Virginia Regulatory Town Hall

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Proposed Regulation
Agency Background Document

Approving authority name	State Water Control Board
Virginia Administrative Code (VAC) citation(s)	9 VAC 25-40 (Primary Action) 9 VAC 25-720 (Secondary Action)
Regulation title(s)	Policy for Nutrient Enriched Waters - Primary Action Water Quality Management Planning Regulation - Secondary Action
Action title(s)	Primary Action: Amendments to Policy for Nutrient Enriched Waters – Technology-Based Total Nitrogen and Total Phosphorus Limitations for Certain Permits within Chesapeake Bay Watershed. Secondary Action: Amendments to Water Quality Management Planning Regulation - Total Nitrogen and Total Phosphorus Annual Waste Load Allocations for Certain Dischargers within Chesapeake Bay Watershed, and Trading and Offsets Provisions.
Document preparation date	September 2004

This information is required for executive review (www.townhall.state.va.us/dpbpages/apaintro.htm#execreview) and the Virginia Registrar of Regulations (legis.state.va.us/codecomm/register/regindex.htm), pursuant to the Virginia Administrative Process Act (www.townhall.state.va.us/dpbpages/dpb_apa.htm), Executive Orders 21 (2002) and 58 (1999) (www.governor.state.va.us/Press_Policy/Executive_Orders/EOHome.html), and the *Virginia Register Form, Style, and Procedure Manual* (http://legis.state.va.us/codecomm/register/download/styl8_95.rtf).

Brief Summary

Please provide a brief summary of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation. Do ***not*** *state each provision or amendment or restate the purpose and intent of the regulation.*

The subject matter of the rulemaking is two-fold:

1. Revise the existing Point Source Policy for Nutrient Enriched Waters, to establish technology-based, annual average total nitrogen and total phosphorus concentration requirements for certain dischargers located in Virginia's Chesapeake Bay watershed.

2. Revise the Water Quality Management Planning Regulation, to establish total nitrogen and total phosphorus annual waste load allocations for certain dischargers within Virginia's portion of the Chesapeake Bay Watershed, and authorize a trading and offsets program to assist in the achievement and maintenance of the waste load allocations.

Legal Basis

Please identify the state and/or federal source of legal authority to promulgate this proposed regulation, including (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly bill and chapter numbers, if applicable, and (2) promulgating entity, i.e., the agency, board, or person. Describe the legal authority and the extent to which the authority is mandatory or discretionary.

State mandate in the Code of Virginia in §62.1-44.15 is the source of legal authority identified to promulgate these amendments. The promulgating entity is the State Water Control Board.

The scope and purpose of the State Water Control Law is to protect and to restore the quality of state waters, to safeguard the clean waters from pollution, to prevent and to reduce pollution and to promote water conservation. The State Water Control Law (Code of Virginia) at §62.1-44.15(10) mandates the Board to adopt such regulations as it deems necessary to enforce the general water quality management program of the Board in all or part of the Commonwealth. In addition, §62.1-44.15(14) requires the Board to establish requirements for the treatment of sewage, industrial wastes and other wastes that are consistent with the purposes of this chapter. The specific effluent limits needed to meet the water quality goals are discretionary.

The correlation between the proposed regulatory action and the legal authority identified above is that the amendments being considered are modifications of the current requirements for the treatment of wastewater that will contribute to the attainment of the Virginia Water Quality Standards.

State Water Control Law (Code of Virginia) web site:
http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+62.1-44.15

Purpose

Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Detail the specific reasons the regulation is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.

The purpose of this rulemaking is to protect State waters by adopting regulations that are technically correct, necessary and reasonable. These regulatory actions, taken together, would establish permit limitations for two nutrients -- total nitrogen and total phosphorus -- for certain dischargers within Virginia's portion of the Chesapeake Bay watershed. Resulting permit limitations will be expressed as both technology-based annual average concentrations and annual waste load allocations. These actions are needed because nutrients discharged from wastewater treatment plants contribute to the overall loading of nutrients to the Chesapeake Bay and its tributaries. These nutrients have been identified as pollutants contributing to adverse impacts on large portions of the Bay and its tidal rivers, which are included in the list of impaired waters required under §303(d) of the Clean Water Act and §62.1-44.19:5 of the Code of Virginia. Waters not meeting standards will require development of a Total Maximum Daily Load (TMDL), also required under the same sections of federal and state law. In May 1999, EPA Region III included most of Virginia's portion of the Chesapeake Bay and portions of several tidal

tributaries on Virginia's 1998 impaired waters list. The *Chesapeake 2000 Agreement* commits Virginia to the goal of removing the Chesapeake Bay and its tidal tributaries from the list of impaired waters by 2010. Thus, the development of a TMDL for the entire Chesapeake Bay is not being scheduled until 2010, anticipating that the Chesapeake Bay Program partners can cooperatively achieve water quality standards by that time making a Bay wide TMDL unnecessary. These regulatory actions will help to meet the goals of the *Chesapeake 2000 Agreement*.

