrective action agreements (4VAC50-70-90) and (4VAC50-70-100);
- Procedures for the review of duties performed by local soil and water conservation districts ; (4VAC50-70-130) and
- Establishment of qualifications and certification processes for Resource Management Plan Developers and the issuance or revocation of a Resource Management Plan Developer Certificate by the Department of Conservation and Recreation (4VAC50-70-140).

Issues

Please identify the issues associated with the proposed regulatory action, including:

- 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;*
- 2) the primary advantages and disadvantages to the agency or the Commonwealth; and*
- 3) other pertinent matters of interest to the regulated community, government officials, and the public.*

If the regulatory action poses no disadvantages to the public or the Commonwealth, please indicate.

The framework and content of this regulatory action largely tracks the specifics outlined in the Code of Virginia regarding the promulgation of these regulations. As such, limited discretion regarding voluntary compliance requirements was available. However, the Department working with the Regulatory Advisory Panel to develop the proposed regulations was careful to minimize, where latitude did exist, disadvantages of the program and to develop a program that will have water quality advantages for the general public and compliance protection for the farmer when under Certificate of RMP Implementation. Voluntary participation in this regulatory program will be an advantage to the Commonwealth as it will help the Commonwealth meet its commitments outlined in the Phase II Watershed Implementation Plan and other TMDLs and provide for “agricultural certainty”.

Additional information regarding the advantages and disadvantages to the public may be found in the Economic Impact discussion.

Requirements more restrictive than federal

Please identify and describe any requirements of the proposal, which are more restrictive than applicable federal requirements. Include a rationale for the more restrictive requirements. If there are no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.

These requirements are not more restrictive than federal law but they do provide for compliance with federal requirements. Subsection A of § 10.1-104.7 of the Code of Virginia stipulates that “[n]otwithstanding any other provision of law, agricultural landowners or operators who fully implement and maintain the applicable components of their resource management plan, in accordance with the criteria for such plans set out in § 10.1-104.8 and any regulations adopted thereunder, shall be deemed to be in full compliance with (i) any load allocation contained in a total maximum daily load (TMDL) established under § 303(d) of the federal Clean Water Act addressing benthic, bacteria, nutrient, or sediment impairments; (ii) any requirements of the Virginia Chesapeake Bay TMDL Watershed Implementation Plan; and (iii) applicable state water quality requirements for nutrients and sediment.”

Localities particularly affected

Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.

Localities will not be directly affected by the implementation of this agricultural related regulatory action except that any improvements in water quality will have a positive effect on the localities’ citizens and visitors (see Economic Impact discussion). However, should voluntary participation in this program by farmers be lagging, in 2017 the Commonwealth may have to determine whether mandatory agricultural programs need to be considered or whether the necessary load reductions will be partially reallocated to localities regulated municipal separate storm sewer systems and other regulated sources.

Public participation

Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal and the impacts of the regulated community.

The Department on behalf of the Board is seeking comments on this regulatory action, including but not limited to 1) recommended improvements to the proposed regulations, 2) the costs and benefits of the proposal, and 3) potential impacts of the proposed regulation. The Agency is also seeking information on impacts on small businesses as defined in § 2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) the probable effect of the regulation on affected small businesses, and 3) the description of less intrusive or costly alternatives for achieving the purpose of the regulation. It should be noted that the regulations set out a regulatory framework for how the program shall be implemented but participation in the program by farmers is voluntary.

Anyone wishing to submit comments may do so via the Regulatory Town Hall website (<http://www.townhall.virginia.gov>), or by mail to the Regulatory Coordinator at: Virginia Department of Conservation and Recreation, 203 Governor Street, Suite 302, Richmond, Virginia 23219. Comments

may also be emailed to the Regulatory Coordinator at: regcord@dcr.virginia.gov. Comments may also be faxed to the Regulatory Coordinator at: (804) 786-6141. All written comments must include the name and address of the commenter (e-mail addresses would also be appreciated). In order to be considered, comments must be received by midnight on the last day of the public comment period.

Following publication of the proposed regulation in the Virginia Register of Regulations, the Department has been instructed by the Board in accordance with § 10.1-104.9 of the Code of Virginia to hold a public hearing to provide opportunity for public comment. Accordingly, a public hearing will be held following the publication of the proposed stage of this regulatory action and notice of the hearing will be posted on the Virginia Regulatory Town Hall website (<http://www.townhall.virginia.gov>) and other necessary locations. Both oral and written comments may be submitted at that time.

Economic impact

Please identify the anticipated economic impact of the proposed new regulations or amendments to the existing regulation. When describing a particular economic impact, please specify which new requirement or change in requirements creates the anticipated economic impact.

<p>1) Projected cost to the state to implement and enforce the proposed regulation, including (a) fund source, and (b) a delineation of one-time versus on-going expenditures.</p>	<p>See Item #1 below</p>
<p>2) Projected cost of the <i>new regulations or changes to existing regulations</i> on localities.</p>	<p>See Item #2 below</p>
<p>3) Description of the individuals, businesses or other entities likely to be affected by the <i>new regulations or changes to existing regulations</i>.</p>	<p>See Item #3 below</p>
<p>4) Agency’s best estimate of the number of such entities that will be affected. Please include an estimate of the number of small businesses affected. Small business means a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.</p>	<p>See Item #4 below</p>
<p>5) All projected costs of the <i>new regulations or changes to existing regulations</i> for affected individuals, businesses, or other entities. Please be specific and include all costs. Be sure to include the projected reporting, recordkeeping, and other administrative costs required for compliance by small businesses. Specify any costs related to the development of real estate for commercial or residential purposes that are a consequence of the proposed regulatory changes or new regulations.</p>	<p>See Item #5 below</p>
<p>6) Beneficial impact the regulation is designed to produce.</p>	<p>See Item #6 below</p>

Key Economic Overview Statement

This regulatory action establishes the framework for the implementation of a **voluntary** process by which unregulated agricultural producers may improve the water quality of Virginia’s rivers and the Chesapeake Bay through the voluntary implementation of a high level of BMPs on their property. This program would be the first of its kind; with the main objective of providing regulatory “safe-harbors” as incentives for farmers to voluntarily carry out conservation practices on their farms that increase soil conservation and protect water quality. In return, once a suite of specified practices are fully implemented, a farmer would receive a “safe-harbor” commitment from the state (for a specified time period) that no further actions to protect water quality would be required on their farmland to comply with Total Maximum Daily Loads (TMDLs) or state nutrient and sediment loads, unless otherwise required by law.

As this program is voluntary in nature, **there are no required costs** associated with this regulatory action other than those costs identified by Department of Conservation and Recreation to implement, provide oversight to, and market the program. Similarly, Districts must bear the cost of maintaining readiness to perform tasks required by regulation including outreach and marketing. Therefore, the costs presented throughout this economic discussion represent potential case scenarios should voluntary participation be high and at the levels necessary to address the Commonwealth’s agricultural commitments outlined in the Phase II Watershed Implementation Plan and other TMDLs and provide for “agricultural certainty”.

Overview on Impacts from Agriculture on Water Quality and the Cost Effectiveness of Agricultural Best Management Practices on Addressing these Impacts

Because agriculture makes up such a large portion of the statewide land use, it has a large effect on water quality throughout the state. While fertilizers, pesticides, manure, and tilled soil are beneficial to crops, they are harmful when they are washed into local waterways, rivers and the Chesapeake Bay. When irrigation and rain events transport soil laden with nutrients into local waterways they become pollutants. Excess nutrients like nitrogen and phosphorus fuel the growth of algae, creating dense algae blooms that rob the Bay's aquatic life of sunlight and dissolved oxygen. Figure 1, taken from a brochure on Virginia’s Chesapeake Bay Act Program, and attributed to an illustration by A.J. Upson, clearly outlines in the broadest terms the impacts that pollutants have on Virginia’s aquatic resources. Animal manure including poultry litter contributes about half of the Bay watershed's agricultural nutrient load. Proper management by farmers of their animal, grain, and vegetable operations is essential for good water quality.

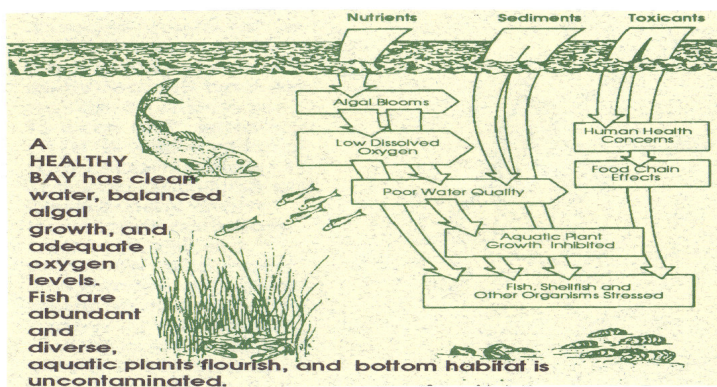
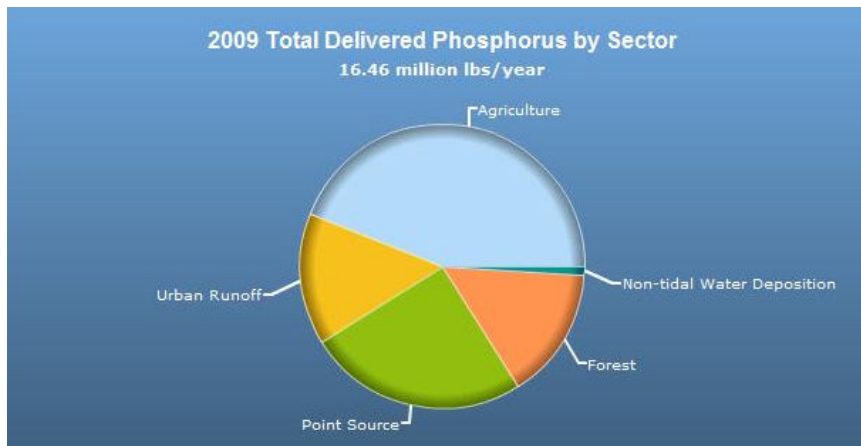
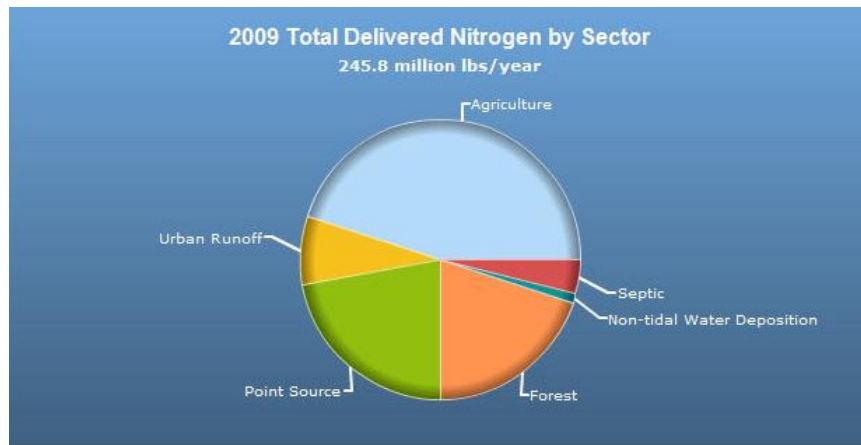
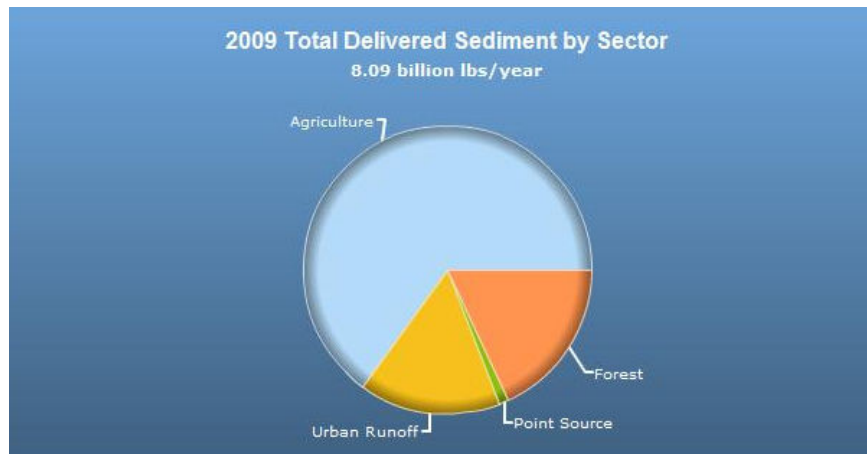


Figure 1: Effects of Pollutants in the Bay

In fact, according to the Chesapeake Bay Program, agriculture is the largest single source of nutrient and sediment pollution to the Bay and its rivers (Figure 2). Agriculture covers 23% of the land area in the Chesapeake Bay watershed, making it one of the primary land uses in the region. Figure 2 illustrates the respective contributions of pollution by source of total nitrogen, phosphorus, and sediment loads delivered to the Bay in 2009. While agriculture is the largest single source of nitrogen (45% of the total delivered load), phosphorus (44%), and sediment (65%) pollution to the Bay, agricultural lands also hold the greatest potential to play a significant part in cleaning up local waterways. By applying pollution-reducing management practices and state-of-the-art technologies to agricultural lands and livestock operations, healthy waters and a thriving farming industry can coexist.





Charts from ChesapeakeStat website: http://stat.chesapeakebay.net/?q=node/130&quicktabs_10=1

Figure 2: Sector delivered Watershed-Wide Chesapeake Bay Total Delivered Loads of Nitrogen, Phosphorous, and Sediment

Virginia is relying heavily on agriculture reductions within the Chesapeake Bay Watershed Implementation Plan. Agricultural best management practices provide a cost-effective means to lessen Virginia’s contribution to the nitrogen, phosphorous and sediment loads that are impairing the health of the Bay. Other sources of pollution are also being called on to help improve the water quality of the state’s streams, rivers and the Bay. Although the costs associated with these sectors’ efforts are more costly than agricultural BMPs, they too are decreasing their pollutant loads by upgrading wastewater treatment plants, retrofitting urban stormwater management structures, replacing failing septic tanks, and installing state-of-the-art technologies in other sectors. By providing added incentives for farmers to implement BMPs, the proposed regulations aim to increase implementation of BMPs to achieve statewide water quality goals, including Virginia’s WIP for the Bay.

States, including Virginia, are relying heavily on farmers to ramp up their stewardship efforts to meet the water quality requirements of the Chesapeake Bay TMDL. Virginia’s strategy to meet the Bay TMDL affects the 60 percent of the state that is in the watershed. The strategy is laid out in two documents: the 2010 Phase I Watershed Implementation Plan (WIP) and the updated 2012 Phase II WIP. The WIP includes specific strategies for each of the major sources of pollution in the Bay Watershed, including agriculture, wastewater treatment plants, urban and suburban stormwater management, and septic tanks. Within Virginia, Table 1 provides for each of the major sectors, their current delivered loadings of nitrogen, phosphorous, and sediment to the Bay, as well as the 2025 goal levels, the expected reduction, and percentage of reliance upon each sector for each pollutant.

