

REPORT OF THE SECRETARY OF NATURAL RESOURCES

Proposed Expansion of the Use of Nutrient Credits in Virginia
pursuant to Senate Joint Resolution 334 (2011)

TO THE GOVERNOR AND THE GENERAL ASSEMBLY



**COMMONWEALTH OF VIRGINIA
RICHMOND
JANUARY 2012**



COMMONWEALTH of VIRGINIA

Office of the Governor

Doug Domenech
Secretary of Natural Resources

January 9, 2011

The Honorable Robert F. McDonnell
Governor, Commonwealth of Virginia

The Members of the Virginia General Assembly

Dear Governor and Members of the General Assembly:

Senate Joint Resolution 334 (2011) directed the Secretary of Natural Resources to study the possible expansion of the use of nutrient credits in Virginia to assist in meeting the federal requirements imposed by the Chesapeake Bay Total Maximum Daily Load (TMDL). In Virginia's Chesapeake Bay Watershed Implementation Plan (WIP), we suggested that the use of nutrient credits could provide additional flexibility and cost-effectiveness as we implement the practices and programs necessary to meet Chesapeake Bay water quality goals.

As directed by the resolution, we established a broad-based committee of interested stakeholders to assist us in evaluating the issues raised in SJR 334 and the WIP. The committee agreed that an expansion of the use of nutrient credits in Virginia is warranted and based on their work we are proposing a detailed framework for such an expansion.

We believe that our ongoing and serious efforts to restore the quality of Virginia's waters will benefit from the recommendations contained in this report.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to read "Doug Domenech".

Douglas W. Domenech

TABLE OF CONTENTS

Section I: Introduction and Overview, pages 5 - 8

Summary

Establishing the Study Committee

Nutrient Credit Trading and Offsets in Virginia

Overview of Trading and Offsets Elements of Virginia's Watershed Implementation Plan

Definitions

Section II: Nutrient Credit Expansion Framework, pages 9 - 13

I. Credit Certification and Establishment of Credit Generating Activities

1. Clear Regulatory Authority
2. Nonpoint Source Credit Certification Framework
3. Point Source Credits
4. Process for Evaluation Credit Generating Proposals
5. Grandfathering of Credit Values
6. Bundling of Credits
7. Virginia Nutrient Credit Registry
8. Nutrient Credit Exchange Association Trading Ledger
9. Credit Registration Fee
10. Credits Subject of Auditing and Oversight

II. Credit Uses

1. Wastewater
2. Stormwater
3. Concentrated Animal Feeding Operations
4. Other Purchasers
5. Local Water Quality

III. Baselines for Credit Generation

1. Urban Practices
2. Agricultural Practices
3. Land Use Management and Conversion
4. Other Practices

IV. Additional Framework for Banking and Credit Generation Facilities

1. Entities the may Submit Credit Generation Proposals
2. Credit Retirement

Appendix 1: Roster of Study Committee Members

Appendix 2: Senate Joint Resolution 334 (2011)

SECTION 1: Introduction and Overview

Summary

Virginia's experience with nutrient trading and offsets established the foundation for the commitment in the Chesapeake Bay Phase I Watershed Implementation Plan (WIP) to propose an expanded program that may assist in meeting the challenging and expensive requirements of the Chesapeake Bay Total Maximum Daily Load (TMDL). The paramount goal of the current trading program and any future expansion is to protect and improve water quality in the Chesapeake Bay watershed.

This report proposes an expansion of the use of nutrient credits in Virginia and makes recommendations to the Governor and the General Assembly regarding a framework for the expansion that defines the nature of regulatory authority and the entities that may participate. This report also recommends a process by which nutrient credit should be certified and recommends agency regulatory action necessary to implement the proposed framework.

Establishing the Study Committee

The WIP submitted by Virginia in December, 2010 proposed a study of the expansion of the use of nutrient credits in Virginia. In the 2011 session of General Assembly, the House of Delegates and the Senate of Virginia adopted Senate Joint Resolution 334 (See Appendix 2) that directed the Secretary of Natural Resources to undertake such a study and report to the 2012 session General Assembly.

As called for in the resolution, the Secretary assembled a broad-based committee of stakeholders to examine the issues contained in the WIP and make recommendations relating to a possible expansion. A roster of committee members and agency personnel can be found in Appendix 1 of this report. Department of Environmental Quality staff was asked by the Secretary of Natural Resources to lead the study.