Under a separate rulemaking, amendments to the Virginia Water Quality Standards Regulation [9 VAC 25-260] are being considered that will update numerical and narrative criteria to protect designated uses of the Chesapeake Bay and its tidal rivers from the impacts of excessive nutrient and sediment loads. That rulemaking will also include new and revised use designations for the Chesapeake Bay and its tidal tributaries. Adoption of Bay-specific criteria and uses is necessary to define the most accurate water quality goals for reducing the inputs of nitrogen, phosphorus and sediment and for subsequent TMDL development.

This rulemaking is needed to establish required effluent limitations for the discharge of total nitrogen and total phosphorus within the Virginia portion of the Chesapeake Bay watershed. Nitrogen and phosphorus discharges throughout the Bay watershed have been shown to impact the water quality in the Bay and its tidal rivers. Effluent levels for total nitrogen or total phosphorus more restrictive than the minimum technology limitations included in the revised Policy will be needed for some dischargers to meet the waste load allocation requirements of the amended Water Quality Management Planning Regulation, as well as the revised Virginia Water Quality Standards or any applicable TMDL.

Substance

Please briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. (Provide more detail about these changes in the "Detail of changes" section.)

The proposed regulatory actions will constitute amendments of existing regulatory provisions. Regarding the Chesapeake Bay watershed, the current Policy for Nutrient Enriched Waters contains specific limitations only on phosphorus concentrations in the effluent of major facilities discharging to tidal waters. However, water quality in the Chesapeake Bay and its tidal rivers is also significantly impacted by nitrogen inputs from point sources (wastewater treatment plants) located in both the tidal and non-tidal areas of the Bay watershed, as well as non-point sources (runoff from agricultural, forested and urban lands). The proposed changes to this Policy would:

- Rename 9 VAC 25-40 as, "Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed";
- State that it is the SWCB's policy that point source dischargers within the Chesapeake Bay watershed utilize, at a minimum, Biological Nutrient Removal treatment or its equivalent whenever feasible;
- Specify technology-based, annual average limits for nitrogen and phosphorus;
- Authorize limits in VPDES permits of both existing and new or expanded dischargers;
- Apply to certain dischargers throughout Virginia's entire Chesapeake Bay watershed;
- Allow for alternative limits if a discharger can demonstrate that specified levels cannot be achieved;
- Include reference to the Water Quality Management Planning Regulation to make clear that nutrient control requirements are a combination of effluent concentrations and waste load allocations; and,
- Retain the Nutrient Enriched Waters designations and phosphorus control requirements outside the Chesapeake Bay watershed.

The proposed amendments to the Water Quality Planning Regulation would:

- Add several terms to the list of definitions - *"Chesapeake Bay Watershed"*, *"Delivered Waste Load"*, *"Significant Discharger"*, and *"Trading"*;
- Add a Paragraph 'C' to each of the Chesapeake Bay's tributary river sections, to establish annual total nitrogen and total phosphorus waste load allocations for the listed 120 significant dischargers; and,
- Establish a Trading and Offsets Program to enhance the cost-effectiveness of achieving and maintaining the waste load allocations in each tributary basin, and allow for new and expanded treatment plants in the future. These provisions also allow new and expanded dischargers to operate within Virginia's Chesapeake Bay watershed while also protecting water quality.

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 there are no disadvantages to the public or the Commonwealth, please indicate.

The public will benefit, as these amendments will result in the discharge of reduced amounts of nitrogen and phosphorus from wastewater treatment plants in the Chesapeake Bay watershed. This, in turn, will aid in the restoration of water quality in the Chesapeake Bay and its tributary rivers, and assist in meeting the water quality standards necessary for protection of the living resources that inhabit the Bay.

One disadvantage that may be perceived by the public is that these actions only address a portion of the nutrient loads to the Bay and its tributaries, that being the point source discharges. Unless a comparable level of effort is applied to reduce the nonpoint source inputs (runoff from agricultural, urban/suburban, and forested lands, septic systems, and air deposition), which are largely unregulated, the Commonwealth will be unable to achieve the load reductions necessary to meet the revised water quality standards. The needed nonpoint source controls are detailed in Virginia's Tributary Strategies for Nutrient and Sediment Reduction. Wastewater treatment plant owners may see these proposals as too stringent, with the discharge limitations being difficult and expensive to meet. Long-term planning and capacity needs to serve future growth are also significant concerns that the facility owners have expressed, with the uncertainty of living under a "cap" on nutrient discharges. Other public groups, particularly citizen conservation organizations, may view the technology-based concentration limitations as too lax, since they don't represent the best treatment possible using current limits of available technology.

One advantage to the Commonwealth is that adoption of these amendments will fulfill a directive from Governor Warner to DEQ, given at the December 2003 Chesapeake Bay Program Executive Council meeting, calling for regulations authorizing numerical, technology-based nutrient limitations in permits for Bay dischargers. The proposals are also consistent with a draft permitting policy for Chesapeake Bay dischargers recently issued by the U.S. EPA for public comment. These proposals will also provide the regulatory basis for including nutrient effluent limits within the VPDES permits of the affected dischargers. There is no disadvantage to the agency or the Commonwealth that will result from the adoption of these amendments.