Table 1: Nitrogen, Phosphorus, and Sediment Loads (pounds) to the Chesapeake Bay within Virginia

Nitrogen Loads to the Chesapeake Bay in pounds

	2009 Nitrogen Load	2025 Nitrogen Goal Load	Nitrogen Reduction Goal	Nitrogen Reduction %
Agriculture	21,107,496	13,417,668	7,689,828	36%

Urban	10,415,100	9,192,310	1,222,790	12%
Point Source	21,428,517	14,404,405	7,024,112	33%
Septic	2,469,421	2,190,363	279,058	11%
Forest	12,585,038	12,676,499	(91,461)	-1%
Grand Total	68,005,572	51,881,245	16,124,327	24%

Phosphorous Loads to the Chesapeake Bay in pounds

	2009 Phosphorus Load	2025 Phosphorus Goal Load	Phosphorus Reduction Goal	Phosphorus Reduction %
Agriculture	4,758,838	3,456,565	1,302,273	27%
Urban	1,287,843	1,013,859	273,984	21%
Point Source	1,722,602	1,147,799	574,803	33%
Septic	-	-	-	0%
Forest	771,464	787,169	(15,705)	-2%
Grand Total	8,540,747	6,405,392	2,135,356	25%

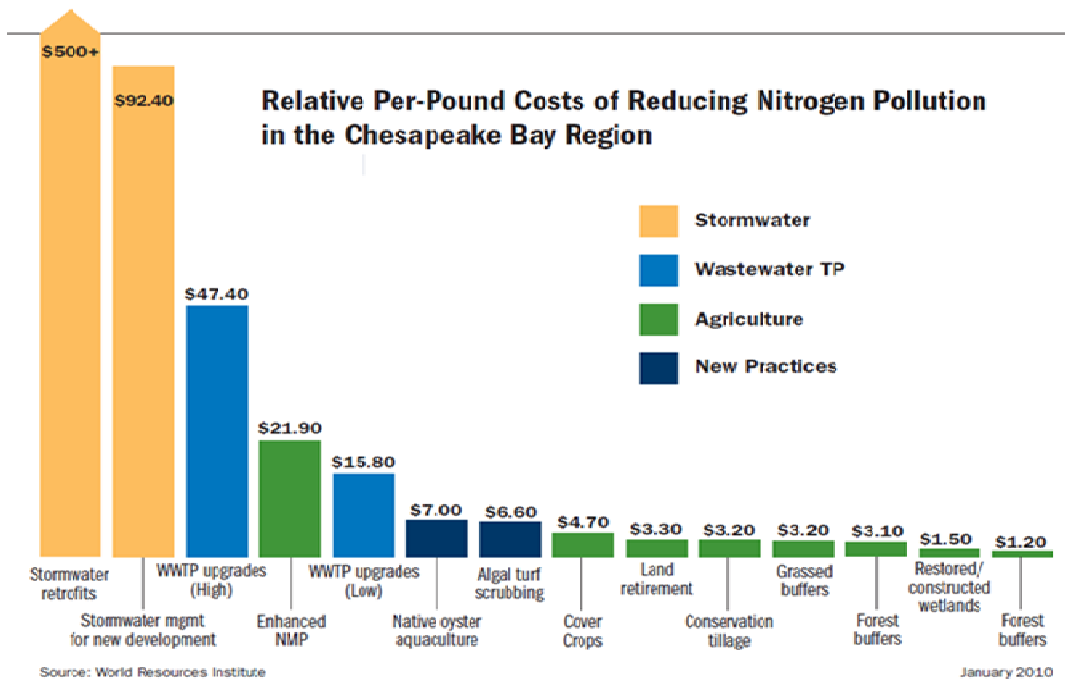
Sediment Loads to Chesapeake Bay in pounds

	2009 Sediment Load	2025 Sediment Goal Load	Sediment Reduction Goal	Sediment Reduction %
Agriculture	2,342,449,928	1,694,857,890	647,592,038	28%
Urban	694,173,557	523,718,927	170,454,630	25%
Point Source	42,833,297	144,893,828	(102,060,531)	-238%
Septic	-	-	-	0%
Forest	574,333,310	592,334,318	(18,001,008)	-3%
Grand Total	3,653,790,092	2,955,804,963	697,985,129	19%

Agricultural reductions through implementation of best management practices represent a cost-effective means of addressing these reductions. For example, as noted in Table 1, the WIP relies heavily on farmers to reduce their annual nitrogen loads to the Bay by 7.7 million pounds, phosphorous loads by 1.3 million pounds, and sediment loads by 648 million pounds. The resource management plan regulations provide a means by which such reductions in the Commonwealth may be addressed through voluntary actions by the farmers utilizing cost-effective strategies.

Figure 3 from the World Resources Institute illustrates the cost-effectiveness of agricultural BMPs in comparison to other sectors for reductions in nitrogen pollution. For instance, cover crops can reduce a pound of nitrogen for about \$4.70, while the cost of implementing stormwater management practices at new development could exceed \$92 to reduce a pound of nitrogen pollution. Less costly methods can achieve the same nutrient and sediment reductions. As Figure 3 illustrates, agricultural BMPs make up the majority of the most cost-effective methods for reducing nitrogen pollution, as well as for phosphorous and sediment.

Mitigating impact with cost-effective methods



18

Figure 3: Relative per-pound costs of reducing nitrogen pollution in the Chesapeake Bay Region

To accomplish the goals set for the Chesapeake Bay watershed, significantly more farmers will have to be engaged in the implementation of much higher numbers of conservation practices. Farms, however, other than confined animal feeding operations, are not required by law to implement BMPs, so incentives to engage farmers to invest their time and money to put these practices on the ground are needed to achieve the numbers that the WIP is relying on. Table 2 lists the levels of implementation for BMPs in 2009 and the level of progress to be attained by 2025.

Table 2: Virginia Phase II WIP Agricultural BMP Summary

Source	BMP	2009 Progress BMPs	2025 WIP II Proposed BMPs
Agriculture	Animal Waste Management Systems (Systems)	1,554	5,119
	Mortality Composters (Systems)	3	127
	Manure Transport (Tons Out of Watershed)	-	148,500
	Barnyard Runoff Control (Systems)	523	5,488
	Pasture Fence (Linear ft)	11,581,207	113,761,116

Off Stream Water No Fence (Acres)	20,528	13,917
Precision Rotational Grazing (Acres)	239,059	534,265
Horse Pasture Management (Acres)	-	23,570
Capture Reuse (Acres Treated)	-	3,753
Conservation Plan (Acres) (Life of Plan)	926,138	1,883,053
Ag Nutrient Management (Acres) (Life of Plan)	574,959	1,161,456
Cover Crop (Acres) (Annual)	79,488	308,860
Continuous No Till (Acres)	33,994	304,400
Non Urban Stream Restoration (Linear ft)	19,330	104,528
Water Control Structure (Acres)	-	700
Wetland Restore (Acres)	198	19,215
Grass Buffers (Acres)	30,267	140,959
Forest Buffers (Acres)	16,764	99,437
Land Retirement to hay w/o nutrients (Acres)	83,114	102,542
Tree Planting (Acres)	18,591	107,108

Table A.1, page 43, Virginia Phase II WIP, March 30, 2012

The proposed RMP program provides new incentive for farmers to install BMPs. This new program will help to achieve higher levels of practices on the ground, which will reduce nutrient and soil runoff and aid in accelerating goals set out for the Bay and other impaired state waters.

1) Projected cost to the state to implement and enforce the proposed regulation.

Department of Conservation and Recreation Costs

The primary state entity affected by these regulations is the Department of Conservation and Recreation. The regulations set forth the opportunity for owners and operators of agricultural lands across Virginia to voluntarily pursue development of resource management plans (RMPs) for lands under their control. The specific level of participation in this voluntary program is unknown at this time which could impact long-term program costs if participation is substantial (ie. the quantity of plans that may be initiated by owners and operators of agricultural lands, and on what time schedule they may seek those plans). The focus here is on the costs of establishing the program in accordance with the Code and regulatory requirements and having the basic infrastructure in place to implement, provide oversight to, and market the program.

Accordingly, the RMP regulations outline the following tasks the Department must fulfill to enable effective implementation of the program:

- Service as the “Review Authority” which means a soil and water conservation district or the department where no soil and water conservation district exists, that is authorized under this chapter to determine the adequacy of a resource management plan and perform other duties specified by this chapter.
- Development and maintenance over time, of forms, certificates, registries, and formats specified by regulation. These include:
 - The format of a resource management plan which will serve as the framework to be followed by all RMP developers [4VAC50-70-50].

- The form to document verification of implemented BMPs when an owner or operator requests confirmation by the review authority when their RMP is fully implemented [4VAC50-70-80].
- An inspection report when periodic field visits to management units which have been issued Certificates of RMP Implementation are performed to assess continued implementation of RMPs [4VAC50-70-90].
- A corrective action agreement when deficiencies are identified through an inspection of a RMP that has been issued a Certificate of RMP Implementation [4VAC50-70-100].
- The format to capture documentation of a RMP developer qualifications that must be fulfilled to receive a Resource Management Plan Developer Certificate [4VAC50-70-140].
- Issuance of Certificates of RMP Implementation [4VAC50-70-80] when RMPs have been verified as fully implemented by the Review Authority.
- Performance of reviews of the 47 local Soil and Water Conservation Districts [4VAC50-70-130] to evaluate fulfillment of RMP duties.
- Determinations of RMP developer fulfillment of required qualifications [4VAC50-70-140].
- Addressing shortcomings of plans where deficiencies identified through inspections require development of corrective action agreements [4VAC50-70-100].
- Other tasks including:
 - Continuing and supporting the RMP data entry performed by Districts [4VAC50-70-120] in the Virginia Agricultural BMP Tracking Program or a subsequent automated data system.
 - Posting and maintaining on the Department’s public website information pertaining to all current Certificates of RMP Implementation [4VAC50-70-80], and a listing of all individuals issued a RMP Developer Certificate and any subsequent revocations or changes in the status of RMP developers [4VAC50-70-140].
 - Promotion of RMP development and implementation on agricultural lands [4VAC50-70-150].
 - Ongoing administration of the processes set forth through the regulations that require consultation with the Virginia Soil and Water Conservation Board; actions that pertain to appeals [4VAC50-70-110]; development of guidance when needed to enhance implementation of statutes and regulation; and future changes to RMP regulation.

To address these tasks, the Department projects an initial need to allocate two full time professional staff to this program (Table 3). This minimum staffing need is dependent upon assistance by certain existing Agency personnel including the Stormwater Division management, DCR IT staff, DCR Public Communications Office personnel, the DCR Director’s Office staff, Nutrient Management staff serving on local Soil and Water Conservation District TRCs and assisting with training, and others.

Projected cost to the state for the on-going employment of no less than two professional positions is as follows (all costs rounded to the nearest thousand dollars):

Table 3: Department Staffing Needs and Associated Csots

Position	Band	Total Salary	Total Fringe	Total Support (10%)	Total Position Costs
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Environmental Specialist II	5	\$45,000	\$16,000	\$6,000	\$67,000
Environmental Manager I	5	\$56,000	\$18,000	\$7,000	\$81,000
TOTAL:					\$148,000

This total cost is projected as the initial expense the state will incur to enable the implementation of the RMP regulatory program. This minimal staffing of two positions assumes the demand for RMPs by the agricultural community will be low to modest, at least initially. With increasing demand for RMPs by Virginia’s agricultural owners and operators will follow a greater workload by the Department. Since participation is voluntary and the creation of a resource management plan with its minimum standards and requirements is unprecedented, there is no meaningful projection of the demand for RMPs and the increasing workload (and corresponding expense) it will generate.

Other State Entity Costs

Additionally, the Resource Management Plan Act that enables RMPs, names several state agencies with certain functions. For example, § 10.1-104.8. states:

“A. The Soil and Water Conservation Board shall by regulation, and in consultation with the Department of Agriculture and Consumer Services and the Department of Environmental Quality, specify the criteria to be included in a resource management plan.”

These agencies (Department of Agriculture and Consumer Services and the Department of Environmental Quality) have actively served in advisory roles throughout the process of developing the proposed regulations and criteria but will have a very limited role in implementation. It is also anticipated that minimal program support costs may be incurred by the Office of the Attorney General and the Virginia Soil and Water Conservation Board through the legal and oversight functions they will fulfill with the implementation of RMP regulation over time.

2) Projected cost of the new regulations on localities or other recognized local entities.

These regulations have no direct impact on Virginia counties and cities, by mandate or voluntary action, and as such establish no defined role for their performance. However, as political subdivisions of the Commonwealth (as provided by § 10.1-538.of the Code of Virginia), local Soil and Water Conservation Districts are named within the regulations with a number of important duties.

Soil and Water Conservation District Costs

The RMP regulations outline the following tasks each of the state’s 47 local Soil and Water Conservation Districts must fulfill to enable effective implementation of the program:

- Service as the “Review Authority” authorized under this chapter to determine the adequacy of a resource management plan and perform other duties specified by this chapter [4VAC50-70-70].
- Verification of the full implementation of a RMP which is required of the review authority [4VAC50-70-80].

- Performance of inspections for management units that have been issued a Certificate of RMP Implementation [4VAC50-70-90]. Onsite inspections must occur no less than once every three years, but not more than annually unless deficiencies have been noted that justify further follow up actions.
- Reporting RMP data performed [4VAC50-70-120] in the Virginia Agricultural BMP Tracking Program or a subsequent automated data system provided by the Department.
- Promotion of RMP development and implementation on agricultural lands [4VAC50-70-150].
- Ongoing administration of the processes set forth through the regulations to include District board actions on RMPs during monthly meetings; consultation with the Department; interactions with RMP developers when plans are determined to be insufficient; discussions with owners and operators pursuant to their requests for confirmation of the full implementation of a RMP; and interactions between Districts for coordination of RMP review when portions of RMPs fall within multiple Districts.

Projected costs (Table 4) represent an average cost per RMP based upon the time needed to perform the required tasks at an average hourly rate of \$35.00 given the following assumptions:

- The average plan is comprised of a single tract with multiple fields.
- Staff of the District performing the required tasks have fulfilled the necessary training and experience requirements to perform the required tasks - the costs of their training and certifications ARE NOT represented in the cost projections.
- The costs of the infrastructure and requisite requirements of an office, transportation, field and office equipment, telephone, computer system with network connections, etc..., that must be in place to perform the required tasks ARE NOT represented in the cost projections.