This report represents the work of the committee which first met in April of 2011. Subsequent meetings were held in June, August, October and November of 2011. A full record of the agendas, presentations and draft documents of the committee is housed on DEQ's website at:

<http://www.deq.virginia.gov/vpdes/NutCrdExStudy.html>

This report represents the consensus of the Committee on the key issues related to the proposed expansion. It does not represent unanimous agreement on every detail. The understanding of the committee is that additional refinement to any expansion proposals will take place as legislation is considered by the General Assembly and through the proposed regulatory actions subsequently taken by Virginia state agencies.

Nutrient Credit Trading and Offsets in Virginia

Since the passage of House Bill 2862 in the 2005 session of the General Assembly, significant wastewater facilities have been authorized to engage in trading within each of Virginia's Chesapeake Bay major river basins to achieve compliance with mandated nutrient loading caps prescribed by the State Water Control Board. Nutrient Credit trades between significant point source facilities (municipal wastewater treatment plants and industrial facilities) are governed by the General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820-10) that is authorized by §62.1 – 44.19:12 – 19 of the Code of Virginia. Complete information regarding the permit can be found at <http://www.deq.virginia.gov/vpdes/nutrienttrade.html>

The trading program is based on allocations of nitrogen and phosphorus established under the permit. It allows point source to point source trading to comply with waste load allocations and allows the use of nonpoint source credits only to offset new or expanding point source facilities. The 2005 legislation also authorized the establishment of the Nutrient Credit Exchange Association, a private non-stock corporation that facilitates trades among its members.

Section 10.1 – 603.8:1 of the Code of Virginia authorizes the use of nonpoint source nutrient credits certified by DEQ to meet a portion of the post-construction phosphorus loading requirement of Virginia's stormwater management program in the Chesapeake Bay watershed. Under current law, perpetual stormwater offsets may be used to meet a portion of the phosphorus loading limitations prescribed under Virginia's stormwater management program. Also, the Board of Soil and Water Conservation is authorized to develop a statewide program for nutrient trading under the stormwater offsets provision.

Overview of Trading and Offsets Elements of Virginia's Watershed Implementation Plan

Section 1.7 of Virginia's Phase I Watershed Implementation Plan (see: <http://www.deq.virginia.gov/tmdl/baywip.html>) calls for an expansion as a tool for introducing additional flexibility and cost effectiveness in the implementation of the practices necessary to achieve the reductions required in the TMDL. This report responds to the issues raised in the WIP and proposes the participation of additional source sectors and recommends a framework for an administrative structure that meets private and public obligations and expectations.

Definitions as used in the report:

Aggregator: A public or private entity that packages and offers for sale credits from multiple practices or sources in one or more instruments for use by a credit buyer.

Baseline: The practices, actions or levels of reductions that must be in place before credits can be generated.

Best Management Practice (BMP): Best management practices (BMPs) are structural and nonstructural practices, systems and procedures developed over time to help control or manage pollution impacts from land uses or human activities.

Buyer: A buyer of credits for regulatory or nonregulatory uses.

Chesapeake Bay Watershed Model: A computer model maintained by the EPA Chesapeake Bay Program that describes both hydrologic and water quality processes as well as estimates the load of a specific pollutant to a water body and makes predictions about how the load would change as remediation methods or BMPs are implemented.

Chesapeake Bay Total Maximum Daily Load (TMDL): Specifies the maximum amount of pollutants (nitrogen, phosphorus and sediment) that the Chesapeake Bay can receive and still meet applicable water quality standards.

Delivered load: The amount of a pollutant delivered to the tidal waters of the Chesapeake Bay or its tidal tributaries from an upstream point of discharge/runoff after accounting for permanent reductions in pollutant loads due to natural in-stream processes in nontidal rivers.

DCR: The Virginia Department of Conservation and Recreation

DEQ: The Virginia Department of Environmental Quality

MS4 (Municipal Separate Storm Sewer System): a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States that is designed or used for collecting or conveying stormwater.

Nutrient Bank: A private or public entity that creates and sells or brokers sale of credits

Nutrient Credit Exchange Association: A non-stock corporation created pursuant to Chapter 10 of the Title 13.1 of the Code of Virginia.