The State Water Control Board encourages comment on pertinent matters of interest to the regulated community, government officials, and the public, especially on (but not limited to) these issues:

- the potential costs to meet the requirements of these regulatory amendments.
- the proposed compliance deadline for significant dischargers , which is within four years following reissuance or major modification of the VPDES permit, but in no case later than December 31, 2010.

- the proposed technology-based effluent concentration limits under 9-VAC-25-40, the waste load allocations under 9-VAC-25-720, and the capability of affected dischargers to achieve these requirements.
- the provisions of 9-VAC-25-720 that allocate waste loads only for significant dischargers. Smaller, non-significant dischargers over 40,000 gallons per day, which are required to meet a concentration-based performance requirement under 9-VAC-25-40, would not receive any waste load allocation and would be required to trade or offset their entire nutrient load if an expansion were proposed.

Requirements More Restrictive Than Federal

Please identify and describe any requirement of the proposal which are more restrictive than applicable federal requirements. Include a rationale for the need 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.

The proposed amendments for nutrient concentration limits are more stringent than current Federal recommendations, guidance or regulation. These limits are being established for the specified existing and new dischargers to ensure all sources of nutrients contribute in some measure toward the needed reductions. As mentioned above, the U.S. EPA is developing a permitting policy for nutrient discharges to the Chesapeake Bay watershed, and will expect the Bay Program states to conform to that policy. In addition, Federal regulation requires States to issue discharge permits that ensure compliance with water quality standards. The annual waste load allocations were assigned to assist in achieving the water quality standards. Once the revised Bay and tidal water quality standards are adopted and become effective, the U.S. EPA will require that enforceable limitations on total nitrogen and total phosphorus discharges be placed in VPDES permits. The proposed amendments were drafted in anticipation of these Federal requirements and are expected to be acceptable to the U.S. EPA.

Locality 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.

As these regulatory revisions only apply to certain dischargers within the Bay drainage, localities outside the Shenandoah-Potomac, Rappahannock, York, James, and small coastal and Eastern Shore Bay watersheds are unaffected by the proposal. More specifically, localities (and industrial plants) identified as "significant dischargers", and listed in the waste load allocation tables of the Water Quality Management Planning Regulation, are directly affected by these proposed amendments (see tables in Paragraph 'C' of each basin section of 9 VAC 25-720).

Localities affected by the proposed amendments lie partially, or wholly within the Chesapeake Bay watershed, as follows:

EASTERN SHORE
Counties: Accomack, Northampton
Cities/Towns: Accomac, Belle Haven, Bloxom, Cape Charles, Cheriton, Eastville, Exmore, Hallwood, Melfa, Nassawaddox, Onancock, Onley, Painter, Parksley, Saxis, Tangier.

JAMES RIVER BASIN

Counties: Albemarle, Alleghany, Amelia, Amherst, Appomattox, Augusta, Bath, Bedford, Buckingham, Botetourt, Campbell, Charles City, Chesterfield, Craig, Cumberland, Dinwiddie, Fluvanna, Giles, Goochland, Greene, Hanover, Henrico, Highland, Isle of Wight, James City, Louisa, Montgomery, Nelson, New Kent, Nottoway, Powhatan, Prince Edward, Prince George, Roanoke, Rockbridge, Surry
Cities/Towns: Amherst, Appomattox, Buchanan, Buena Vista, Burkeville, Charlottesville, Chesapeake, Claremont, Clifton Forge, Colonial Heights, Colombia, Covington, Craigsville, Crewe, Dillwyn, Farmville, Fincastle, Glasgow, Goshen, Hampton, Hopewell, Iron Gate, Lexington, Lynchburg, New Castle, Newport News, Norfolk, Petersburg, Portsmouth, Richmond, Scottsville, Smithfield, Stanardsville, Suffolk, Surry, Virginia Beach, Williamsburg, Windsor

YORK RIVER BASIN
Counties: Albemarle, Caroline, Essex, Fluvanna, Gloucester, Goochland, Hanover, James City, King and Queen, King William, Louisa, Mathews, Middlesex, New Kent, Orange, Spotsylvania, York
Cities/Towns: Ashland, Bowling Green, Gordonsville, Mineral, Orange, West Point, Williamsburg

RAPPAHANNOCK RIVER BASIN
Counties: Albemarle, Caroline, Culpeper, Essex, Fauquier, Greene, King George, Lancaster, Madison, Middlesex, Northumberland, Orange, Rappahannock, Richmond, Spotsylvania, Stafford, Westmoreland
Cities/Towns: Culpeper, Fredricksburg, Irvington, Kilmarnock, Madison, Montross, Orange, Port Royal, Remington, Tappahannock, Urbanna, Warrenton, Warsaw, Washington, White Stone