Table 4: Soil and Water Conservation District Cost Estimate for Responsibilities Associated with a Resource Management Plan

Tasks per RMP	Total Hours	Cost
RMP Review by Technical Review Committee (TRC) [4VAC50-70-70] (Assumes one SWCD director and one professional SWCD staff)	4	\$140
Verification RMP is fully implemented [4VAC50-70-80]	30	\$1,050
Inspection [4VAC50-70-90]	15	\$525
Reporting [4VAC50-70-120]	2	\$70
Miscellaneous (SWCD board action; administrative time...)	2	\$70
TOTAL per RMP Costs:		\$1,855

Since owners and operators of agricultural lands choose whether to pursue development of resource management plans of their own volition, it is not possible to project the number of RMPs that may be written during any period of time (such as quarterly, semi-annually, annually, etc.). By the same token, it

is not possible to project where farmer interest will generate RMP preparation, and which of the 47 SWCDs must fulfill the duties they are tasked to perform in accordance with these regulations.

This cost projection calculation DOES reflect an approximate cost any District will incur when a RMP is developed and a District must perform the tasks required by these regulations.

3) Description of the individuals, businesses or other entities likely to be affected by the new regulations.

Table 5 outlines the individuals, businesses, and other entities that may be affected by the RMP regulations. The degree to how much these entities will be affected is largely dependent on the numbers of farmers that voluntarily participate in the RMP regulatory program.

Table 5: Entities That May Be Affected by the RMP Regulations

Affected individuals, businesses and other entities	Nature of their involvement
Owners and operators (managers) of agricultural lands	May voluntarily pursue the development and their implementation of RMPs.
Virginia government agencies –principally the Department, but in consultation with other state agencies including VDACS, DEQ, and Virginia Cooperative Extension	The Department is charged by RMP statute and regulation to implement RMP provisions; other state agencies are advisory.
Virginia’s 47 local Soil and Water Conservation Districts	Named in RMP statute as a member of a stakeholder group to assist in development of regulation; charged in RMP regulation to perform many tasks.
Virginia Soil and Water Conservation Board	Charged by statute to adopt regulations pursuant to RMPs.
Federal government agencies –principally the USDA Natural Resources Conservation Service and Farm Service Agency. The Environmental Protection Agency will also have an interest in nutrient and sediment reductions achieved through implementation of the program.	Referenced in RMP statute as the technical resource for standards and specifications; referenced in RMP regulation as a standard for RMP developer training and certification.
Private contractors and consultants that perform conservation planning services for farmers to reduce soil loss, manage nutrients, increase farm productivity, etc.	May benefit by performing RMP development services.
Agricultural support services - Businesses that sell equipment, products, and materials; and perform labor which farmers employ to implement conservation practices, for example: <ul style="list-style-type: none"> • Fencing materials such as posts, wire, staples and their 	Will primarily benefit from the sale of products and materials and the performance of work for installation of agricultural

<p>installation</p> <ul style="list-style-type: none"> • Livestock watering systems including troughs, wells, pipe, etc. • Equipment such as seeding, tillage, fertilizer implements used by farmers to improve efficiency and productivity and minimize nonpoint source pollution • Fertilizer sales 	<p>conservation best management practices (BMPs) although there may be reductions in some areas such as fertilizer sales.</p>
<p>All citizens of the Commonwealth</p>	<p>When agricultural owners and operators carry out RMPs the reduction in nonpoint source pollution benefits water quality enjoyed by all citizens of the Commonwealth</p>

4) Agency’s best estimate of the number of such entities that will be affected including an estimate of the number of small businesses affected.

Of the entities identified above that are likely to be affected by the new regulations, the key entity is Virginia farmers.

Virginia Farmers

For the purposes of this analysis, farmers are recognized as small businesses. According to the most recent agricultural census, reported in 2007, there are 47,383 farms spanning over 8.1 million acres of Virginia’s landscape. In 2011, Virginia exported a record high \$2.35 billion in agricultural products, clearly supporting a large portion of the state’s economy. Almost one third of the state’s total land area is devoted to agriculture. The major categories of agricultural land use in the state include cropland, hay land, pastureland, and animal confinement areas. More than 34,500 farms grow row crops and hay on more than 3.2 million acres. Statewide there are more than 27,000 livestock farms. These facts and figures denote the significant value and expanse of agriculture’s impact on Virginia’s economy, culture, and environment.

Other Entities

As farmers voluntarily implement the RMP program, Virginia’s 47 local Soil and Water Conservation Districts will be responsible for performing many of the program’s oversight functions including engaging agricultural communities at the local level.

The agricultural support services group which includes many small businesses may be found statewide. We are unable to estimate the number of such entities affected but do generally expect impacts on this group to be positive as the regulations may result in more employment opportunities and greater sales of agricultural products.

5) All projected costs of the new regulations for affected individuals, businesses, or other entities.

As noted previously, as this program is voluntary in nature, **there are no required costs** associated with this regulatory action other than those costs identified by Department of Conservation and Recreation to

implement, provide oversight to, and market the program and similarly, the cost to Districts to perform local functions and market the program. However, in this section we do provide general economic information regarding water quality improvement costs associated with the agricultural sector (for which the RMP program would be a subset) as well as cost estimates associated with these regulations should farmers voluntarily participate in the program. Information provided in this section includes:

- Projected State Funding to Address Agricultural Water Quality Needs in both the Chesapeake Bay and Southern Rivers Watersheds.
- Minimum Standards of Resource Management Plan Regulations and a BMP Implementation Strategy to Meet the Standards.
- Farmers Costs for Participating in the Resource Management Plan Regulatory Program including Plan Development Costs, Agricultural BMP Implementation Costs, and Cost-Share Program Support (both state and federal).
- State Costs Summary (see Item #1 discussion for additional details)
- District Costs Summary (see Item #2 discussion for additional details)
- Training and Certification Costs

Projected State Funding to Address Agricultural Water Quality Needs in both the Chesapeake Bay and Southern Rivers Watersheds.

[NOTE: Implementation of this regulation would represent a subset of the costs identified in this section as not all strategies identified would be implemented under a resource management plan. However, for the purposes of this analysis, these estimates represent an upper range for cost estimates attributable to the agricultural sector.]

Projected state funding needs for agricultural cost-share have been estimated and presented in the January 2012 Chesapeake Bay and Virginia Waters Clean-Up Plan report to the Governor and the General Assembly. The basis for projecting the funding needs in both the Chesapeake Bay and Southern Rivers watersheds incorporates eleven basic assumptions (Page 13 of Chesapeake Bay and Virginia Waters Clean-Up Plan, January 2012):

1. The available acreage (or available quantity) where BMPs may be implemented.
2. The per-unit BMP costs are based on average state cost per practice for FY09 and FY10.
3. Accounts for actual BMP implementation through June 30, 2011, from all appropriate data sources including the Virginia Agricultural BMP Cost Share (VACS) Program, USDA EQIP, and others.
4. Accounts for estimated BMPs implemented for fiscal year 2012 for VACS based upon historical BMP implementation with the funding available.
5. Estimates the cost of achieving the 2017 agricultural BMP requirements of the Chesapeake Bay TMDL and the first year of the 2018–2025 period BMP implementation goal. In the WIP, a different mix of BMPs was applied to the 2018-2025 period as compared to the period ending in 2017. Some specific practices were not applied until 2018 and thereafter if they were new and presently undeveloped practices, or if they were viewed as more costly practices.
6. For the FY13-FY17 period, the funding projection is based on ramping up of cost-share dollars expected to achieve 15% of total agricultural Chesapeake Bay load reductions needed for the 2013 milestone, 35% of reductions for the 2015 milestone, and 60% of reductions for the 2017 milestone.

7. For FY18, the funding projection is based on a straight-line progression of BMPs needed to be installed between 2018 and 2025.
8. Accounts for the costs of longer term BMPs that must be retained for 10 years.
9. Accounts for the costs of replacing BMPs with 3 and 5 year life spans.
10. Estimates the costs for annual, recurring BMPs.
11. Includes an additional 7.5% of funding to enable BMPs that are not directly included in the WIP, but that are supportive of other practices contained in Virginia’s BMP Manual.

Table 6, from the January 2012 report, summarizes the projected state funding needs through FY18 for the various BMPs contained in Virginia’s Chesapeake Bay WIP. As noted in the table, these projected costs are only for Virginia’s portion of the state’s cost-share programs. These figures do not include the farmer’s cost, potential tax credits, or state technical assistance payments. Regardless, these imminent funding needs are far above and beyond traditional funding levels experienced by the state’s agricultural support programs.

Table 6: Funding Needs for Chesapeake Bay TMDL Agricultural Practices*

Agricultural BMP	Units	FY13	FY14	FY15	FY16	FY17	FY18
Structural / Long-term Practices							
Animal Waste Systems	Systems	\$1,054,262	\$3,235,045	\$3,236,987	\$4,045,942	\$4,045,554	\$11,875,773
Barnyard Runoff Cont	Systems	\$8,562,671	\$6,816,464	\$6,820,556	\$8,525,081	\$8,524,263	\$11,662,818
Nursery Runoff & Reuse**	Acres	\$0	\$0	\$0	\$0	\$0	\$1,521,000
Forest Buffers	Acres	\$1,410,135	\$2,641,834	\$2,643,420	\$3,304,037	\$3,303,719	\$2,564,315
Grass Buffers	Acres	\$117,750	\$1,068,851	\$1,197,473	\$1,496,733	\$1,496,590	\$1,525,501
Tree Planting	Acres	\$4,152,951	\$3,654,008	\$3,656,202	\$4,569,923	\$4,569,484	\$0
Mortality Composters	Systems	\$3,675,586	\$2,507,860	\$2,509,366	\$3,136,481	\$3,136,180	\$0
Non-Urban Stream Restoration	Linear Ft	\$7,667,000	\$5,109,289	\$5,112,355	\$6,389,984	\$6,389,371	\$6,250,000
Prescribed Grazing	Acres	\$28,595	\$51,830	\$101,675	\$127,084	\$127,072	\$102,751
Water Control Structure**	Acres	\$0	\$0	\$0	\$0	\$0	\$12,500
Wetland Restore	Acres	\$337,619	\$415,580	\$415,829	\$519,749	\$519,699	\$174,000
Pasture Fence	Linear Ft	\$1,300,659	\$2,313,499	\$5,544,449	\$6,930,062	\$6,929,397	\$9,582,056
Annual or Term Practices							
Cover Crop	Acres	\$3,425,057	\$3,945,728	\$4,466,712	\$5,117,896	\$5,769,017	\$6,129,562
Commodity Cover Crop	Acres	\$722,216	\$838,219	\$954,292	\$1,099,372	\$1,244,438	\$1,322,224
Continuous No-till	Acres	\$2,674,906	\$4,674,958	\$5,153,827	\$6,228,487	\$6,825,310	\$4,833,280
Nutrient Management	Acres	\$1,660,319	\$1,808,393	\$1,956,557	\$2,141,748	\$2,326,921	\$2,359,238
Precision Ag	Acres	\$187,500	\$312,450	\$437,475	\$593,745	\$750,000	\$1,140,585
Manure transport	Tons	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$137,500
Subtotal of Practices in WIP		\$37,027,227	\$39,444,009	\$44,257,174	\$54,276,325	\$56,007,016	\$61,193,103
7.5% additional practices supportive of WIP practices and other misc. practices not in WIP		\$2,777,042	\$2,958,301	\$3,319,288	\$4,070,724	\$4,200,526	\$4,589,483
Total		\$39,804,269	\$42,402,310	\$47,576,462	\$58,347,050	\$60,207,542	\$65,782,586
* Projected costs exclude farmer’s cost, tax credits, and Natural Resources Commitment Fund technical assistance payments.							
** Two BMPs (Nursery Runoff & Reuse and Water Control Structures) are not used in the WIP until after 2017.since							

Excerpt from Table 2-3, page 15, Chesapeake Bay and Virginia Waters Clean-Up Plan, January 2012

About 60% of Virginia is geographically located within the Chesapeake Bay watershed, while the remaining 40% lies within the watershed of the Southern Rivers. Lands in the Southern Rivers are also under heavy pressure to lessen water quality pollution from all sources, including agriculture. Projecting agricultural BMP funding needs in these watersheds is based upon the implementation of TMDLs on smaller-scale water bodies that fail to meet the state’s water quality standards. The impaired waters generally demonstrate bacterial and benthic impairments that are most frequently attributed to pollutants from agricultural sources.

The state funding needs for small TMDL watersheds in the Southern Rivers was based on actual and projected costs to put agricultural BMPs on the ground as required by TMDL implementation plans. Table 7 summarizes those estimated cost-share funding needs.

Table 7: Proposed Funding for Targeted TMDL Watersheds in Southern Rivers*

Impaired Streams	Plan Completed	\$Million					
		FY13	FY14	FY15	FY16	FY17	FY18
New River Tributaries	2011	-	-	\$2.00	\$2.00	\$2.00	\$2.00
Little River	2011	-	-	\$2.38	\$2.38	\$2.38	\$2.38
N.F. Holston River	2011	\$3.65	\$3.65	\$3.65	\$3.65	\$3.65	\$3.65
Clinch River - Upstream	2011	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33	\$1.33
Clinch River - Downstream	2011	\$1.10	\$1.10	\$1.10	\$1.10	\$1.10	\$1.10
Indian Creek, Little River, Clinch and Tributaries	2011	-	-	\$2.33	\$2.33	\$2.33	\$2.33
Upper Banister River	2011	\$1.43	\$1.43	\$1.43	\$1.43	\$1.43	\$1.43
Lower Banister River	2012	-	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00
Stroubles Creek	2006	\$0.27	-	-	-	-	-
Falling River	2009	\$0.25	\$0.25	\$0.25	\$0.25	-	-
Pigg River - Franklin	2010	\$0.50	\$0.50	\$0.50	\$0.50	-	-
Pigg River - Pittsylvania	2010	\$0.75	\$0.75	\$0.75	\$0.75	-	-
Laurel Creek & Tributaries	2012	-	\$3.92	\$3.92	\$3.92	\$3.92	\$3.92
Upper Roanoke Watershed	2012	-	-	-	\$3.28	\$6.55	\$6.55
Back Creek	2008	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67	\$0.67
Lewis Creek	2010	\$0.16	\$0.16	\$0.16	\$0.16	\$0.16	-
Guest River	2005	\$1.03	\$1.03	\$1.03	\$1.03	\$1.03	\$1.03
Totals							
Per Fiscal Year		\$11.14	\$15.79	\$22.50	\$25.78	\$27.55	\$27.39

*Projected costs exclude farmer’s cost, tax credits, and Natural Resources Commitment Fund technical assistance payments.

Excerpt from Table 2-4, page 16, Chesapeake Bay and Virginia Waters Clean-Up Plan, January 2012

Table 8 summarizes the funding needs per fiscal year for implementation of targeted TMDLs in the Southern Rivers and the remaining portion of the state allocation for widespread agricultural cost-share practices throughout the Southern Rivers. Again, this table does not include farmer’s cost, tax credits, or state technical assistance payments.

Table 8: Southern Rivers Agricultural BMP Cost-Share Funding: Projected Needs (in millions)*

	FY13	FY14	FY15	FY16	FY17	FY18
Targeted TMDL Funds	\$11.1	\$15.8	\$22.5	\$25.8	\$27.6	\$27.6
Southern Rivers Ag BMP Cost Share Funds	\$15.7	\$12.8	\$9.5	\$13.5	\$13.0	\$16.7
Total	\$26.8	\$28.5	\$32.0	\$39.3	\$40.5	\$44.3
*Projected costs exclude farmers’ cost, tax credits and state technical assistance payments.						