Nutrient Credit: Annual (calendar year) nutrient reduction beyond established regulatory baselines as expressed in pounds of nitrogen or phosphorus delivered to tidal waters that is certified and available for sale. Credits are identified by the year in which they were created. For wastewater treatment facilities, means the difference between (i) the waste load allocation for a permitted facility specified as an annual mass load of total nitrogen or phosphorus and (ii) the monitored annual mass load of total nitrogen discharged by that facility, where clause (ii) is less than clause (i), and where the difference is adjusted by the applicable delivery factor and expressed as pounds per year of delivered total nitrogen or phosphorus load.

Nutrient Offset: Amount of nutrient credit required by law or regulation or established pursuant to a TMDL to compensate for a new or increased nutrient load from a regulated or other specified activity.

Perpetual Credits: nutrient reduction actions that are a permanent reduction from baseline dates and conditions.

River basin: Those river basins for which separate tributary strategies were prepared pursuant to § 2.2-218 of the Code of Virginia that includes the Potomac/Shenandoah, Rappahannock, York, and James River basins, and the Eastern Coastal Basin, which encompasses the creeks and rivers of the Eastern Shore of Virginia that are west of Route 13 and drain to the Chesapeake Bay.

Seller: A provider of registered credits to a buyer.

Significant Wastewater Discharger or Treatment Plant: (i) a sewage treatment works discharging to the Chesapeake Bay watershed upstream of the fall line with a design capacity of 0.5 million gallons per day or greater, or an equivalent load discharged from industrial facilities; (ii) a sewage treatment works discharging to the Chesapeake Bay watershed downstream of the fall line with a design capacity of 0.1 million gallons per day or greater, or an equivalent load discharged from industrial facilities;

Term Credits: nutrient reduction activities that generate credits for a determined and finite period of time of at least one-year

Virginia Credit Registry: A proposed online database of certified credits available for sale in Virginia with the capability of tracking all credits in a transparent and efficient manner.

Watershed Implementation Plan (WIP): The Phase I WIP strategy submitted by Virginia and approved by EPA in December 2010 to meet the nutrient and sediment allocations prescribed in the Chesapeake Bay Watershed Total Maximum Daily Load (TMDL).

Wetland or Stream Bank: A site, or suite of sites, where resources (e.g. wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by federal or state permits.

SECTION 2. Nutrient Credit Expansion Framework

The following is a proposed framework for the expansion of the use of nutrient credits in Virginia. While the committee has recommended this framework, the final programs would be left to a regulatory process governed by changes to the Code of Virginia that may be enacted by the General Assembly.

I. Credit Certification and Establishment of Credit Generating Activities:

1. Clear Regulatory Authority Established

DCR, or the lead nonpoint source pollution agency in Virginia, should be given the clear regulatory authority to certify non-point source credits that include activities that are beyond established baseline requirements (see baseline discussion in Section III below). DCR should establish, by regulation, a process for evaluating and potentially certifying nonpoint source credits including but not limited to agricultural or urban stormwater BMPs, use or management of manure, land use conversion, stream or wetlands restoration, including the extent to which existing wetland or stream banks are proposed to be converted to nutrient banks or any other proposed nutrient removal practices either on land or instream, if such practices are beyond legislative, regulatory and permit requirements adopted or implemented to satisfy the Virginia Chesapeake Bay TMDL Watershed Implementation Plan (WIP) and the Chesapeake Bay TMDL. Existing limitations on the use of publicly funded practices to generate credits should remain in place.

2. Nonpoint Source Credit Certification Framework

- a. Reduction values assigned to the practices evaluated by DCR should be consistent with the efficiency and nutrient reduction values assigned by the Chesapeake Bay Program Watershed model in use by EPA at the time of certification for those practices unless more relevant or accurate technical information is available and presented to the DCR as part of a credit-generating proposal. The agency should use best available information from scientific literature, monitoring or modeling information to evaluate any practices not included in the suite of practices recognized by the model.
- b. As part of the certification process, DCR should label credits that are derived from a permanent change to the landscape as “perpetual,” as long as those credits are permanently protected by an easement or other legal instrument attached to the deed of the parcel. Credits that are derived from activities that do not result in permanent reductions and thus are creditable for a period of one or more years depending on the lifespan or renewal requirements for a particular practice should be labeled as “term” credits. The minimum timeframe for any credit should be one year.