POTOMAC RIVER BASIN
Counties: Arlington, Fauquier, Fairfax, King George, Loudoun, Northumberland, Prince William , Stafford, Westmoreland,
Cities/Towns: Alexandria, Arlington, Clifton, Colonial Beach, Dumfries, Fairfax (City of), Falls Church, Hamilton, Haymarket, Herndon, Hillsboro, Leesburg, Lovettsville, Manassas, Manassas Park, Middleburg, Occoquan, Purcellville, Quantico, Round Hill, The Plains, Vienna, Warrenton

SHENANDOAH RIVER SUB-BASIN
Counties: Augusta, Clarke, Frederick, Highland, Page, Rockingham, Shenandoah, Warren
Cities/Towns: Berryville, Boyce, Bridgewater, Broadway, Dayton, Edinburg, Elkton, Front Royal, Grottoes, Harrisonburg, Luray, Middletown, Monterey, Mount Crawford, Mount Jackson, New Market, Shenandoah, Stanley, Staunton, Stephens City, Strasburg, Timberville, Tom's Brook, Waynesboro, Winchester, Woodstock

SMALL COASTAL RIVERS
Counties: Essex, Gloucester, King and Queen, Lancaster, Mathews, Middlesex, Northumberland, York
Cities/Towns: Hampton, Kilmarnock, Newport News, Norfolk, Poquoson, White Stone

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 regulation on farm or forest land preservation.

In addition to any other comments, the State Water Control Board is particularly seeking comments on:

- the potential costs and benefits of the proposal.
- the proposed compliance deadline for significant dischargers , which is within four years following reissuance or major modification of the VPDES permit, but in no case later than December 31, 2010.

- the proposed technology-based effluent concentration limits under 9-VAC-25-40, the waste load allocations under 9-VAC-25-720, and the capability of affected dischargers to achieve these requirements.
- the provisions of 9-VAC-25-720 that allocate waste loads only for significant dischargers. Smaller, non-significant dischargers over 40,000 gallons per day, which are required to meet a concentration-based performance requirement under 9-VAC-25-40, would not receive any waste load allocation and would be required to trade or offset their entire nutrient load if an expansion were proposed.
- any impacts of the regulation on farm and forest land preservation.

Anyone wishing to submit written comments for the public comment file may do so at the public meeting, by mail to the Department of Environmental Quality (c/o John Kennedy), P.O. Box 10009, Richmond, VA 23240-0009, or by email to jmkennedy@deq.virginia.gov or by fax at (804) 698-4116. Written comments must include the name and address of the commenter. In order to be considered comments must be received by 5:00 p.m. on the date established as the close of the comment period.

A public hearing will be held and notice of the public hearing can be found in the Calendar of Events section of the Virginia Register of Regulations. Both oral and written comments may be submitted at that time.

The Board will hold a formal hearing at a time and place to be established, if a petition for such a hearing is received and granted. Affected persons may petition for a formal hearing concerning any issue of fact directly relevant to the legal validity of the proposed action. Petitions must meet the requirements of § 1.23(b) of the Board's Procedural Rule No. 1 (1980), and must be received by the contact person within 30 days of date of publication in the Virginia Register.

Financial impact

Please identify the anticipated financial impact of the proposed regulation and at a minimum provide the following information: Projected cost to the state to implement and enforce the proposed regulation, including fund source / fund detail, and (b) a delineation of one-time versus on-going expenditures; projected cost of the regulation on localities; description of the individuals, businesses or other entities likely to be affected by the regulation including specific information on the impact on small businesses as defined in § 2.2-2279; agency's best estimate of the number of such entities that will be affected; projected cost of the regulation for affected individuals, businesses, or other entities.

Projected cost to the state to implement and enforce the proposed regulations, including fund source/fund detail, and (b) a delineation of one-time versus on-going expenditures: There is no additional cost to the State to implement and enforce the proposed regulations.

Financial assistance, in the form of low-interest loans from Virginia's State Revolving Fund (SRF) and/or cost-share grants from the Water Quality Improvement Fund (WQIF), will be provided as available to localities for upgrading their treatment facilities to meet the nutrient removal requirements. There is no cost to the State for use of the SRF, as all loans are repaid with interest into the Fund. However, the State must supply a 20% match for any Federal funds provided to capitalize the SRF. The potential State expense for use of the WQIF would be a minimum of 50% of the total eligible capital cost for the retrofit projects at municipal wastewater facilities. A preliminary estimate from the Tributary Strategies for the State's WQIF cost-share is $507 million, using planning level cost opinions (accurate -30% to +50%).