Table 2-5, page 17, Chesapeake Bay and Virginia Waters Clean-Up Plan, January 2012

Minimum Standards of Resource Management Plan Regulations and a BMP Implementation Strategy to Meet the Standards.

Virginia’s proposed resource management plan regulations are targeted to encourage voluntary farmer participation in these Bay stewardship efforts and other TMDL efforts statewide. The voluntary resource management plans will require a comprehensive on-farm assessment to determine the appropriate suite of BMPs that apply to the different agricultural operations on the farm. The components of each plan will be designed to comply with each individual farm’s water quality objectives, including agricultural BMPs sufficient to implement the Virginia Chesapeake Bay TMDL WIP and other local TMDL water quality requirements. All of the minimum practices required by the proposed resource management plans are also included in Virginia’s Chesapeake Bay WIP strategy (agricultural costs and practices outlined above).

The minimum standards that a resource management plan must address for each of the three major categories of farm operations eligible to participate in the program (row crops, hay lands, pasture lands) are as follows:

1. Cropland and specialty crops are required to have: a nutrient management plan, a forest or grass buffer with at least 35 feet between the cropland and perennial streams, a soil conservation plan that achieves a maximum soil loss rate to “T”, and cover crops when needed to address nutrient and sediment requirements.
2. Hay lands are required to have: a nutrient management plan, forest or grass buffers of at least 35 feet from the edge of field to any perennial stream, and a soil conservation plan that achieves a maximum soil loss rate to “T”.
3. Pasture lands are required to have: a nutrient management plan, a pasture management plan or soil conservation plan that achieves a maximum soil loss rate to “T”, and livestock exclusion from

perennial streams. Livestock exclusion includes fencing, forest or grass buffers, stream crossings, and provision of livestock watering systems.

Other BMPs approved by the department may be applied to achieve the minimum standards for a resource management plan.

In order to address the minimum standards of a resource management plan (4VAC50-70-40) that equate to reaching the load allocation for agriculture for the Chesapeake Bay TMDL and the requirements of the Chesapeake Bay TMDL WIP it is recognized that an extremely high level of BMP treatment will be needed on most farms. However, it is the intention of the regulations to allow a farmer flexibility in choosing a wide variety of specific BMPs offered to address nutrient management and soil loss requirements and the Department is comfortable that if the program is widely adopted, the practices employed will meet the necessary target reductions.

The Department utilized the Virginia Assessment and Scenario Tool (VAST), a computer modeling tool, to develop a resource management plan scenario to project whether water quality goals would be achieved if the agricultural community fully adopted RMPs and their implementation. Using a set of assumptions, a series of practices were run through VAST as follows:

- Row Crop:
 - Nutrient Management – 95% (of acres available)
 - Grass Buffers – 35' average width – 95%
 - Cover Crop – 50%
 - Conservation Tillage – 95%
 - Soil Conservation BMPs (Terraces, Diversions, etc) – 95% above fall line
- Hay:
 - Nutrient Management – 95%
 - Grass Buffers – 35' average width – 95%
 - Soil Conservation BMPs (Terraces, Diversions, etc) – 95% above fall line
- Pasture:
 - Nutrient Management – 95%
 - Stream Access Control with Fencing – 35' average width – 95%
 - Prescribed Grazing - 95%
 - Soil Conservation BMPs (Terraces, Diversions, etc) – 95% above fall line

When the VAST estimates for the RMP scenario are compared to WIP I scenario:

- Nitrogen loads meet the WIP I.
- Phosphorus loads meet the WIP I.
- Sediment loads meet the WIP I.

When VAST estimates for RMP scenario compared to WIP I model outputs:

- Nitrogen reductions are at 99.7% of WIP I.
- Phosphorus loads meet the WIP I.
- Sediment reductions are at 72.4% of WIP I.

The scenario above is a conservative assumption and utilizes the lowest efficiency for types of practices that may be utilized (example – efficiency for grass buffer versus forested buffer). Although it is impossible to accurately predict the actual mix of BMPs that would be associated with broad RMP

adoption, the RMP scenario outlined above appears to be sufficient to meet the WIP I loads for agriculture. It is these practices that are utilized in our farmer implementation cost examples outlined below.

Farmers Costs for Participating in the Resource Management Plan Regulatory Program

1) Plan Development Costs

Information regarding the estimated cost of preparing a resource management plan was obtained from three sources. The resulting estimates for an average farm operation are as follows:

a) RMP development projections by Soil and Water Conservation Districts:

The projection of planning costs factors the time necessary to:

- Conduct on farm discussions with the owner or operator and gather basic data;
- Gather any existing, current conservation plans (such as soil erosion plans, nutrient management* and others);
- Inventory and evaluate any existing conservation practices;
- Perform soil erosion calculations;
- Determine needed BMPs;
- Perform measurements and field calculations;
- Organize all information required by regulation (4VAC50-70) in the RMP format (to be developed by DCR); and
- Meet with the owner or operator, review, revise as needed.

In order to implement these tasks, representatives from the Districts estimate for an average farm operation of multiple fields that comprise a single tract, approximately 60 hours must be devoted by trained, certified staff to prepare a RMP.

At an average hourly rate of \$35, the projected cost of a RMP for an average farm operation is approximately **\$2,100**. This estimate does not include the costs associated with developing a nutrient management plan, a required element of a RMP.

b) Private sector cost estimate:

One private sector contractor is presently conducting whole farm assessments and monitoring of BMPs to quantify reductions of impacts on water quality from farming operations. This assessment process closely parallels that associated with RMP development.

In this situation, the contractor develops a voluntary Continuous Improvement Plan (CIP), which contains a series of BMPs selected by the participating farmer based on recommendations of the contractor. This collaborative process involves: ongoing discussions, farm visits, and review of farm information, including:

- Confidentiality agreements and information gathering, such as reviewing the farm's existing nutrient management plan and other information on current BMPs;
- On-site assessment and farmer discussion to verify current BMPs and assess the entire farm operations:

- Stream assessment, buffer and fencing possibilities and considerations, including width of buffer.
- Condition of row crop fields (looking at what residue is present, current tillage practices and possible evidence of soil erosion).
- Clarification of BMP Operation & Maintenance requirements, including manure management, use of cover crops, buffer vegetation and maintenance;
- Photo documentation of issues to be addressed, opportunities, and existing BMPs;
- Farmer interviews to learn what practices they are interested in pursuing and willing to implement and to answer any TMDL WIP questions;
- Also discussed are expanded potential practices, such as other opportunities that the farmer may not be ready to implement, but may consider acting on in the future, consideration of local food markets to possibly diversify revenue and production, potential to export poultry litter and manure, longer crop rotations with more perennials and cropping system changes; and
- Delivery of the CIP and “commitment” by farmer for a two year implementation, followed by an update of the quantification of nutrient loads with agreed CIP recommendations and a biennial review of implementation and operation and maintenance and CIP update.

The CIP provides the farmer with a quantitative estimate of their existing nitrogen and phosphorous loads and staggered levels of progress of BMP implementation toward full CIP implementation. The different implementation loads are compared to the goals and targets contained in the Virginia WIP. The contractor follows up with the farmers for a biennial review, where implementation of the CIP recommendations and other BMPs are verified. The contractor also works with the farmer to update any changes on the farm operations such as acreage, new structures or changes in practices or operations. The CIP is then updated with new recommendations reflecting the current operations and the nutrient loads are reassessed to a pace towards reaching WIP goals.

This whole farm approach to develop a CIP is similar to that of the RMP program. Therefore, their cost estimate of **\$2,000** to develop a plan seems along the same lines as what it would cost for developing an RMP. However, the cost of developing a nutrient management plan, will be additive to the estimate.

The contractor who developed this system is considering moving to a different fee structure in the future. Instead of using the flat rate fee of \$2,000 per farm mentioned above, they are considering a \$1,000 base fee plus a per acre charge and per animal unit charge to more closely reflect the costs involved with developing individual comprehensive farm plans. Rates currently under consideration range from \$3 to \$5 per acre for farms less than 500 acres. The per acre charge would decrease as farm size increases for larger farms. The additional cost per animal unit is expected to be based on animal density (number of animals per acre) and is still being worked out. Best management practices that address the impacts of livestock tend to be more complex, especially at higher densities, and can include fencing, watering systems, pasture management, manure management, and others. The higher the animal density on a farm, the more expensive the animal unit charge would be to develop a CIP. This new approach to charging for CIPs is still being worked out, and illustrates the novel approach of the resource management plan concept.

c) RMP development projections by USDA NRCS:

Two of the required elements of a resource management plan for a farm include the development of a nutrient management plan and a soil conservation plan. Statewide average cost estimates provided by NRCS for the preparation of these two plans on an average size farm of 120 acres are as follows:

- TSP prepared NMP @ \$5/acre is \$600.
- Soil Conservation Plan @ \$7.40/acre is \$888

The projected combined cost of developing these two plans is **\$1,488**. More costs will be incurred to fully develop the whole-farm RMP. The format and necessary information to be included in a RMP have yet to be developed by DCR, so the information that will need to be gathered and presented beyond these plans still requires refinement. However, we do know that the RMP process will take some time, effort, and money to pull the necessary information together. Thus, the estimate provided here under represents the total cost to develop a RMP and demonstrates the average cost of preparing the two required plans as necessary pieces of the more complex RMP.

2) Agricultural BMP Implementation Costs

Two cost examples associated with implementing these practices on average sized farms with differing agricultural operations are included below. Estimates are based on costs obtained from the U.S. Natural Resources Conservation Service (NRCS). Table 9 represents the estimated costs of putting agricultural practices on the ground. The costs are based on NRCS data for an average or typical size agricultural operation. The resource management plans and prescribed practices would be farm specific and dependent upon a variety of factors, including current conditions at the farm, the types of operations that are planned, whether there are perennial streams on the property, what practices are already in place, and more.

The BMPs included in Table 9 may be used to meet the minimum standards outlined for the RMP program and include those utilized by the Department in our Virginia Assessment and Scenario Tool (VAST) analysis. Some practices and their costs are straight forward, based on an estimated farm size, such as cover crops at \$80 per acre. While others such as a soil conservation plan that achieves a maximum soil loss rate to “T” will vary widely from farm to farm; the BMPs prescribed to achieve this goal may be simple or very complex and their costs are dependent upon those chosen practices. Additional BMPs not included in the table may also be used to achieve the minimum standards for a resource management plan.

It should also be noted that some practices will have an annual cost associated with their implementation, such as planting cover crops every fall. While others, like livestock stream exclusion fencing, stream crossings, and alternate watering systems have larger upfront costs and minimal annual costs such as maintenance expenses.

Table 9: Best Management Practice Costs Estimated Associated with Practices Applicable to Farmer Implementation of Resource Management Plans.

Best Management Practices	Average Size Farm per NRCS	Estimated Average Cost per Unit per NRCS	Average Total Cost per NRCS
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	Guidance		
Preparation of a Nutrient Management Plan	120 acres	\$5/acre	\$600
Nutrient Management Plan Implementation	50 acres	\$70/acre	\$3,500
35 ft. Grass Buffer	2 acres	\$255/acre	\$510
35 ft. Forest Buffer	Up to 5 acres	\$740 to \$1,750/acre*	For 3 acres: \$2,220 to \$5,250
	More than 5 acres	\$710 to \$1,720/acre*	For 7 acres: \$4,970 to \$12,040
Cover Crops	20 acres	\$80/acre	\$1,600
Livestock Stream Exclusion Fencing	1,320 linear feet	\$1.55/linear ft	\$2,049
Watering Facility	1 unit	\$740 to \$2,400	\$740 to \$2,400
Stream Crossing	1,400 sq. feet	\$2.20	\$3,080
Soil Conservation Plan Preparation	120 acres	\$7.40/acre	\$888
Soil Conservation Plan Implementation:			
No-Till/Strip-Till	200 acres	\$55/acre	\$11,000
Earthen Diversion	500 linear feet	\$2.40/linear ft	\$1,200
Earthen Grade Stabilization Structure	75 linear ft	\$190/linear ft	\$14,250
Grass Filter Strips	2 acres	\$260/acre	\$520
Grassed waterways	1 acre	\$1,560/acre	\$1,560
*cost dependent upon number and type of trees planted			

To provide a rough estimate of the costs that could be associated with implementing a RMP on an average sized farm, we provide two examples of farming operations in Virginia. The first provides an estimate for practices that may be required on a farm solely focused on row crop production. The second example is for a farm that has multiple agricultural operations encompassing each of the three categories eligible for the RMP program (cropland and specialty crops, hay lands, and pasture lands). This latter farm would require a more complex RMP with additional BMPs to address all of the operations, resulting in higher total associated costs.

In the first example, we consider a typical row crop farm found in the eastern part of the Commonwealth. Our example farm (280 acres) is comprised of 160 acres of cropland with additional acreages in forestland (110 acres) and water bodies (ponds, perennial streams, wetlands –totaling approximately 10 acres). We represent for the purpose of this example that the farm does not yet have in place, any of the BMPs that achieve the minimum standards required by a RMP. Here the topography is relatively flat and the soils are sandy so there is good drainage, but while many fields have small soil losses during storm events there also may be areas that experience high soil loss. Small grains, corn, and soybeans are grown on this example farm. A RMP for this typical operation will require: a nutrient management plan (and its implementation), vegetative (grass or forest) buffers along perennial streams, and a soil conservation plan to address soil erosion. The soil conservation plan may require several BMPs to achieve the required maximum soil loss to “T”; our example includes continuous no-till, grassed waterways, and cover crops.

Using the estimate for preparing a RMP from the Soil and Water Conservation Districts of \$2,100 (for the soil erosion portion of the plan) and cost estimates of practices from Table 9, we can extrapolate the average implementation costs of these practices to be:

Example 1:

<u>Components</u>	<u>Projected RMP/BMP Costs*</u>	<u>Farmer Costs</u>
Preparation of a RMP to address soil erosion and nutrient management plan requirements (\$2,100 Erosion Plan + \$800 NMP (160 acres @ \$5/ac))		\$2,900
35' Grass Buffers along perennial streams	2 acres @ \$255/acre	\$510
Cover Crops (annually on certain fields)	20 acres @ \$80/acre	\$1,600
Soil Conservation Plan Implementation:		
Continuous No-Till	160 acres @ \$55/acre	\$8,800
Grassed Waterways	1 acre @ \$1,560/acre	\$1,560
	Total:	\$15,370

*Projected costs use NRCS average per unit costs

This example farm per acre cost (cropland acres only) – \$15,370 / 160 acres = \$96.06/acre

This example farm illustrates costs that an agricultural owner or operator will incur when they choose to develop and carry out a RMP. This scenario reflects total estimated out of pocket expense with no incentives to offset costs. The total estimated expense for the RMP and the needed practices is \$15,370. Some of the costs are largely one-time costs (such as grass buffers and grassed waterways) while other practices must be repeated annually. However, all BMPs including those that last multiple years require maintenance and repair, whenever there is damage from weather events and natural deterioration.

