



Virginia
Regulatory
Town Hall

Proposed Regulation
Agency Background Document

Agency Name:	Department of Environmental Quality
VAC Chapter Number:	9 VAC 25-260-5 et seq.
Regulation Title:	Water Quality Standards
Action Title:	Amendments to the Water Quality Standards to update ammonia and bacteria criteria and recreational uses.
Date:	7/06/01

This information is required pursuant to the Administrative Process Act (§ 9-6.14:9.1 *et seq.* of the *Code of Virginia*), Executive Order Twenty-Five (98), Executive Order Fifty-Eight (99), and the *Virginia Register Form, Style and Procedure Manual*. Please refer to these sources for more information and other materials required to be submitted in the regulatory review package.

Summary*

Please provide a brief summary of the proposed new regulation, proposed amendments to an existing regulation, or the regulation proposed to be repealed. There is no need to state each provision or amendment or restate the purpose and intent of the regulation; instead give a summary of the regulatory action and alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation.

Water Quality Standards consist of designated uses of the water body and narrative and numeric criteria that protect those uses by describing water quality in general terms and specifically as numerical limits for physical, chemical and biological characteristics of water.

The State Water Control Board is proposing amendments to the State's Water Quality Standards Regulation at 9 VAC 25-260-5, 140, 155, 160, 170, 310 and 390. The amendments will update the statewide ammonia and bacteria criteria to match updates published by the Environmental Protection Agency (EPA). The bacteria criteria proposed are designed to protect all state waters for primary contact recreation (swimming). The amendments also incorporate a site specific chronic ammonia criterion for the northern Virginia tidal embayments. All of these

amendments will be used in calculating Virginia Pollutant Discharge Elimination System permit limits where appropriate and for water quality assessments per the Clean Water Act 305(b) and 303(d) reports.

The proposal does not include amendments related to intermittent streams or shellfish use designations as stated in the Notice of Intended Regulatory Action. Alternatives were revealed after the comment period to meet the needs for the shellfish use designations via discussions with EPA and existing procedures were deemed appropriate for meeting the needs for use designations in intermittent streams. However, the shellfish bacteria criteria have been reworded to reflect the National Shellfish Sanitation Commission recommendations for fecal coliform levels in shellfish waters.

Basis*

Please identify the state and/or federal source of legal authority to promulgate the regulation. The discussion of this statutory authority should: 1) describe its scope and the extent to which it is mandatory or discretionary; and 2) include a brief statement relating the content of the statutory authority to the specific regulation. In addition, where applicable, please describe the extent to which proposed changes exceed federal minimum requirements. Full citations of legal authority and, if available, web site addresses for locating the text of the cited authority must be provided. Please state that the Office of the Attorney General has certified that the agency has the statutory authority to promulgate the proposed regulation and that it comports with applicable state and/or federal law.

§ 62.1-44.15(3a) of the Code of Virginia, as amended, mandates and authorizes the Board to establish water quality standards and policies for any State waters consistent with the purpose and general policy of the State Water Control Law, and to modify, amend or cancel any such standards or policies established. The federal Clean Water Act at 303(c) mandates the State Water Control Board to review and, as appropriate, modify and adopt water quality standards. The corresponding federal water quality standards regulation at 40 CFR 131.6 describes the minimum requirements for water quality standards. The minimum requirements are use designations, water quality criteria to protect the designated uses and an antidegradation policy. All of the citations mentioned describe mandates for water quality standards.

Web Address sites where citations can be found:

Federal Regulation web site

<http://www.epa.gov/epahome/cfr40.htm>

Clean Water Act web site

<http://www4.law.cornell.edu/uscode/33/1313.html>

State Water Control Law (Code of Virginia) web site

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+62.1-44.2>

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+62.1-44.15>

The content of the statutory authority is related to the specific regulation in that the amendments are modifications of existing criteria that will protect designated uses and criteria and designated uses are requirements of the water quality standards.

The proposed amendments do not exceed federal minimum requirements.

The Office of the Attorney General has certified that the agency has the statutory authority to promulgate the proposed regulation and it comports with applicable state and/or federal law.

Purpose*

Please provide a statement explaining the need for the new or amended regulation. This statement must include the rationale or justification of the proposed regulatory action and detail the specific reasons it is essential to protect the health, safety or welfare of citizens. A statement of a general nature is not acceptable, particular rationales must be explicitly discussed. Please include a discussion of the goals of the proposal and the problems the proposal is intended to solve.

Water Quality Standards establish the requirements for the protection of water quality and of beneficial uses of these waters. The purpose of this rulemaking is to update the statewide ammonia and bacteria criteria to match updates published by the Environmental Protection Agency.

The amendments are needed because EPA has published updates to these criteria for the states to incorporate into their water quality standards. EPA's updates contain more recent scientific information. All states are required to consider these updates when amending their water quality standards. EPA disapproved Virginia's fecal coliform bacteria criteria and has specifically required Virginia to update these standards to match EPA's guidelines. If the new bacteria criteria are not adopted, EPA will promulgate the new criteria for Virginia. The existing ammonia criteria are not disapproved by the EPA but the updates are included in this proposal because these criteria represent the most recent scientific information regarding the toxicity of ammonia.

This provision of the regulation is justified from the standpoint of the public's health, safety or welfare in that it allows for the protection of designated uses of the water bodies. Proper criteria protect water quality and living resources of Virginia's waters for consumption of fish and shellfish, recreational uses and conservation in general.