Projected cost of the regulation on localities: If sufficient WQIF cost-share is available to cover retrofitting all the significant dischargers that are municipal treatment plants, then localities will be

responsible for at least 50% of the total eligible capital cost for their nutrient reduction upgrades. Based on estimates from the Tributary Strategies, the total local share would be about $507 million under this scenario. If grant funds are not available, or plant upgrades are financed through the SRF or other loan source, then the localities would be responsible for the entire capital cost of the retrofits. The estimated total capital costs, by Bay tributary basin, for retrofitting significant dischargers that are municipal point sources to meet the nutrient removal requirements of the proposed regulations are:

Basin	Significant Municipal Plants	Total Capital Cost* (millions)
Shenandoah-Potomac	36	$447
Rappahannock	20	$77
York	9	$27
James	27	$454
Eastern Shore	3	$10
Totals	**95**	**$1,015**

***NOTE:** These figures are planning level cost opinions (accurate from -30% to +50%). More accurate cost estimates can only be derived through specific facility planning, design and ultimately construction bids for the treatment facility upgrades.

The proposed revisions to 9VAC-25-40 would also require smaller municipal plants that are not defined as significant dischargers to utilize Biological Nutrient Removal (BNR) treatment or its equivalent whenever feasible. Using a costing method developed for the Chesapeake Bay Program's "Nutrient Reduction Technology Report" (Nov. 2002), an estimate has been made for the total capital cost to add BNR at these smaller municipal plants:

Basin	Smaller Municipal Plants not defined as Significant Dischargers	Total Capital Cost* (millions)
Shenandoah-Potomac	51	$31
Rappahannock	12	$7
York	14	$9
James	40	$25
Eastern Shore	0	0
Totals	**117**	**$72**

***NOTE:** This estimate represents a preliminary, order-of-magnitude approximation, due to the limited data available on the cost to add BNR treatment to facilities under 0.1 MGD in design size. In addition, these figures will need to be refined in the future, given the fact that the nutrient permit requirements for these dischargers would not be imposed until after December 2010.

Description of the individuals, businesses or other entities likely to be affected by the regulation including specific information on the impact on small businesses as defined in § 2.2-2279:
The entities affected by the proposed amendments are significant dischargers of nutrients in the Chesapeake Bay watershed. These facilities are listed in the proposed Paragraph 'C' of each basin section of 9 VAC 25-720, and any new or expanded plant authorized by a VPDES permit issued after July 1, 2004 to discharge 2,300 pounds per year or more of nitrogen, and/or 300 pounds per year or more of phosphorus (equivalent to the waste load from a 40,000 gallon per day municipal treatment plant, or greater). In addition to municipal treatment plants, the proposal will affect certain industrial plants involved in food processing (poultry and seafood), chemical production, and pulp and paper manufacturing.

Small businesses that may be impacted include industrial dischargers to the Bay watershed with an annual nutrient load equivalent to a 40,000 gallon per day (gpd) municipal treatment plant, or greater. Prior to the drafting of these proposed amendments, "significant" nutrient dischargers were considered to be the larger wastewater treatment plants in the Bay watershed, with an annual load generally equal to or greater than a 500,000 gallon per day municipal plant. With the lower nutrient waste load threshold proposed for the definition of "significant discharger" in the amendments, it would be necessary to review the effluent characteristics of many additional small industrial plants to determine if they are affected by the regulations. As an example, there are currently 87 seafood processors in Virginia with VPDES Permits. All but 2 of these are covered under the General VPDES Permit for Seafood Processing Facilities (9VAC25-115-50) and most are small businesses. These facilities may not qualify for a general permit after these amendments are effective because the general permit does not include nutrient related limits. Exactly if or how these small businesses will be impacted is unknown at this time. There is one small business that is currently on the list of significant discharges that will be subjected to nutrient related limits (J.H. Miles and Co., Inc, Norfolk, VA).

Agency's best estimate of the number of such entities that will be affected: The current list of significant dischargers affected by the proposed amendments totals 120 (95 municipal wastewater plants and 25 industrial, Federal or State owned facilities). These dischargers would be subject to both the technology-based, numeric nutrient discharge limits and the annual waste load allocations.

There are currently 117 smaller permitted municipal dischargers (design capacity from 40,000 gpd to less than 500,000 gpd), which would be governed by just the technology-based effluent limits, requiring the minimum treatment level of Biological Nutrient Reduction or its equivalent. As mentioned above, the number of smaller industrial plants that may be affected by these proposed amendments must be evaluated, but it appears that 174 would be the maximum (based on a review of just facility design capacities, since nutrient data is not available for these plants).

Projected cost of the regulation for affected individuals, businesses, or other entities: Capital cost estimates, by Bay tributary basin, for other significant dischargers (industries, Federally- and State-owned facilities) are as follows:

Basin	Significant Dischargers other than Municipal Plants	Total Capital Cost* (millions)
Shenandoah-Potomac	7	$29
Rappahannock	2	$16
York	2	$4
James	12	$32
Eastern Shore	2	$4
Totals	**25**	**$85**

***NOTE:** These figures are planning level cost opinions (accurate from -30% to +50%). More accurate cost estimates can only be derived through specific facility planning, design and ultimately construction bids for the treatment facility upgrades. It is possible these figures underestimate the cost to industrial plants, due to their unique wastewater characteristics that may require treatment technology much different from that assumed for use at municipal plants. These figures also do not include the cost to retrofit the smaller non-municipal plants (design capacity between 40,000 gpd and 500,000 gpd), but this cannot be estimated until the evaluation is completed to identify the affected facilities. As mentioned above for the smaller municipal plants, this can be done in the future given the fact that the nutrient permit requirements for these dischargers would not be imposed until after December 2010.