The second example farm (305 acres) represents the more western part of Virginia where there are more livestock operations, steeper slopes, karst topography, and more highly erodible soils. This example farm consists of grazing livestock (beef cattle) on 80 acres of pasture, 50 acres of hayland, 120 acres of cropland, roughly 5 acres of water (pond and perennial streams), and nearly 50 acres of forestland. A RMP for a farm with these agricultural operations may require all of the following BMPs*:

Example 2:

<u>Components</u>	<u>Projected RMP/BMP Costs**</u>	<u>Farmer Costs</u>
Preparation of a RMP to address soil erosion and nutrient management plan requirements [\$2,100 Erosion Plan + \$1,250 NMP (250 acres of pasture, hayland and cropland @ \$5/ac)]		\$3,350
Livestock Exclusion:		
Fencing	1320 ft @ \$1.55 ft	\$2,046
Stream Crossing	1400 sq ft @ \$2.20	\$3,080
Watering Facility	1 unit @ \$1,500	\$1,500
35' Forest Buffer	3 acres @ \$845/ac	\$2,535
Cover Crops (annually on certain fields; on a portion of acreage)	20 acres @ \$80/ac	\$1,600

Pasture Management Plan Implementation	80 acres @\$70/ac	\$5,600
Soil Conservation Plan Implementation:		
Continuous No-Till	120 acres @ \$55/ac	\$6,600
Grassed Waterways	1 acre @ \$1,560/ac	\$1,560
Earthen Diversion	500 ft @ \$2.40/ft	\$1,200
	Total:	\$29,071

*Many operations of this type will benefit from roof runoff management with gutters, downspouts, cisterns and controlled overflow outlets to collect and use rain water especially around livestock barns and related buildings. This example does not incorporate the costs of these collection and storage practices.

**Projected costs use NRCS average per unit costs.

Per acre cost (pasture, hayland, and cropland only) – \$29,071 / 250 acres = \$116.28/acre

The total out-of-pocket costs associated with implementing a RMP for a more diverse and complex farming operation is considerably higher (although the per acre costs are similar). This is because of the need for additional BMPs to address the additional nutrients and soil disturbances associated with the different operations. Also, there are higher one-time costs associated with certain livestock BMPs, such as fencing cattle out of streams, creating stabilized stream crossings, and providing an alternate source of water for the animals. While these upfront costs require significant investment, the longer term maintenance and repair costs are also factors farmers with such operations must weigh as they consider exclusion practices.

In addition to the direct expenses, there are other potential costs to farmers associated with implementing the prescribed management practices in a resource management plan. These indirect costs could potentially include:

- The cost of “foregone income” for land taken out of production through the establishment of buffers, planted to trees, or other structural practices, such as waterways or contour buffer strips, should be considered whenever uncompensated losses would be expected to occur.
- Reductions in crop yield will also occur in an additional narrow swath along established riparian forest buffers. As the buffers mature, the “new forest” competes with the crops for sunlight, nutrients and water along the field’s edge. Grass buffers do not cause this yield reduction, which is why they are popular for row crop farmers.
- To meet the criteria contained in their resource management plan, some farmers may need to purchase new equipment and may have to develop new markets for any new crop rotations they choose to harvest.
- Other costs of RMP implementation include the farmer’s time and effort. Farmers will have to meet with a planner, complete required documentation, install BMPs, apply for cost-share (if they choose to do so), and apply for RMP certification. These actions may result in lost productivity in the field especially when they occur at times when actions or decisions by the farmer are most critical.

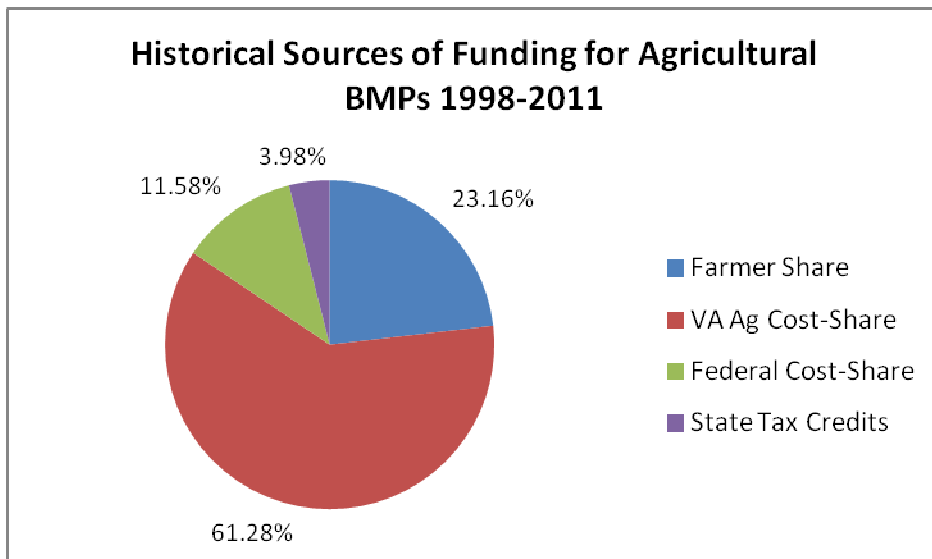
On the other hand, farmers will also see economic and other benefits from their stewardship efforts. Many conservation practices often save farmers money such as improving herd health or keeping soil and fertilizers on the field to be taken up by crops. When soil erosion occurs, the farmer is not maximizing

the uptake of water and nutrients; instead eroding soils run off the field to receiving water bodies. In the long run, good stewardship practices keep the land productive and minimize adverse impacts on natural resources.

3) Cost-Share Program Support

Farmers and land owners who choose to participate in the proposed resource management plan program remain eligible to seek out state, federal, and other funding to offset their costs for the implementation of BMPs. Grant programs for up to 75% of costs of implementing certain BMPs are provided through the Virginia Department of Conservation and Recreation and NRCS. Once a practice is implemented according to the required specifications, the farmer receives reimbursement from the state. For some BMPs a flat rate incentive payment is issued whereby payments generally enable the farmer to recoup most of the out of pocket cost for the practice. For others up to 75% of the eligible costs of the practice is reimbursed. However, program “caps” on maximum total payment dollars are sometimes exceeded from high cost BMPs, making the farmer’s share greater than 25%.

When farmers participate in state and federal incentive programs, analysis of statewide data from program years 1998 through 2011 reflects the farmer financial share of installing agricultural BMPs averaged 23.16% of total practice cost after accounting for tax credits on eligible practices (Figure 4). BMP costs eligible for state tax credits over the same period averaged 3.98% of total practice cost. State cost-share covered 61.28% of BMP costs and federal cost-share programs covered 11.58%.



From page 10 of Chesapeake Bay and Virginia Waters Clean-Up Plan, January 2012

Figure 4: Historical Sources of Funding for Agricultural BMPs

Additionally, farmers may be eligible for state tax credits for specified BMPs through Virginia Code §§ 58.1-339.3 and 58.1-439.5.

According to a study conducted by USDA on "Voluntary Incentives for Reducing Agriculture Non-Point Source Water Pollution" (Feather, Peter M., and Joseph Cooper. 1995. *Voluntary Incentives for Reducing Agricultural Nonpoint Source Water Pollution*. USDA; Economic Research Service; Agriculture

Information Bulletin Number 717), increased farm profitability is the most important factor influencing farmers' decisions to participate and adopt BMPs. The adoption of less polluting management practices is driven by the farmer's perception of their effect on profitability. On-farm water quality benefits, farmer knowledge and familiarity with the practices also influence farmers' decision to adopt improved management practices.

The RMP incentive of shielding the farmer from any further required action (see “Purpose” section) and providing surety into the future may also provide sufficient value to encourage many farmers to participate.

a) State Assistance towards implementation costs:

Table 10 provides a list of the Virginia Agricultural Cost-Share (VACS) 40 BMPs eligible for cost-sharing along with the state’s rate of compensation provided for each practice.

Table 10: Virginia’s Eligible State Cost-Share Best Management Practices

	BMP	Installed Units	State Rate
1	Continuous Conservation Initiative Continuous No Till Planting Systems	Acre	\$25/acre for the 5 year lifespan
2.	Continuous Conservation Initiative Forested Riparian Buffer	Acre	\$100/Ac. for the 5 year lifespan*
3.	Continuous Conservation Initiative Herbaceous Riparian Buffer	Acre	\$50/acre for the 5 year lifespan*
4.	Continuous Conservation Initiative Stream Exclusion	Lin. Feet of stream bank protected	\$1/lin. foot of stream bank protected for the 5 year lifespan *
5.	Reforestation of Erodible Crop and Pasture land	Acre	\$175/Ac. for pines \$250/Ac. for Hardwoods
6.	Woodland Buffer Filter Area	Acre	\$200/Ac. for pines \$650 for Hardwoods
7.	Woodland Erosion Stabilization	Acre	75%
8.	Livestock Exclusion with Reduced Set Back (Southern Rivers Only)	Lin. Feet of stream bank protected	50%
10.	Three Year Contract for Nutrient Management Plan Writing and Revisions	Acre	\$2 Annually (\$6/Ac. Contract) for Commercial, \$4/Ac. Annually (\$12/Ac. Contract) for on-farm manure
11.	Sidedress Application of Nitrogen on Corn	Acre	75% up to \$6/Acre \$8/Sample
12.	Organic Nutrient Application to Corn using Pre-Sidedress Nitrate Test to Determine Need for Sidedress Nitrogen	Acre	75% up to \$6/Acre \$8/Sample
13.	Late Winter Split Application of Nitrogen on Small Grain	Acre	75% up to \$4.50/Acre \$8/Sample
14	Vegetative Stabilization of Marsh Fringe Areas	Acre	50%
15.	Permanent Vegetative Cover Establishment On Cropland	Acre	\$25/ Ac plus \$5/Ac for each year up to 10 plus 75% of component cost
	Strip-cropping System	Acre	\$30/Ac +75% of the eligible component

	BMP	Installed Units	State Rate
			cost
16.	Buffer Stripcropping	Acre	\$15/Ac
17.	Terrace Systems	Linear Feet	75%
18.	Diversions	Linear Feet	75%
19.	Stream Exclusion with Grazing Land Management Protection	Linear Feet of Stream bank protected	75%
20.	VACS Support for Extension of CREP Watering System	Acreage of rotational grazing implemented	75%, but Not To Exceed a fixed amount based upon the acreage or width of the CREP Buffer
21.	Protective Cover for Specialty Cropland	Acre	\$35/Ac
22.	Small Grain Cover Crop for Nutrient Management and Residue Management	Acre	\$25/Acre, and \$25/Acre early bonus, and \$10/Acre select rye varieties bonus
23.	Harvestable Cover Crop	Acre	\$25/Acre * \$10/Acre for Biofuels
24.	Grazing Land Management	Acre	50%
25.	Permanent Vegetative - Cover on Critical Areas	Acre	75%
26.	Continuous No-till System	Acres	\$100/Acre for the 5 year lifespan
27.	Continuous No-till Forage Production System	Acres	\$50/Acre
28.	Sediment Retention, Erosion or Water Control Structure	# of Structures	75%
29.	Stream Protection	Linear Feet of Stream bank protected	75%
30.	Stream bank Stabilization	Linear Feet of Stream bank protected	75%
31.	Sod Waterways	Acres in Waterway	75%
32.	Animal Waste Control Facilities	# of Systems	75%
33.	Loafing Lot Management System	# of Systems	75%
34.	Composting Facilities	# of Systems	75%
35.	Animal Mortality Incinerator Facility	# of Systems	75%
36.	Agricultural Chemical Handling Facility	# of Structures	75%
37.	Grass Filter Strips	Acre	\$175/Acre
38.	Legume Cover Crop	Acre	\$35/Acre
39.	Water Table Control Structure	Acre	75%
40.	Agricultural Sinkhole Protection	Acre	75% for protection 75% for clean out not to exceed \$4,000

* Participant must refuse tax credit in writing before cost share can be issued

Referring back to our two example farms, if those two farmers participated in Virginia’s agricultural cost-share program they could recoup a generous portion of their costs (Table 11). Below is a rough calculation of each farmer’s potential cost-share contribution and average final out of pocket costs.

Table 11: Farmer RMP Implementation Costs and Cost-Share Assistance Associated With Examples

Example 1: Row Crop Farm in Eastern Virginia

Practice	Cost per Unit (ref NRCS)	Example 1 Farm Cost	VA Ag BMP Cost-Share	Average Final Cost Example 1 Farm
Preparation of the soil erosion portion of a RMP	\$2,100 (SWCD estimate for average farm)	\$2,100	N/A	\$2,100
Preparation of Nutrient Management Plan	\$5/acre	\$800 for 160 ac	\$2/ac/year (\$320/yr)	\$480
35' Grass Buffer	\$255/acre	\$510 for 2 acres	\$225/ac (\$450)	\$60
Cover Crops	\$80/acre	\$1,600 for 20 acres	\$35/acre (\$700)	\$900
Conversion to Continuous No-Till	\$55/acre	\$8,800 for 160 ac	\$20/ac/yr 5yr contract (\$16,000*)	(\$7,200)
Grassed Waterways	\$1,560/acre	\$1,560 for 1 acre	75% (\$1,170)	\$390
Total:		\$15,370	\$18,640	(\$3,270)

***One time upfront payment for contract to implement practice over five years. Payment is to encourage participation in the practice and offset costs related to new equipment.**

Example 2: Farm with Cattle, Pasture Land, Hay Land, and Row Crops

Practice	Cost per Unit (ref NRCS)	Example 2 Farm Cost	VA Ag BMP Cost-Share	Average Final Cost Example 2 Farm
Preparation of the soil erosion portion of a RMP	\$2,100 (SWCD estimate for average farm)	\$2,100	N/A	\$2,100
Preparation of a Nutrient Management Plan	\$5/acre	\$ 1,250 for 250 ac	\$2/ac/year (\$500*)	\$750
Livestock Exclusion Fencing	\$1.55/ linear ft	\$2,046 for 1,320 ft	75% (\$1,535)	\$511
Stream Crossing	\$2.20 /square ft	\$3,080 for 1,400 sq ft	75% (\$2,310)	\$770
Watering Facility	\$1,500/unit	\$1,500 for one unit	75% (\$1,125)	\$375
35' Forest Buffer 110 Hardwoods/acre	\$845/ac	\$2,535 for 3 acres	\$650/ac (\$1,950)	\$585
Cover Crops	\$80/ac	\$1,600 for 20 acres	\$35/acre (\$700)	\$900
Pasture Management Plan Implementation	\$70/ac	\$5,600 for 80 acres	50% (\$2,800)	\$2,800
Conversion to Continuous No-Till	\$55/ac	\$6,600 for 120 ac	\$20/ac/yr 5yr contract (\$20,000*)	(\$13,400)
Grassed Waterways	\$1,560/ac	\$1,560 for 1 acre	75% (\$1,170)	\$390

Earthen Diversion	\$2.40/ft	\$1,200 for 500 ft	75% (\$900)	\$300
Total		\$29,071	\$32,990	(\$3,919)

***One time upfront payment for contract to implement practice over five years. Payment is to encourage participation in the practice and offset costs related to new equipment.**

These two farm scenarios offer a first year snapshot of costs that may be incurred by farmers that pursue development of a RMP and follow the BMPs that are necessary to achieve the required minimum standards. Both examples depict costs that will be incurred by the farmers when typical BMPs for their operations are implemented. Both examples depict the financial incentives offered through the Virginia Agricultural BMP Cost Share Program and the overall impact on the farmer’s expenses for RMP development and implementation in year one. Also note, these example farms received the full, maximum benefit of the incentives through a program that has historically been underfunded. The incentive funds greatly offset RMP costs in year one, but many expenses for the more structural long term practices will continue in the years to follow. These costs must be borne by the farmer. In summary, the examples serve to illustrate the potential costs of planning and implementing agricultural BMPs and shows that the costs may be significant. Farmers must carefully weigh all costs, including both the near term and long term costs, as they consider the many benefits RMPs will generate.