- c. DCR may wish to employ a phased approach to credit certification by establishing the regulatory framework described above based on workload, availability of supporting data or other factors.

3. Point Source Credits

DEQ should continue to certify credits that may be generated from processes closely associated with infrastructure and facilities historically regulated by DEQ such as water withdrawals, treatment and wastewater discharges, connection of septic to treatment plants, and water reuse.

4. Process for Evaluating Credit Generating Proposals

The regulatory framework established by DCR should be based on the current process for proposing and evaluating wetlands and stream restoration credit projects and should have the following features:

- a. A plan for achieving nutrient reductions beyond applicable baselines should be submitted to the agency. It should contain information that could include information regarding the entity proposing to generate the credit and address any other requirements for such proposal as promulgated by the agency, including financial assurance and any ongoing operation or maintenance (see h. below).
- b. The plan should be reviewed by interagency team of agencies with relevant expertise chaired by DCR.
- c. A site visit or other evidence (such as photographic) deemed sufficient by the department should be part of the review.
- d. Such a plan should be available to the public for review including proposed practices or treatment and their location.
- e. The agency should prepare an evaluation letter that offers initial evaluation and specifies any actions needed by the applicant to finalize a proposal.
- f. Following final review, DCR should specify when such credits may be placed on the Virginia Nutrient Credit Registry (see below for proposed Virginia Credit Registry)
- g. The proposal should include plans and source of financing for any required operation or maintenance over time.
- h. Financial assurances from the seller that may include letters of credit, escrow funds, surety bonds or insurance policies that assure performance of credits sold or other assurances as approved. In the case of an MS4 permittee or public utility owner, availability of an ongoing financing method such as tax or rate authority.

5. Grandfathering of Credit Values

Credit values should be “grandfathered” for the duration of the credits in the event evaluation processes or model versions change in the future. Therefore, perpetual credit values should remain the same as when approved and term credit values remain the same for the duration of the term.

Term credits that are proposed for renewal should be evaluated using the most current evaluation process.

6. Bundling of Credits

Credit providers, sometimes referred to as aggregators, should be able to “bundle” credits from a variety of practices or providers and offer packages of credits for less than perpetual terms, so long as the source of credits are clearly presented when the credits are proposed to be placed on the Virginia Nutrient Credit registry.

7. Virginia Nutrient Credit Registry

Virginia should establish a Virginia Nutrient Credit Registry as an online registry capable of tracking credits from “cradle to grave” that would be housed within a state agency or through a contracted third party with oversight by the state. Only credits certified by DCR or DEQ should be entered in the registry. Annual reports should be prepared that summarize the status and use of credits contained in the registry and should be made available to the public.

8. Nutrient Credit Exchange Association Trading Ledger

Point Source wastewater credit trades for watershed general permit compliance among members of the Nutrient Credit Exchange Association should continue the existing practice of accounting in the credit ledgers currently submitted by the association to DEQ.

9. Credit Registration Fee

A registration fee should be established by DCR that is reasonably related to the cost of application review and oversight for proposed and certified credits. This fee should be payable to DCR and should replace the current 6% fee on credit sales established by Code Section § 10.1-603.8:1 (E)

10. All Credits Subject to Auditing and Oversight

All trades, offsets, and registered credits used for compliance or mandatory offsets should be subject to reporting and ongoing auditing and oversight by the relevant state agency.

II. Credit Uses

This section summarizes the source sectors and the nature of their participation in the credit program.

1. WASTEWATER

Wastewater treatment facilities subject to the Chesapeake Bay Watershed General Permit should continue to use credits generated according to existing Virginia Code and General Permit Conditions for compliance and new or expanding facilities should continue to meet current Code

requirements. Wastewater credits should also be available for MS4 permit compliance in the future as described in the Stormwater section below.

2. STORMWATER

1. Stormwater Offsets from Construction: Authorization for stormwater offsets under Section § [10.1-603.8:1](#) of the Code should remain in place.
2. MS4 (Municipal Separate Storm sewer System) permittees should be able to acquire either perpetual or term credits for purposes of compliance. Among other means of acquiring credits, MS4 permittees should be able to acquire nutrient credits from facilities subject to the Watershed General Permit within the same jurisdiction or river basin as currently specified in § [10.1-603.8:1](#) (F).
3. MS4 permittees should be able to enter into agreement with other MS4 permittees within the same river basin to collectively meet the sum of any waste load allocations that may be established by their permits.
4. Facilities subject to industrial permits that contain facility specific waste load allocation of nitrogen and phosphorus should be able to acquire credits within the same river basin as currently specified in § [10.1-603.8:1](#) (F).

3. CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFO)

CAFOs with waste load allocations should be able acquire perpetual or term credits within the same river basin for purposes of permit compliance.

4. OTHER PURCHASERS

Credits should be able to be purchased by any unregulated entities and used, resold or retired at their discretion

5. LOCAL WATER QUALITY

The exchange or acquisition of nutrient credits should not eliminate any requirement to comply with local water quality requirements as expressed in Virginia Code sections 62.1-44.19:14 (B) and § 10.1 – 603.8:1.

III. **Baselines for Credit Generation**

The Baselines should be established by regulation by DCR within the following framework.

1. **Urban Practices**

New development and redevelopment should comply with DCR's VSMP Regulations (post-construction nutrient loading requirements) as baseline. For all other existing development, credit should be generated from practices that are implemented beyond those necessary to achieve a level

of reductions assigned in the urban sector in Virginia's Chesapeake Bay Watershed Implementation Plan (WIP) as practiced on the land area under consideration.

2. Agriculture Practices

Credit should be generated from practices that are implemented beyond those necessary to achieve a level of reductions assigned in the agriculture sector in Virginia's WIP) as practiced on the on the tract, field or other land area under consideration.

3. Land Use Management and Conversion

Efficiencies should be consistent with those contained in the Chesapeake Bay model unless more relevant or accurate technical information is available with the prior-conversion land use presumed to meet baseline requirements for that land use as specified in the WIP. If the pre-conversion land use is assigned load reductions in the Virginia WIP, then proposed conversions that may generate credits should be calculated as the difference between those necessary reductions and the newly proposed land use. Credits should not be generated if the post-conversion land use is more intensive than the pre-conversion use.

4. Other Practices

As determined by the relevant agency (DCR or DEQ) through the process recommended in Section 1 of this framework.

IV. ADDITIONAL FRAMEWORK FOR BANKING AND CREDIT GENERATION FACILITIES

1. Entities that May Submit Credit Generation Proposals

- New or existing public or private entities may propose credit generating activities. Public agencies, regional or local public service authorities, political subdivisions of the state, and public utilities may demonstrate financial assurance through alternatives such as availability of tax or rate authority.
- Governmental agencies and any public service authorities that serve them should be able to generate and register credits for their own use. Such agencies are subject to any established baselines and should be able to enter into agreements with private firms to provide for credit needs.
- Stream or wetlands banks with water quality improvements implemented on lands after the baseline date (July 1, 2005) may apply to convert approved wetland or stream mitigation credits into nutrient credits. Banks receiving such approval can market their mitigation credits for either their wetland or stream mitigation function or their nutrient reduction function but not both. A mitigation credit sold for its nutrient reduction function cannot also be sold for its wetland or stream mitigation function and vice versa

2. Credit Retirement

A small percentage of certified credits (5%) entered into the Virginia Nutrient Credit Registry should be automatically retired to facilitate water quality improvement and offset additional unregulated loads pursuant to Appendix S of the Chesapeake Bay TMDL.

APPENDIX 1

Roster of Committee Members

Shannon Varner	Troutman Sanders LLP
Mark Haley	Virginia Nutrient Credit Exchange Association
Chris Pomeroy	Virginia Association of Municipal Wastewater Agencies
Brent Fults	Chesapeake Bay Nutrient Land Trust, LLC
Wilmer Stoneman	Virginia Farm Bureau
Ed Overton	Virginia Association of Soil and Water Conservation Districts
Mike Gerel	Chesapeake Bay Foundation
Kurt Stephenson	Virginia Tech
Eldon James	Rappahannock River Basin Commission
Michael Collins	Conserv, Association of Conservation Real Estate
Ronald Green	Balzer and Assoc. (representing the Homebuilders Association of Virginia)
Fran Geissler	James City County
Joe Lerch	Virginia Municipal League
Mike Flagg	Hanover County (representing the Virginia Association of Counties)
Nikki Rovner	The Nature Conservancy/Aquatic Resources Trust Fund
Doug Beisch	Williamsburg Environmental Group
Aaron Revere	Falling Springs LLC
Mark Davis	Altria (Representing the Virginia Manufacturers Association)
Phil Abraham	Vectre Corporation
Tom Kochaba	HDR Engineering