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.

The following were alternatives and issues considered by DEQ staff and discussed with the technical advisory committee that was formed as part of the participatory process:

- Permit averaging period for compliance
- Concentration limits and annual loads
- Size of facilities affected by rulemaking
- Geographic scope of rulemaking
- Point source limits for both nitrogen and phosphorus (options ranging from "minimum technology" to "limit-of-technology" treatment)
- Alternatives to technological limits
- Options for expressing enforceable waste load allocations
- Implementation schedules
- Roles of the Virginia Revolving Loan Fund and Water Quality Improvement Fund
- Watershed Permitting / Trading / Future Service for Growth

The proposed revisions represent the essential content of the regulations necessary to meet the waste load allocations for point source dischargers in the Chesapeake Bay watershed. When coupled with the nonpoint source control measures identified in the Tributary Strategies, the nutrient inputs will be at levels that achieve the proposed water quality standards for the Bay and its tidal tributaries.

Development of the proposed amendments was also aided by a statement released on 8/27/04 by the Secretary of Natural Resources entitled, "Revisions to Virginia's Tributary Strategies: Point Sources" (see this website address: http://www.snr.state.va.us/Initiatives/TributaryStrategies/StratRevisions.cfm). In this statement, the Secretary identified the following guiding principals for establishing point source allocations, as a component of Tributary Strategies:

- Achieve the nutrient reductions necessary to restore the Chesapeake Bay and its tidal tributaries in the timeframe proposed in the *Chesapeake 2000 Agreement*;
- Provide for the full use of existing design capacity at each of the significant municipal and industrial wastewater treatment plants; and
- Apply currently available nutrient reduction technologies at these treatment plants.

The proposed regulatory revisions will enable Virginia to manage point source nutrient loadings in the Chesapeake Bay over the long term. By establishing waste load allocations based on design flow and stringent nutrient reduction treatment, plants will be able to fully use their capacity and will have greater flexibility in meeting loading goals. This approach will also allow some facilities to engage in nutrient trading or use other cost effective methods to achieve and maintain the cap loads for their facilities and for each river basin. This approach is consistent with the proposal recently announced by the U.S. EPA to implement tributary strategy allocations through discharge permits and to cap those loads over time.

The Secretary's statement also identified the basin allocations assigned to the York and James Rivers as “interim” until the water quality standards for the Bay and its tidal tributaries have been adopted. Therefore, the point source waste load allocations in those basins will remain essentially the same as proposed in the draft Tributary Strategies published earlier this year. After the standards are adopted and the river basin allocations are established, the final waste load allocations will be assigned to the significant dischargers in those basins.

It must be noted that after the SWCB approved the staff recommendation to take the proposed regulations to public hearing and comment, it was discovered that the design capacity used to calculate the waste load allocations for the Lower Jackson STP (James Basin, VA00909671) was incorrect in the Water Quality Management Planning Regulation (9VAC25-720.C). The VPDES Permit has a figure of 2.0 MGD for this planned facility (instead of 1.5 MGD, used to calculate the waste load allocations), but the owner has not yet made a final decision regarding the size of the plant to be built. The waste load allocation figure will be corrected once the final design flow is established, and the public will be informed of this issue during the public comment period.

Public comment

Please summarize all public comment received during 30-day period following the publication of the NOIRA, and provide the agency response.

Comments were received from the Alexandria Sanitation Authority, Chesapeake Bay Foundation, Chesterfield County Utilities Department, Department of Defense: Navy Region, Mid-Atlantic, DuPont-Spruance Plant, U.S. EPA-Region 3, Henrico County Public Utilities, Honeywell-Hopewell Plant, Hopewell Regional Wastewater Treatment Facility, Hampton Roads Sanitation District, Lynchburg Utilities, MeadWestvaco, Omega Protein, Philip Morris U.S.A., Smurfit-Stone: Hopewell Mill, Smurfit-Stone: West Point Mill, Spotsylvania County Utilities, Stafford County Utilities, Virginia Association of Municipal Wastewater Agencies, and Virginia Manufacturers Association.

Comments centered on the following major issue areas:

- Numerical Limits: Widely ranging views were provided, from the contention that the limits were unnecessary (given the fact that revised water quality standards are being adopted for tidal waters), to a call for applying the most stringent treatment levels achievable at all significant Bay watershed dischargers.
  Response: The limitations are necessary to ensure all sources of nutrients contribute in some measure toward the needed reductions, and have been proposed at a minimum of Biological Nutrient Reduction or its equivalent for all affected dischargers. More stringent treatment is required for all new or expanded significant dischargers.