A Certificate of RMP Implementation is valid for nine years, as stated in the proposed regulations (4VAC50-70-80 F.) and § 10.1-104.7 A of the Code of Virginia requires that practices set out in a RMP must be fully implemented and maintained in order to be deemed in full compliance. Ongoing costs associated with carrying out and maintaining practices will continue year to year. Farmers can continue to seek out cost-share funding to offset those costs.

b) Federal Assistance towards implementation costs:

The federal government also offers an agricultural cost-share program authorized through the Farm Bill. NRCS administers the federal cost-share programs in each state. Farmers can participate in and seek out technical assistance from both federal and state programs. For FY12, NRCS initially allocated \$11.8 million as Virginia’s share of the special Chesapeake Bay appropriations authorized by the 2008 federal Farm Bill and designated as Chesapeake Bay Watershed Initiative (CBWI) funding. These funds are not expected to be available in FY13 and beyond unless they are included in the next farm bill. Ongoing funding of the federal Environmental Quality Incentive Program (EQIP) program is expected to continue to fund certain conservation practices. These federal programs are funded at \$9.1 million statewide for FY12. Because of the fluctuating and uncertainty of future federal funding to support incentive programs, accurate projections of federal cost-share dollars in future years cannot be made. Historic funding data can be used to derive an equitable ratio of state to federal funding for those agricultural BMPs delivered through the state cost-share program. Applying the historical funding averages from Figure 4 above, Table 12 estimates the amounts of relative state and federal annual funding needs through FY18.

Table 12: Projected State and Federal Agricultural BMP Cost-Share Funding

	FY13	FY14	FY15	FY16	FY17	FY18
State BMP Cost-Share Funding Needs	\$66.6	\$70.9	\$79.8	\$97.6	\$100.7	\$110.1
Related Federal BMP Funding Needs	\$12.6	\$13.4	\$15.1	\$18.5	\$19.0	\$20.8

Total	\$79.2	\$84.3	\$94.9	\$116.1	\$119.7	\$130.9
*Projected costs exclude technical assistance, farmers' cost, and tax credits.						

Table 2-6, page 18, Chesapeake Bay and Virginia Waters Clean-Up Plan, January 2012

The expectation is that the proposed resource management plan regulations will stimulate greater willingness by farmers to implement best management practices. However, farmers who participate in the proposed resource management plan program will still be eligible to partake in these cost-share programs. This may increase the need for increased state and federal funding for these water quality improvement measures on the farm. In recent years, Virginia's cost-share programs have experienced greater sign-up by farmers than available funding. The proposed regulations may create even more demand for participation in the cost-share programs, which would require higher levels of state and federal funding to match the need, as projected in the above table. The regulatory program may also result in the need for the creation of additional cost-share practices such as one for RMP development.

c) Other Cost Assistance

It is also notable that placing a conservation easement on a buffer can result in additional economic benefits. A permanent easement created through the Virginia Conservation Reserve Enhancement Program, for example, can qualify producers for a one-time payment of \$1000/acre. Landowners also may benefit from reduced local property tax rates on their easement acreage. The easement remains privately owned property that is subject to annual monitoring by the group holding the easement. The primary restriction on the landowner is that the land use cannot change over the life of the easement.

The economics of riparian buffer systems vary from one farm operation to another (Table 13). In general, they are affected by the acreage removed from production, types of crops or livestock involved, and costs of preparing and planting the buffer site.

Table 13: The Economic Pros and Cons of Riparian Buffers.

<i>Economic Pros and Cons of Riparian Buffers</i> Positive economic effects	Negative economic effects
Potential income from future timbering Potential income from hunting leases State, federal cost-share assistance Reduced production costs Potential flood damage reduction Potential tax benefits (if buffer is put in a conservation easement)	Loss of crop production/revenue Installation costs Operating and maintenance costs Potential for increased wildlife damage Potential need to relocate livestock

Adapted from Faulkner, 1999, *Economic Considerations Associated With Conservation Buffers*, Conference presentation handout.

State Costs Summary

As noted previously (see Item #1 response for additional details), the Department is the primary state entity that will have recognized costs. The Department's total projected cost of \$148,000 in support of two staffing positions represents the initial expense the state will incur to enable the implementation of

the RMP regulatory program. With increasing demand for RMPs by Virginia's agricultural owners and operators will follow a greater workload by the Department.

District Costs Summary

As noted previously (see Item #2 response for additional details), the RMP regulations outline a number of tasks each of the state's 47 local Soil and Water Conservation Districts (Districts) must fulfill to enable effective implementation of the program. An estimate of \$1,855 in expenses per RMP was calculated. Since owners and operators of agricultural lands choose whether to pursue development of resource management plans of their own volition, it is not possible to project the number of RMPs that may be written during any period of time.

Training and Certification Costs

For the purpose of this section, training and certification costs are considered from two perspectives. One is the cost each District must bear to employ staff that have sufficient expertise to perform the tasks required by regulation. The other perspective is the costs RMP developers will incur to fulfill certification requirements for writing RMPs.

District Training and Certification Costs

Districts are bound by Virginia statute to carry out the Virginia Agricultural BMP Cost Share Program:

§ 10.1-546.1. Delivery of Agricultural Best Management Practices Cost-Share Program. Districts shall locally deliver the Virginia Agricultural Best Management Practices Cost-Share Program described under § 10.1-2128.1, under the direction of the Department, as a means of promoting voluntary adoption of conservation management practices by farmers and land managers in support of the Department's nonpoint source pollution management program.

Each fiscal year, the Department enters into a contractual agreement with each of the 47 Districts which commits funding and support from the Department in exchange for services and tasks performed by Districts. Within each contractual agreement is a requirement that states each District will:

“Ensure staff implementing the Virginia Agricultural BMP Cost-Share Program, and other agricultural related programs, obtain the USDA Virginia NRCS conservation planning Level I certification within 18 months of employment with a SWCD (dependent upon availability of all required courses with a demonstration of good progress if 18 months is exceeded) and engineering job approval authority for appropriate BMPs within the service area of the district. Conservation planning certification and engineering job approval authority should be maintained thereafter. Depending on BMPs implemented by the SWCD, higher Levels of conservation planning certification may be required.”

It is the Department's expectation that each District will have staff (at least one employee) that fulfills this requirement. Therefore, at least one employee per District must fulfill the USDA Virginia NRCS conservation planning Level I certification within 18 months of employment with a SWCD. Virginia's NRCS conservation planning requirements are posted at the following public web site:

http://www.va.nrcs.usda.gov/technical/conservation_planning.html

Within the NRCS conservation planning policy [Virginia Supplement to the General Manual, Title 180 Conservation Planning and Application, Part 409 Conservation Planning Policy] training is generally addressed as stated:

“Training must be provided through NRCS training courses, on-the-job training or equivalent courses and methods approved by the SRC as meeting the identified training need. Based on identified needs, Virginia NRCS will provide training to NRCS and partnership planners.”
(note: SRC is State Resource Conservationist –a NRCS staff position)

Through this collaborative partnership arrangement with NRCS, districts incur minimal costs associated with actual course and training expenses. The costs Districts incur are the payment of wages of their staff while obtaining training and completing courses, and travel expenses when training is performed outside the District office.

RMP Developer Certification Costs

Requirements for RMP developer qualifications and certification are addressed within the regulations as follows:

“4VAC50-70-140. Resource management plan developer qualifications and certification.

- A. An individual shall be qualified to serve as a RMP developer if the individual:
 - 1. Is certified as a conservation planner by the NRCS and is certified as a nutrient management planner by the department; or
 - 2. Is certified as a nutrient management planner by the department and demonstrates academic and applied proficiencies with and an understanding of all of the following...”

NRCS represents that their process for obtaining conservation planner certification is available to those outside of government agency personnel and there is a path for the private sector to complete requirements. On line courses are available at no charge. The cost for attending classroom or field instruction is not known at this time. NRCS staff have raised concerns about their capacity to offer course opportunities to private planners given their current staffing and workload. Costs to private planners must consider their time, travel, and course expenses once these uncertainties are resolved.

Concerning nutrient management certification, the Department administers a training and certification program which is summarized at the following site:

http://www.dcr.virginia.gov/stormwater_management/nutmgt.shtml

DCR’s nutrient management training and certification program is summarized as follows:

Nutrient Management Certification

Those seeking nutrient management certification in Virginia must meet three requirements: education, experience, and passing both parts of the nutrient management exam. Planners may become certified in the Agriculture category, the Turf and Landscape category, or both.

Along with a college degree in a related major, applicants must have at least one year of job related experience in practical nutrient management. In lieu of the college degree, applicants must show a

combination of education (to include nutrient management related courses or training) and at least three years of on-the-job, practical nutrient management experience.

Formal education for the Agriculture category: A four-year college degree in an agriculture related field is required. Subjects studied should be directly related to nutrient management, such as soils, soil fertility and plant science.

Formal education requirement for the Turf and Landscape category: A four-year college degree in an urban agronomy related field is required. Subjects studied should be directly related to nutrient management, such as soils, soil fertility and plant science.

Experience with formal education requirement: In addition to formal education, applicants must have at least one year of practical experience related to nutrient management planning or the application of nutrient management concepts and principles. This includes working farmers, landowners or grounds maintenance supervisors to develop fertility programs for crop production or for the establishment and maintenance of turf or landscaped areas.

Experience in nutrient management involves determining nutrient recommendations regarding fertilizers, manures or biosolids. These recommendations would require a working knowledge of: application rates based on realistic yields or soil productivity; other specific criteria based on the area and plants being fertilized; management of environmentally sensitive areas; and proper timing of nutrient applications. Such experience would entail dealing directly with people in the following positions, or holding such positions, as:

- Agricultural category - agricultural fertilizer sales, biosolids permitting, conservation district personnel, independent consultant, farm operators or managers
- Turf and Landscape Category - golf course superintendent or consultant, landscape architect, nursery manager, lawn care sales, management or consultant, turf fertilizer sales

No formal nutrient management education: For applicants with no formal education related to nutrient management, an agricultural or urban agronomic background is preferred, along with the completion of additional training and job experience in nutrient management. This should include nutrient management related courses, nutrient management planning job responsibilities, or both. The attendance of both agriculture training schools - the Soil Science, Soil Fertility and Crop Production School, and the Agricultural Plan Writing School - satisfies the education requirement for the Agriculture category. Attending both turf and landscape training schools - the Soil Science, Soil Fertility and Turf Production School and the Turf and Landscape Plan Writing School - satisfies the education requirement for the Turf and Landscape category.

Experience requirement with no formal nutrient management related education: Three years of practical experience related to nutrient management planning are required. This includes working in any capacity directly with farmers, landowners or grounds maintenance supervisors to develop fertility programs to produce crops or establish and maintain turf or landscaped areas. Work experience must include the use of fertilizers, manures and biosolids, or any combination thereof, taking into account soil productivity, realistic yield goals, nutrient needs that meet specific use requirements of given sites, environmentally sensitive areas, and the timing of nutrient applications to determine nutrient recommendations. Such experience would entail dealing directly with people in the following positions, or holding such positions, as:

- Agricultural category - agricultural fertilizer sales, biosolids permitting, conservation district personnel, independent consultant, farm operators or managers
- Turf and Landscape Category - golf course superintendent or consultant, landscape architect, nursery manager, lawn care sales, management or consultant, turf fertilizer sales

Exams: There are specific certification exams for those wishing to be certified in the Agriculture category, the Turf and Landscape category, or both. The application fee for each is \$100, which covers the first two years of certification once the exam is passed and eligibility has been met.

In summary, individuals seeking certification as a RMP Developer will generally incur costs with their time, travel, course tuitions, and examinations. As noted above, the application fee for exams is \$100. Expenses will be dependent on an individual’s existing expertise (training and experience) and their needs for completion of the certification requirements.

6) Beneficial impact the regulation is designed to produce.

Benefits of the regulations

The benefits of clean water have enormous positive economic impacts associated with tourism and eco-tourism, public health, aquatic based industries, and recreational pursuits.

As noted in a in a March 1983 EPA report entitled *A Comparison of Alternative Approaches for Estimating Recreation and Related Benefits of Water Quality Improvements*, user benefits arise from recreation uses of the river and are measured by users’ willingness to pay for the water quality levels necessary to permit these recreation uses. That is, the valuation depends on the use of the waterbody. In this case, as depicted in Table 14, clean water in a waterbody is worth something because recreationists are going to fish, boat, swim in, or picnic along the river. Intrinsic benefits consist of two value types: option value and existence value. Relevant to both current users and potential future users, option value is the amount an individual would be willing to pay for improved water quality (over his expected user values) to have the right to use the river in the future when there is uncertainty either in the river’s availability at a particular level or in his use of it (with the river meeting specified water quality conditions). Existence value, on the other hand, is an individual’s willingness to pay for the knowledge that a resource exists. That is, an individual--either a user or a nonuser--might be willing to pay something to maintain a high level of water quality at a recreation site in a particular area, even though he will not use it, so that his children may have future use of the site or simply to know that the ecosystem at the site will be maintained.

Table 14: A Spectrum of Water Quality Benefits

Potential Water Quality Benefits	Current User Benefits	Direct Use	In Stream	Recreational	fishing, swimming, boating, rafting, etc.
				Commercial	fishing, navigation
			Withdrawal	Municipal	drinking water, waste disposal
				Agricultural	irrigation
				Industrial/Commercial	cooling, process treatment, waste

		Indirect Use	Near Stream		disposal, steam generation	
				Recreational	hiking, picknicking, birdwatching, photography, etc.	
				Relaxation	viewing	
	Intrinsic Benefits	Potential Use		Option	Near-term potential use	
					Long-term potential use	
		No Use	Existence	Stewardship	maintaining a good environment for everyone to enjoy (including future family use-bequest)	
				Vicarious consumption	enjoyment from the knowledge that others are using the resource	

- Originally included in Figure 1-2 in a March 1983 EPA report entitled *A Comparison of Alternative Approaches for Estimating Recreation and Related Benefits of Water Quality Improvements*.