State and Federal Agencies

Anthony Moore	Assistant Secretary of Natural Resources
Travis Hill	Deputy Secretary of Agriculture and Forestry
Russ Baxter	Department of Environmental Quality (lead staff)
Allan Brockenbrough	Department of Environmental Quality
Virginia Snead	Department Conservation and Recreation
Buck Kline	Department of Forestry
Alan Knapp	Department of Health
Darryl Marshall	Department of Agriculture and Consumer Services
Kevin Debell	United States Environmental Protection Agency

APPENDIX 2

2011 SESSION

ENROLLED

SENATE JOINT RESOLUTION NO. 334

Requesting the Secretary of Natural Resources to study the expansion of the Chesapeake Bay Watershed Nutrient Credit Exchange Program. Report.

Agreed to by the Senate, February 2, 2011
Agreed to by the House of Delegates, February 24, 2011

WHEREAS, the General Assembly established the Chesapeake Bay Watershed Nutrient Credit Exchange Program (§ 62.1-44.19:12 et seq.) in 2005 in order to (i) meet pollution reductions and cap load allocations cost-effectively; (ii) accommodate continued growth and economic development in the Chesapeake Bay watershed; and (iii) provide a foundation for establishing market-based incentives to help achieve the nonpoint source reduction goals; and

WHEREAS, an investment of over \$1.5 billion in implementing this program over the past five years has enabled the Commonwealth to achieve significant reductions in nutrient loads discharged to the Chesapeake Bay from Virginia's municipal and industrial wastewater treatment facilities; and

WHEREAS, the General Assembly expanded the program in 2009 to allow for nonpoint source nutrient offsets to be secured for new land development projects; and

WHEREAS, with the advent of the Chesapeake Bay Total Maximum Daily Load (TMDL) mandated under the federal Clean Water Act, Virginia's Watershed Implementation Plan recognizes that a further expansion of the Nutrient Credit Exchange Program could assist in the implementation of programs and practices necessary to meet the nutrient reductions required by the TMDL; and

WHEREAS, such a program that could allow trading and offsets of nutrients among stormwater, onsite septic, wastewater, agriculture and forestry activities would allow for improved decisions regarding the implementation of needed nutrient reduction practices in a timely and cost-effective manner; and

WHEREAS, this free market-based approach and the expansion of credit markets could bring additional resources from the private sector to nutrient reduction efforts and the Commonwealth has proposed such a program in its Watershed Implementation Plan; and

WHEREAS, a broad-based study with representatives from public and private source sectors and state and local government would allow for the development of a comprehensive program that would meet the needs of the Commonwealth and the relevant nutrient source sectors; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Secretary of Natural Resources be requested to study the expansion of the Chesapeake Bay Watershed Nutrient Credit Exchange Program.

In conducting the study, the Secretary of Natural Resources shall convene a stakeholder committee to study and develop recommendations relating to the creation of a comprehensive Chesapeake Bay Watershed Nutrient Exchange Program that operates effectively to include both point and nonpoint source pollutants. The stakeholder committee shall include representatives from the nutrient source sectors identified in the Chesapeake Bay TMDL, private sector interests with experience and expertise in market-based approaches and nutrient credits and trading, state agency personnel, local governments, conservation and environmental organizations, and any other persons deemed by the Secretary to have relevant knowledge, perspective, or experience. The Secretary may request the participation of the U.S. Environmental Protection Agency or other federal agencies with experience and expertise.

Technical assistance shall be provided to the Secretary of Natural Resources by the Department of Conservation and Recreation and the Department of Environmental Quality. All agencies of the Commonwealth shall provide assistance to the Secretary of Natural Resources for this study, upon request.

The Secretary of Natural Resources shall complete his meetings by November 30, 2011, and shall submit to the Governor and the General Assembly an executive summary and a report of his findings and recommendations for publication as a House or Senate document. The executive summary and report shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports no later than the first day of the 2012 Regular Session of the General Assembly and shall be posted on the General Assembly's website.

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