- Alternate Limits: Unique wastewater characteristics or plant constraints must be considered when developing technology-based effluent limits. Alternative requirements should only apply if compliance with regulation is impossible, and any exemption should be to meet the next less stringent treatment level.
  Response: A provision has been included in 9 VAC 25-40 allowing for alternative limits on a case-by-case basis, if the discharger can demonstrate that specified treatment levels cannot be achieved.

- Load Caps, Accommodating Growth, and Economic Development: Several commenters stated that effluent limits should be based on achieving water quality standards, and adopting unnecessary numerical limits could result in overly-stringent load caps. This could affect the localities' ability to accommodate growth and economic development; and also result in use of septic systems contrary to tributary strategy goals. However, if technology-based limits are adopted, then federal and state cost-share should be provided.
  Response: Provisions have been included in 9 VAC 25-720, establishing a watershed trading and offsets program, to allow for new and expanded treatment plants in the future. The Commonwealth intends to provide cost-share, subject to availability.

- Trading and Offsets: Several commenters supported a trading/offset process, noting that the aspects of allowing use of a general permit for groupings of dischargers and trading among facilities are critical to the Bay restoration effort, and particularly important to high growth areas. The possibility of using nonpoint source controls to create load offsets for increased point source discharges should also be explored. However, other commenters felt that a multi-stakeholder effort (lead by EPA) should define acceptable watershed permitting and trading options, and this issue would be best addressed through permitting regulations or other SWCB-adopted mechanisms.
  Response: Provisions have been included in 9 VAC 25-720, establishing a watershed trading and offsets program, to enhance the cost-effectiveness of achieving and maintaining waste load allocations in each basin, and allow for new and expanded treatment plants in the future. The general framework allows trades among dischargers in the same basin, and has the option of using nonpoint source best management practices to offset new loads.

- Implementation Schedules: Broadly ranging opinions were given on this topic, from being unnecessary (since schedule is defined in 2000 Bay Agreement as 2004-2010), to a compliance period extended out to 2015 (beyond the life of an individual VPDES permit).
  Response: In accordance with Virginia's Permitting Regulation, a compliance schedule cannot extend beyond the life of the discharge permit (which is usually 5 years). In addition, the proposed regulation is somewhat 'self-implementing', with significant dischargers required to meet the nutrient limitations no later than December 31, 2010, which is consistent with the commitment made by the Chesapeake Bay Program.

- Industrial Dischargers: Much of the discussion to-date has focused on costs and available technologies for municipal facilities, and more attention should be given to limitations of industrial discharges. Biological process technologies may not be appropriate, economically viable or effective at industrial plants. Considerations for growth and future needs apply to industrials also.
  Response: In accordance with the Secretary of Natural Resources' 8/27/04 statement ("Revisions to Virginia's Tributary Strategies: Point Sources"), because industrial facilities treat wastewater with different characteristics from municipal wastewater, individual determinations have been made about levels of performance and the resulting allocations for those facilities.

Impact on family

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.

The direct impact resulting from the development of technology-based limitations for the discharge of total nitrogen and total phosphorus from wastewater treatment plants is for the protection of public health and safety. The adoption of these nutrient limitations will increase the cost of wastewater treatment at publicly owned treatment works, thereby increasing the user charges paid by residential and commercial customers, potentially decreasing the disposable family income.

Detail of changes

Please detail all changes that are being proposed and the consequences of the proposed changes. Detail all new provisions and/or all changes to existing sections.

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

Current section number	Proposed new section number, if applicable	Current requirement	Proposed change and rationale
9VAC25-40		Title	Changed from Policy to "Regulation for Nutrient Enriched Waters and Dischargers Within the Chesapeake Bay Watershed".
9VAC25-40-10		Purpose	Identifies river basins that comprise the Chesapeake Bay Watershed. Adds reference to 9VAC25-720, to make clear that point source nutrient limits combine technology-based concentrations and waste load allocations.
9VAC25-40-20		Authority	Repealed
9VAC25-40-30		Strategy for Nutrient Enriched Waters	Modified so this section now applies only to river basins outside the Chesapeake Bay watershed. Retains existing designations for nutrient enriched waters and discharger requirements outside the Bay drainage.
9VAC25-40-40		Permit Amendments	Revised so numeric values show two significant figures, and correct acronym for discharge permits (VPDES, not NPDES).
9VAC25-40-50		Possibility of Further Limitations	Changed from Policy to Regulation.
	9VAC25-40-70	Strategy for Chesapeake Bay Watershed	States as Board policy: dischargers within Chesapeake Bay watershed will utilize Biological Nutrient Removal treatment or its equivalent whenever feasible. Sets requirements for Significant Dischargers: • Annual average effluent limits of 8.0 mg/l for total nitrogen; 1.0 mg/l for total phosphorus. • Must also meet waste load allocations in WQMP Regulation (9VAC25-720). • Achieve applicable limits within 4 years of next permit reissuance or major modification, but in no case later than December 31, 2010. Sets requirements for all other plants not defined as Significant Dischargers: • Applies to plants with design flow of 40,000 gallons per day or more.