Although agriculture is only one of the key contributors of pollutants that are impacting the water quality of Virginia’s rivers, streams, and the Chesapeake Bay, it is a critical source to control through agricultural best management practices in order to restore and recognize the true values of Virginia’s waters.

Agriculture best management practices can be grouped according to their functions. The USEPA guidelines (USEPA. 1993. *Guidance Specifying Management Measures for Sources of Non-Point Pollution in Coastal Waters*. U.S. Environmental Protection Agency; Office of Water; Washington, D.C) identifies the following categories:

- Managing sedimentation. Measures to control the volume and flow rate of surface water runoff, keep the soil in place, and reduce soil transport.
- Managing nutrients. Measures to help to keep the nutrients in the soil, minimizing their movement into water bodies.
- Managing pesticides. Measures to reduce non-point source contamination from pesticides, by helping limiting pesticide use and managing its application.

- Managing confined animal facility: Measures to reduce or limit the discharge from confined animal facilities.
- Managing livestock grazing. Measures to reduce impacts of grazing on water quality.
- Managing irrigation. Measures to help farmers to improve water use efficiency.

Best management practices are individual or combinations of management, cultural and structural practices that researchers (academic or governmental), have identified as the most effective and economical way of reducing damage to the environment. In general, these practices are designed to efficiently use agricultural chemicals; increase ground cover, decrease the velocity of surface runoff, and improve the management of livestock waste. Controlling erosion is an essential aspect of preventing nutrient non-point source pollution of surface waters as eroding soil particles will carry excess nutrients, particularly phosphorous, with into water bodies. (Agriculture Non-point Source Pollution Control - Good Management Practices – Chesapeake Bay Experience; Cestti, Srivastava and Jung; Environmentally & Socially Development Unit, Europe and Central Asia, The World Bank, Washington, D.C.; January, 2003.)

A study conducted by the National Resources Conservation Service of the U.S. Department of Agriculture revealed that Virginia farmers can profit from implementing systems best management practices to prevent and control non-point pollution. None of the three cases investigated reported negative impacts (USEPA. 1995. *Notes on the Agriculture Environment*. U.S. Environmental Protection Agency; Non-Point Source News-Notes; No. 40).

- A combined dairy and poultry farm (110-head dairy and 50,000 broilers) in the Shenandoah Valley needed rotational pasture grazing and barnyard system including diversion, filter strip and fencing. After implementing all these practices with a 50 percent cost sharing, the farm benefited from an increased annual profit of \$4,200. Reduced labor costs were excluded from the calculations. In the absence of cost-sharing arrangement the increase in annual profits would have been reduced by \$3,000.
- A 575-acre cash grain operation needed additional nutrient management practices and improved pesticide management. The net economic gain after implementing the needed best management practices was \$1,050 per year, resulting from the reduction of purchases of commercial fertilizer.
- A combination cash grain/vegetable crops operation (500 acres of small grains and 350 acres of vegetables) on the Eastern Shore needed a nutrient management plan for the vegetable crop area. After implementing the BMP, the farm achieved a net positive gain of \$3,950 per year, resulting from savings on purchases commercial fertilizer.

A 2010 Report by Dr. Terance J. Rephann at the Weldon Cooper Center at University of Virginia titled “Economic Impacts of Implementing Agricultural Best Management Practice at Achieve Goals Outlined in Virginia’s Tributary Strategy” found that implementation of agricultural practices such as livestock stream exclusion, buffers, and cover crops would generate significant economic impacts. Every \$1 of state and/or federal funding invested in agricultural best management practices would generate \$1.56 in economic activity in Virginia. Implementing agricultural practices in Virginia to the levels necessary to restore the Bay would create nearly 12,000 jobs of approximately one year’s duration.

A 2010 Chesapeake Bay Foundation report entitled, “What is the “Value” of the Chesapeake Bay and Virginia’s Waterways?” looked at placing an economic value on the Chesapeake Bay and clean waters throughout the state. The report examined eight categories of benefits or avoided costs that help show the value of the Bay and clean waters.

- 1) The Chesapeake Bay provides significant economic benefits to the region. A 1989 study from the state of Maryland that looked at fishing, tourism, property, and shipping activities estimated the value of the Bay to Maryland and Virginia to be \$678 billion. Considering inflation, an expert panel in 2004 placed the value at over \$1 trillion, with an annual economic benefit of \$33 to \$60 billion. A 2010 report said that waters that make up Delaware’s portion of the Bay watershed—only 1% of the watershed—support 47,000 jobs and \$1 billion in annual economic activity.
- 2) The Bay supports an important commercial and recreational fishery. A study by the Virginia Institute of Marine Science estimated that in 2004 recreational and commercial fishing contributed \$1.23

billion in sales, \$717 million in income, and more than 13,000 jobs in Virginia, with two-thirds of the

impact from recreation. Other studies focused just on sport fishing in Virginia found that salt waters alone generate \$1 billion and 5,000 jobs, and saltwater and freshwaters combined create over \$2 billion and 15,000 jobs. The Bay region generated \$908 million in commercial fishing landings from 2000 to 2004, with 97 percent coming from the Bay. Blue crabs have an annual dockside value of

about \$50 million Bay-wide, rockfish generated \$97 million in 2003 for Maryland and Virginia, and

oysters contributed \$13 million to these states in 2008. Shellfish aquaculture is growing in Virginia, with clams generating \$70 million per year and oysters \$7 million per year. On the loss side, between 1994 and 2004 the value of Virginia’s seafood harvest decreased by 30 percent. A Chesapeake Bay

Foundation report stated that between 1998 and 2006 crabbing-related jobs in Maryland and Virginia

declined 40 percent, from 11,246 to 6,760. Other reports have estimated the decline in the number of watermen. The decline of the Bay oyster over the last 30 years has meant a loss of more than \$4 billion for Maryland and Virginia. A fish kill in the Shenandoah River watershed in 2005 resulted in \$700,000 in economic losses. Lastly, the gulf oil spill in 2010 has cost the Virginia oyster industry \$11.6 million.

- 3) The Bay and Virginia’s waters support a regionally vital tourist economy. In 2007, visitors to recreational and heritage sites generated \$18 billion in Virginia. Tourist and leisure related industries employed nearly 350,000 workers in Virginia as of June 2010. More than 23 million people visited Virginia’s national and state parks during 2009. Statewide, travelers spent over \$17 billion during 2006. Nationwide in 2006, almost 3 million people fished, hunted, or watched wildlife, and spent over \$2.4 billion pursuing these activities. A 2006 study compared the 1996 water quality of the Bay

with what it would have been without the Clean Water Act and estimated that the annual recreational boating, fishing, and swimming benefits of water quality improvements ranged from \$357.9 million to \$1.8 billion.

- 4) Clean waterways increase property value. A U.S. Environmental Protection Agency (EPA) study indicated that clean water can increase the value of single family homes up to 4,000 feet from the water's edge by up to 25 percent. A 2000 study concluded that improvements in water quality along Maryland's western shore to levels that meet state bacteria standards could raise property values 6 percent. High water clarity was shown to increase average housing value by 4 to 5 percent or thousands of dollars. Homes situated near seven California stream restoration projects had 3 to 13 percent higher property values than similar homes located on damaged streams. A study by the Brookings Institute projected a 10 percent increase in property values for homes that would abut a proposed \$26 billion Great Lakes restoration project.
- 5) Healthy waters reduce public health costs. Clean water decreases public health burdens associated with consuming tainted fish or shellfish or exposure to waterborne infectious disease while recreating. Mercury fish consumption advisories in Maryland result in annual losses of \$8.83 million for saltwater fishing and \$520,000 for the commercial striped bass fishery. Economic valuation studies indicate the annual human health benefits from reducing mercury pollution at tens of millions to billions of dollars from avoided health problems and lost productivity. Another study estimated the cost associated with exposure to polluted recreational marine waters to be \$37 per gastrointestinal illness, \$38 per ear ailment, and \$27 per eye ailment.
- 6) Pollution reductions lower drinking water and other utility costs. Reducing pollution inputs from

pipes and land-based sources can reduce locality costs to treat drinking water sources to safe

standards. New York City's expenditure of \$1 billion over the last decade to protect the watersheds north of the city that supply its drinking water avoided the need to build a \$6 billion treatment plant. An EPA study of drinking water source protection efforts concluded that for every \$1 spent on source water protection, an average of \$27 is saved in water treatment costs.

- 7) Installation of agricultural "best management practices" improve water quality and Virginia's economy. A study by the University of Virginia found that implementation of the agricultural practices to reduce runoff pollution called for in Virginia's Chesapeake Bay "tributary strategy," such as livestock stream exclusion, buffers, and cover crops, would generate significant economic impacts. Over a five year period these actions would create \$940 million in industrial output, a \$455 million impact on gross domestic product, and create nearly 12,000 jobs.
- 8) Clean waters sustain aesthetic and cultural value. While not easily monetized, clean waterways improve aesthetics and viewsheds that attract businesses and visitors to the region, and nourish heritage economies and cultures that rely upon healthy and productive waters for their way of life.

Virginia's investment in improving water quality in the Commonwealth's rivers and streams and the Chesapeake Bay will result in significant economic benefits across the state.

Alternatives

Please describe any viable alternatives to the proposal considered and the rationale used by the agency to select the least burdensome or intrusive alternative that meets the essential purpose of the action. Also, include discussion of less intrusive or less costly alternatives for small businesses, as defined in §2.2-4007.1 of the Code of Virginia, of achieving the purpose of the regulation.

Alternatives to this regulatory proposal are limited. Particularly in the Chesapeake Bay Watershed if the necessary nutrient and sediment reductions specified in the Watershed Implementation Plan are not forthcoming from voluntary participation in this regulatory program, in 2017 the Commonwealth may have to determine whether mandatory agricultural programs need to be considered or whether the necessary load reductions will be partially reallocated to localities regulated municipal separate storm sewer systems and other regulated sources.

The voluntary approach advanced through the resource management plan regulatory approach is considered the least burdensome or intrusive alternative to seeking necessary nutrient and sediment reductions from the agricultural sector. As it applies to the Chesapeake Bay TMDL and the associated Watershed Implementation Plan, the EPA has also noted that “[t]his program has great potential for providing substantial incentives to farmers to implement high priority water quality conservation practices that will help the Commonwealth meet its commitments outlined in the Phase II Watershed Implementation Plan. We commend the TAC [Regulatory Advisory Panel] in its efforts to find the balance in a credible program that engages farmers in a positive way in the Bay restoration efforts.” Additionally, both the EPA and USDA have noted that this regulatory program may serve as a model nationally and that a program such as this may address “agricultural certainty”.

Regulatory flexibility analysis

Please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

For the purposes of this regulatory action the primary small business entity to be affected is the farming community. Most farms meet the definition of small business as they are (i) independently owned and operated and (ii) employ fewer than 500 full-time employees or have gross annual sales of less than \$6 million. The proposed regulations were developed working with a Regulatory Advisory Panel that had significant participation from the agricultural community. As such, the proposed regulations were developed with minimizing impacts to farmers that voluntarily participate in the program in mind. This was also done in response to subsection B 1 of § 10.1-104.8 of the Code of Virginia that specifies that the regulations shall be technically achievable and take into consideration the economic impact to the agricultural landowner or operator. Reporting and certification requirements for farmers have been kept minimal and the compliance requirements echo those set out in § 10.1-104.8 of the Code of Virginia. It is also important to remember that participation in this regulatory program is voluntary. Accordingly, if a farmer feels that the requirements are adverse, they do not have to participate.

Family impact

Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

It is not anticipated that this regulation will have a direct impact on the institution of the family or family stability. However, improvement of water quality does have positive public health and safety benefits that have an indirect impact on families.

Detail of changes

Please list all changes that are being proposed and the consequences of the proposed changes. If the proposed regulation is a new chapter, describe the intent of the language and the expected impact. Please describe the difference between existing regulation(s) and/or agency practice(s) and what is being proposed in this regulatory action.

If the proposed regulation is intended to replace an emergency regulation, please list separately (1) all differences between the pre-emergency regulation and this proposed regulation, and (2) only changes made since the publication of the emergency regulation.

NOTE: In terms of “other regulations and law that apply”, all of the sections proposed within this regulatory action are in accordance with Chapter 781 of the 2011 Virginia Acts of Assembly (HB1830) and the resulting sections of the Code of Virginia (§§ 10.1-104.7, 10.1-104.8, and § 10.1-104.9). However, the presumption of full compliance provided in subsection A of § 10.1-104.7 shall not prevent or preclude enforcement of provisions pursuant to (i) a resource management plan or a nutrient management plan otherwise required by law for such operation, (ii) a Virginia Pollutant Discharge Elimination System permit, (iii) a Virginia Pollution Abatement permit, or (iv) requirements of the Chesapeake Bay Preservation Act (§ 10.1-2100 et seq.).

Section number	Proposed requirements	Intent and likely impact of proposed requirements
4VAC50-70-10	Establishes a new section that sets out definitions to be utilized within the new Chapter. These include “Assessment”, “Best management practice”, “Board”, “Corrective action agreement”, “Department”, “Management unit”, “NRCS”, “Operator”, “Owner”, “Person”, “Resource management plan”, “Review authority”, “RMP developer”, “Soil and water conservation district”, “Technical Review committee”, and “Total maximum daily load”.	This section provides definitions for terms utilized in the regulations in order to provide additional clarity for those subject to or otherwise interested in this Chapter.
4VAC50-70-20	Establishes a new section that outlines the purpose and authority for the chapter and specifies that “these regulations are adopted to clarify and specify the criteria that must be included in a resource management plan and the processes by which a Certificate of RMP Implementation is issued and maintained”.	This section outlines the purpose of the regulation and specifies that agricultural landowners or operators who fully implement and maintain the applicable components of their resource management plans, in accordance with the criteria for such plans, shall be deemed to be in full compliance with any load allocation contained in a TMDL established under § 303(d) of the federal Clean Water Act addressing benthic, bacteria, nutrient, or sediment impairments; any requirements of the Virginia Chesapeake Bay TMDL.

		<p>Watershed Implementation Plan; and applicable state water quality requirements for nutrients and sediment. As such, compliance is deemed a “safe harbor” from the listed provisions for a period of 9 years, the duration of the certificate.</p>
<p>4VAC50-70-30</p>	<p>Establishes a new section that stipulates the applicability of other laws and regulations and specifies that “[n]othing in this chapter shall be construed as limiting the applicability of other laws, regulations, or permits, including but not limited to, a Virginia Pollutant Discharge Elimination System Permit, a Virginia Pollution Abatement Permit, a nutrient management plan otherwise required by law, any requirements of the Chesapeake Bay Preservation Act, and any requirements of the Agricultural Stewardship Act”.</p>	<p>This section specifies that other laws, regulations, or permits may still be applicable even if the owner or operator has a Certificate of RMP Implementation.</p>
<p>4VAC50-70-40</p>	<p>Establishes a new section that sets out the minimum standards of a resource management plan. Depending on land use and whether the BMP requirements are applicable to the management unit and needed based on an on-farm assessment, the following requirements will apply:</p> <ul style="list-style-type: none"> • For all cropland or specialty crops: <ul style="list-style-type: none"> ○ A nutrient management plan; ○ A forest or grass buffer between cropland and perennial streams with a minimum width of 35 feet; ○ A soil conservation plan that achieves a maximum soil loss rate to “T”; and ○ Cover crops, when needed to address nutrient management and soil loss requirements. • For all hayland: <ul style="list-style-type: none"> ○ A nutrient management plan; ○ A forest or grass buffer between cropland and perennial streams with a minimum width of 35 feet; and ○ A soil conservation plan that achieves a maximum soil loss rate to “T”. • For all pasture: <ul style="list-style-type: none"> ○ A nutrient management plan; ○ A pasture management plan or soil conservation plan that achieves a maximum soil loss rate of “T”; and ○ A system that limits or prevents livestock access to perennial streams. 	<p>This section sets out the minimum resource management plan criteria that BMPs must be identified in the resource management plan to address. Once identified, the owner of operator must fully implement such BMPs in order to qualify for a Certificate of RMP Implementation and the associated “safe harbor”.</p>
<p>4VAC50-70-50</p>	<p>Establishes a new section regarding components of a resource management plan that outlines:</p>	<p>This section outlines farm assessment protocols to be followed by the RMP</p>

	<ul style="list-style-type: none"> • The information to be collected by the RMP developer when developing the RMP, • Specifies the components to be included in a resource management plan such as the BMPs that are necessary to achieve the minimum standards set out in 4VAC50-70-40 and a schedule for the implementation of those BMPs, and • Includes RMP developer and owner or operator certifications. <ul style="list-style-type: none"> ○ The RMP developers certify whether “the RMP is true and correct in their professional judgment”. ○ The owner or operator attests that they are the “responsible individual to be implementing the RMP in its entirety” and “shall adhere to the RMP”. ○ The owner or operator is also allowing “the review authority to conduct inspections of properties within the management unit as needed to ensure the adequacy of the RMP in accordance with 4VAC50-70-70” and agreeing to contact the RMP developer regarding “potential material changes” and the review authority regarding “a complete change in owner or operator of the management unit(s) under a RMP”. 	<p>developer, information regarding the RMP developer’s preparation of the RMP, and specifies certain certifications to be completed by the RMP developer and the owner and operator. Development of the resource management plan is a fundamental component of the RMP program.</p>
<p>4VAC50-70-60</p>	<p>Establishes a new section that outlines processes associated with making revisions to a resource management plan.</p> <ul style="list-style-type: none"> • Upon notification of the RMP review authority of a change in owner or operator of the management unit with a signed RMP where it involves the complete transfer of one or more RMPs and any Certificate of RMP Implementation: <ul style="list-style-type: none"> ○ The review authority shall contact the new owner or operator within 60 days of the new owner or operator assuming control of the management unit regarding implementation of the RMP and any necessary revisions. ○ The new owner or operator, following consultation with the review authority may elect to: <ul style="list-style-type: none"> ▪ Implement and maintain the provisions of the existing RMP; ▪ Request a RMP developer revise the RMP; or ▪ Choose not to continue implementing a RMP. • Upon notification of the RMP developer by the owner or operator with a signed RMP that changes in the management unit or implementation of the RMP may create needs for revision, the RMP developer shall review the RMP (within 30 days) to determine if material changes to the management unit require a revision of the RMP. • The section provides a listing of the material changes to the management unit that may require a revision of the RMP. • A RMP developer will determine if revision of the RMP is required. <ul style="list-style-type: none"> ○ When the RMP developer determines that revision of the existing RMP is not necessary, the RMP developer shall provide such determination to the 	<p>This section outlines the various situations and processes by which an owner or operator working with their RMP developer makes revisions to their resources management plan. A plan must be current for a Certificate of RMP Implementation to be issued.</p>

	<p>requesting owner or operator in writing.</p> <ul style="list-style-type: none"> ○ When the RMP developer determines that revision of the existing RMP is necessary, the owner or operator may elect to: <ul style="list-style-type: none"> ▪ Request the RMP developer revise the RMP as necessary to fulfill RMP requirements; or ▪ Choose not to continue implementing a RMP whereupon the RMP for the management unit shall no longer be valid. ● The section specifies that when a new or modified watershed implementation plan is issued for the Chesapeake Bay or a new or modified local approved TMDL is issued which assigns a load to agricultural uses, a RMP covering land with waters that drain to such TMDL shall be deemed sufficient when the RMP has been revised to address the new or modified TMDL and the owner or operator agrees to implement the revised RMP, except when the owner or operator already holds a Certificate of RMP Implementation. <ul style="list-style-type: none"> ○ When an owner or operator holds a Certificate of RMP Implementation that has not expired, the owner or operator may continue operation of the RMP without such revisions for the lifespan of the Certificate of RMP Implementation so long as the owner or operator is deemed to be fully implementing the RMP. ● When an owner or operator with a revised RMP fulfills all RMP and Certificate requirements, and the owner or operator holds a Certificate of RMP Implementation that has not expired for the management unit addressed by the revised RMP, the owner or operator may request that the department revoke the existing Certificate of RMP Implementation and issue a new Certificate of RMP Implementation. Upon verification that all requirements have been satisfied, the department shall issue a new Certificate of RMP Implementation in a timely manner. <ul style="list-style-type: none"> ● Revision of a RMP by a RMP developer requires: <ul style="list-style-type: none"> ○ If a Certificate of RMP Implementation has not been issued, the revised RMP shall be provided to the review authority and shall be subject to all specified review requirements. ○ If a Certificate of RMP Implementation has been issued by the department and its duration has not expired, such existing Certificate of RMP Implementation shall remain valid for the balance of time remaining since it was originally issued by the department or a new Certificate of RMP Implementation may be issued where appropriate. ○ An existing or new owner or operator shall sign a revised RMP. ○ When a valid Certificate of RMP Implementation has been issued by the department for the management unit, the RMP developer shall provide the
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	<p>review authority and the department with a copy of a revised RMP.</p> <p>Establishes a new section that outlines the processes associated with review of a resource management plan. The process shall include the following:</p> <ul style="list-style-type: none"> • Upon completion of a new or revised RMP, the owner or operator, or the RMP developer on behalf of the owner or operator, shall submit the RMP to the review authority. • Each soil and water conservation district shall establish a Technical Review Committee that will ensure the RMP fully meets the minimum standards of a RMP and the components of a RMP. The section also specifies the timelines for conducting the review and how the review will be handled if multiple districts are involved. • RMPs received by the department where no local soil and water conservation district exists must fully meet minimum standards of a RMP and the components of a RMP and shall be reviewed by the department. The section also specifies the timelines for conduction the review. • When a RMP is determined by the review authority to be insufficient to meet minimum standards set forth in 4VAC50-70-40 and the components specified in 4VAC50-70-50 such review authority shall work with the owner or operator and the RMP developer to revise the RMP. • Where a RMP is deemed sufficient the notification issued to the owner or operator and the RMP developer by the review authority shall include approval of the plan and its implementation. • When an owner or operator is aggrieved by an action of the review authority, the owner or operator shall have a right to appeal. 	<p>This section specifies the review process that a resource management plan must undergo prior to approval being issued by the review authority to the owner or operator to implement the plan. The section also sets out the process by which plan deficiencies are documented and the owner or operator notified. The owner or operator must have an approved plan that outlines the necessary BMPs to be implemented prior to issuance of a Certificate of RMP Implementation.</p>
<p>4VAC50-70-80</p>	<p>Establishes a new section establishing the process for the issuance of a Certificate of Resource Management Plan Implementation. The process shall include the following:</p> <ul style="list-style-type: none"> • Prior to issuance of a Certificate of RMP Implementation for a management unit, confirmation shall be made by the RMP developer that no revision of the RMP is required and as such is adequate, and verification of the full implementation of the RMP shall be completed. • The owner or operator shall request the verification of RMP implementation by the review authority in a format provided by the department. Such verification submittal shall include a complete copy of the RMP including any referenced plans and authorizations for the review authority and the department as specified to conduct onsite inspections. • When the local soil and water conservation district has determined the RMP to be adequate and fully implemented, the lead soil and water conservation district board 	<p>This section outlines the process through which an owner or operator's RMP and the implementation of the BMPs are verified by the review authority. The section also outlines the process by which a Certificate of RMP implementation is issued when the Department receives documentation from the review authority supporting that the plan is adequate and has been fully implemented. It also outlines the process for when a plan is not adequate or fully implemented. The duration of the Certificate is also established in this section and has been set for a period</p>

	<p>shall affirm such adequacy and implementation, and submit the required documentation to the department for action. Upon receiving such documentation supporting that the plan is adequate and has been fully implemented, the department shall issue a Certificate of RMP Implementation.</p> <ul style="list-style-type: none"> • Where the department is the review authority, the department shall determine adequacy and full implementation of the RMP. If the RMP is determined to be adequate and fully implemented, the department shall affirm such implementation by issuing a Certificate of RMP Implementation. • If the resource management plan is not adequate or has not been fully implemented, the review authority shall provide the owner or operator with written documentation that specifies the deficiencies of the RMP. The owner or operator may correct the named deficiencies and request verification of RMP adequacy or implementation at such time as the shortcomings have been addressed. • A Certificate of RMP Implementation shall be valid for a period of nine years. • Upon the expiration of the Certificate of RMP Implementation, a new RMP may be prepared by a plan developer for the management unit upon request by the owner or operator. The RMP must conform with all existing TMDL implementation plans applicable to the management unit to include the Chesapeake Bay and any local approved TMDL, which assign a load to agricultural uses and impact any portion of the management unit. The plan developer shall ensure the new RMP also complies with the current minimum standards of a RMP. • The department shall maintain a public registry on the agency's website of all current Certificates of RMP Implementation in accordance with confidentiality provisions specified in an exemption to the Freedom of Information Act. 	<p>sufficient to encourage a farmer to participate in the program.</p>
<p>4VAC50-70-90</p>	<p>Establishes a new section outlining how periodic inspections of a management unit that has been issued a Certificate of RMP Implementation shall be performed. The section specifies that:</p> <ul style="list-style-type: none"> • Inspections may be performed by the review authority or the department. • Onsite inspections shall occur no less than once every three years but not more than annually on lands where an active Certificate of RMP Implementation has been issued provided that no deficiencies have been noted that require more frequent inspections or re-inspections. • Upon the completion of the inspection, an inspection report shall be completed in a format provided by the department, to document the implementation of the RMP on the management unit and shall identify any identified deficiencies that may need to be addressed through revision of the RMP. • Where deficiencies are noted it authorizes the department to proceed pursuant to the section on compliance. 	<p>This section specifies that the owner or operator issued a Certificate of RMP Implementation must make his management units subject to periodic inspections by the review authority to ensure the continued implementation, maintenance of, and compliance with the RMP. Upon completion of the inspection, an inspection report is issued that identifies any deficiencies noted that need to be addressed by the owner or operator in order to maintain their Certificate of RMP Implementation coverage.</p>

	<ul style="list-style-type: none"> All inspections or re-inspections conducted in accordance with this chapter shall occur only after 48 hours of prior notice to the owner or operator unless otherwise authorized by the owner or operator. 	
4VAC50-70-100	<p>Establishes a new section regarding compliance and outlines how deficiencies identified through an inspection shall be provided to the owner or operator and how a corrective action agreement shall be developed, reviewed, and subsequently agreed to unless otherwise revoked through inability to reach an agreement, failure of the owner or operator to fully implement the agreed upon corrective action agreement, or upon a request from the owner or operator. Timelines for every step of the process are provided in the section.</p>	<p>This section identifies the process to be followed should deficiencies have been identified during an inspection. It outlines the Department's required written notice to the owner or operator noting the deficiencies, and the timeline and process through which an owner or operator comes into compliance, including the development and implementation of a corrective action agreement. Should the owner or operator fail to fully implement the corrective action agreement, the Department shall revoke their Certificate of RMP Implementation.</p>
4VAC50-70-110	<p>Establishes a new section on appeals that sets out the process for an owner or operator that has been aggrieved by any action of a soil and water conservation district and any party aggrieved by and claiming the unlawfulness of a case decision of the department or of the board upon an appeal to it.</p>	<p>This section outlines the various rights of appeal of specified entities that may have been aggrieved by a case decision made pursuant to this Chapter.</p>
4VAC50-70-120	<p>Establishes a new section on reporting and specifies when BMP data collection shall occur and how this information is reported in the Virginia Agricultural BMP Tracking Program or any subsequent automated tracking systems made available to soil and water conservation districts by the department. The section also specifies timelines for reporting data and the protections offered to specified data in accordance with the Freedom of Information Act. It also specifies what the department may do with the reported information.</p>	<p>This section outlines the situations where data collection and reporting shall occur and that such information shall be entered into the Virginia Agricultural BMP Tracking Program by the soil and water conservation districts by the specified date. The data collection and entry is a key element of the program in order for the Commonwealth to properly document and report progress towards the Chesapeake Bay TMDL watershed implementation plan and other local approved TMDLs.</p>
4VAC50-70-130	<p>Establishes a new section that speaks to the review of duties performed by soil and water conservation districts. The section specifies that:</p> <ul style="list-style-type: none"> The department shall periodically conduct a comprehensive review of the RMP 	<p>This section specifies that the Department shall periodically conduct a comprehensive review at least once every five years of the</p>

	<p>duties performed by each soil and water conservation district to evaluate whether requirements set forth by this chapter have been satisfactorily fulfilled.</p> <ul style="list-style-type: none"> • The department shall develop a schedule for conducting periodic reviews and evaluations. • Each district shall receive a comprehensive review at least once every five years; however, the department may impose more frequent, partial, or comprehensive reviews with cause. • The section also speaks to how programmatic deficiencies will be addressed. 	<p>RMP duties performed by each soil and water conservation district. The section outlines how the Department shall document and convey any deficiencies noted and corrective actions necessary to the district board of directors within 30 days following the review. The section also sets out what actions the Department may take should deficiencies persist.</p>
<p>4VAC50-70-140</p>	<p>Establishes a new section that sets out the RMP developer qualifications and certification process. The section also outlines certification revocation procedures.</p>	<p>This section establishes the qualifications and certification process for an individual to serve as a resource management plan developer. The section also outlines a revocation process for the certification where given circumstances are identified. Certification of the RMP developers will be a key element to the success of the program.</p>
<p>4VAC50-70-150</p>	<p>Establishes a new section that advances the adoption of RMPs by directing the department and districts to encourage and promote the adoption of RMPs among the agricultural community.</p>	<p>This section specifies that the Department and the Districts shall encourage and promote the adoption of RMPs among the agricultural communities across the Commonwealth.</p>