			• Annual average effluent limits of 8.0 mg/l for total nitrogen; 1.0 mg/l for total phosphorus. • Achieve applicable limits within 4 years following next permit reissuance or major modification occurring after Dec. 31, 2010. Sets requirements for all new or expanded dischargers authorized to discharge after the effective date of this regulation with design flow of 40,000 gallons per day or more: • Annual average effluent limits of 3.0 mg/l for total nitrogen; 0.3 mg/l for total phosphorus. Provisions for Alternative Effluent Limitations: • Done on a case-by-case basis. • Discharger can demonstrate via treatability, engineering, or other studies that the applicable effluent limits above cannot be achieved. • Board will require alternative effluent limitations deemed appropriate. • Discharger must still meet applicable waste load allocation in WQMP Regulation (9VAC25-720). Other Regulatory Requirements: • Any other nutrient limits required by State or Federal law/regulation, more stringent than the limitations above, are not affected by this regulation.
9VAC25-720-10		Definitions	Adds terms to list of definitions: • Chesapeake Bay Watershed - includes Potomac River Basin (9VAC25-260-390 and 9VAC25-260-400); James River Basin (9VAC 25-260-410, 9VAC25-260-415, 9VAC25-260-420, and 9VAC25-260-430); Rappahannock River Basin (9VAC25-260-440), Chesapeake Bay and small coastal basins (9VAC25-260-520, Sections 2 through 3g); and, York River Basin (9VAC25-260-530). • Delivered Waste Load - the discharged load from a point source in a river basin that is adjusted by a delivery factor for any alteration of that load occurring from biological, chemical, and physical processes during riverine transport to tidal waters. Delivery factors are calculated using the Chesapeake Bay Program watershed model. • Significant Discharger - a point source discharger within the Chesapeake Bay watershed that is listed in any of the following Sections: 9VAC25-720-50.C, 9VAC25-720-60.C, 9VAC25-720-70.C, 9VAC25-720-110.C, or 9VAC25-720-120.C; or a new or

			expanded point source discharger authorized by a VPDES permit issued after July 1, 2004 to discharge 2,300 pounds per year or more of total nitrogen or 300 pounds per year or more of total phosphorus. • Trading - the transfer of assigned waste load allocations for total nitrogen or total phosphorus among point source dischargers. It does not include the transfer of total nitrogen for total phosphorus, or the reverse.
9VAC25-720-30		Reserved	Changed to: "Relationship to the Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed, 9 VAC 25-40". Refers to 9VAC25-40, to make clear that point source nutrient limits combine technology-based concentrations and waste load allocations.
9VAC25-720-40		Reserved	Changed to: Trading and Offsets in the Chesapeake Bay Watershed: • Allows trading among significant dischargers only within the same river basin. • Trades between nutrients not allowed. • No allowance for degradation or adverse impacts to local water quality, or standards violations. • Total delivered waste load allocation for that basin cannot be exceeded. • Board may authorize trades only through VPDES permits. Nutrient loads from new or expanded significant dischargers that exceed allocation must be accompanied by: • A trade for an equal or greater load reduction from one or more existing dischargers. • Installation, monitoring, and maintenance of BMPs that reduce nonpoint source delivered loads by twice the amount of point source load increase being offset. • A combination of both actions. Additional requirements if a new or expanded discharger uses nonpoint source BMPs for offsets: • Annual average VPDES permit limits are 3.0 mg/l for total nitrogen and/or 0.3 mg/l for total phosphorus (or alternative limits, as required) • BMPs are installed within locality served by new or expanded discharger, unless Board determines another location has greater water quality benefits. • Credit may be given for improvements to BMPs already required under other federal or state law, to the extent that additional load reduction is provided. • Credit may not be given for portions of BMPs

			financed by government programs. • BMP installation, monitoring & maintenance required by discharger's VPDES permit, and BMPs installed after permit issuance. Trades and offsets must account for delivery factors, and recognize that new significant dischargers have no assigned waste load allocations. Table added to identify CBP Watershed Model Segments that comprise Chesapeake Bay Watershed, along with delivery factors for total nitrogen and total phosphorus.
9VAC25-720-50, -60, -70, -110, and -120		Chesapeake Bay Watershed Basin Sections (Potomac-Shenandoah, James, Rappahannock, Chesapeake Bay-Small Coastal-E. Shore, York)	Existing regulatory text of paragraphs A. (Total maximum daily load [TMDLs]), and B. (Stream segment classifications, effluent limitations including water quality based effluent limitations, and waste load allocations) in each of the river basin sections remain unchanged. A new paragraph C. (Nitrogen and Phosphorus Waste Load Allocations to Restore the Chesapeake Bay and its Tidal Rivers) is added to each river basin section. A table is provided, presenting total nitrogen and phosphorus waste load allocations for the listed significant dischargers, the associated delivery factors used for trading or offset purposes, and the total nitrogen and total phosphorus delivered waste load allocation for the basin.