Substance*

Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. Please note that a more detailed discussion is required under the statement providing detail of the regulatory action's changes.

A new section (9 VAC 25-260-155) is proposed which includes the updates to the ammonia criteria. This section includes EPA's 1999 freshwater ammonia criteria with acute criteria and chronic criteria for waters with early life stages of fish present and chronic criteria for waters with early life stages of fish absent. The chronic criteria for waters with early life stages of fish

present applies unless a specific procedure is followed to make the determination if the early life stages of fish are absent. The procedure to determine whether early life stages of fish are absent is described in the regulation. These determinations of whether the early life stages of fish are absent are implemented via the permit process. If the procedure is not followed or if any additional data are used to make the determination, then a site-specific criterion must be adopted.

Several localities in the northern Virginia area have made the determination of early life stages of fish absent for November through February in the freshwater tidal Potomac embayments. This determination is incorporated into the proposal as an amendment to the special standards section as “y”. It is incorporated as a site-specific standard because the study incorporated additional data to make the determination. The special standard “y” has been added to the appropriate column in the River Basin Section Tables at 9 VAC 25-260-390.

The saltwater ammonia criteria are updated to reflect the same concentration units (mg nitrogen per liter) as the freshwater criteria. In addition, the saltwater ammonia criteria have been recalculated based on the formulas referenced in EPA’s 1989 saltwater ammonia criteria document.

A definition is proposed for primary contact recreation in support of the new bacteria criteria.

The shellfish bacteria criteria are reworded to reflect the National Shellfish Sanitation Commission recommendations for fecal coliform levels in shellfish waters.

The bacteria criteria for swimming waters (primary contact recreation) are updated to include the EPA 1986 criteria recommendations for enterococci and *E. coli* in designated swimming areas. These criteria apply in all state waters since all waters are considered swimmable. The existing fecal coliform bacteria criterion is changed to match the fecal coliform criterion published by EPA in 1976. This criterion has a “sunset clause” associated with it to phase out the fecal coliform criteria as DEQ collects more data on the new bacterial indicators recommended in 1986 by EPA (enterococci and *E. coli*).

The time period associated with the new criteria is proposed as a calendar month rather than a 30-day average. This is to reflect the DEQ’s monitoring program schedule which is based on monthly site visits, rather than 30-day intervals.

The Board’s disinfection policy for sewage effluents is updated in the proposal to reflect the new bacteria criteria.

Issues*

Please provide a statement identifying the issues associated with the proposed regulatory action. The term "issues" means: 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 include a sentence to that effect.

The primary advantage to the public is that the updated criteria are based on better scientific information to protect water quality. For example, the updated bacteria criteria (enterococci and/or *E. coli*) are proven to be better indicators of the risk of contracting a gastrointestinal illness while swimming than the existing indicator (fecal coliform). The updated ammonia criteria may be viewed as less stringent than the existing criteria; however, the scientific data base supporting that criteria is better than the one supporting the existing criteria and more accurately portrays the toxicity of ammonia in fresh water. Being less stringent, the new ammonia criteria may result in financial relief for some Virginia Pollutant Discharge Elimination System permittees, particularly in the wintertime when early life stages of fish are absent. The disadvantage is that the public may see this as an attempt to "lower the bar" on water quality. The goal is to set realistic, protective goals in water quality management and to maintain the most scientifically defensible criteria in the water quality standards regulation.

A potential disadvantage to the public may occur in the implementation of the new indicator bacteria criteria. The new indicators are more expensive to analyze than the existing criteria. These expenses are outlined under "Fiscal Impacts." However, the DEQ plans to study the levels at which chlorine disinfection reduces the levels of these bacteria to the levels specified by the criteria. This type of study was done with the existing fecal coliform criteria and that study resulted in most permittees getting a specified chlorine residual limit rather than a fecal coliform limit. If DEQ cannot demonstrate that chlorine disinfection of effluent is sufficient to remove the indicator bacteria to acceptable levels, then sewage treatment plant operators may be required to measure these additional indicators directly in the effluent rather than just measuring for chlorine residual for discharge monitoring reporting requirements.

There is no advantage or disadvantage to the agency or the Commonwealth that will result from the adoption of the ammonia amendments. Many existing permits already contain ammonia limits based on the existing criteria and may not be able to modify their permit to obtain the less stringent limits based on the new criteria because of antibacksliding rules (9 VAC 25-31-220 L). Backsliding of limits is not allowed by the permit regulation when regulations are revised or when existing limits are met.

Regarding the advantages or disadvantages to the agency for the bacteria amendments, limited data indicates that using the new bacterial indicators may result in equal to or greater numbers of waters identified as impaired than those identified as impaired using the fecal coliform indicator. There may be more impaired waters because the new indicator bacteria criteria are much lower than the existing fecal coliform criteria. This may disadvantage the agency financially via the need for development of more TMDLs. The costs of implementation of these TMDLs will be

adsorbed by citizens including the agricultural community, municipalities, industries, and localities. These expenses are summarized under “Fiscal Impacts.”

The agency will be disadvantaged financially because the new bacteria criteria will require more monitoring expenses. These expenses are outlined under “Fiscal Impacts.”

Another pertinent matter of interest is that the proposal does not include amendments related to intermittent streams or shellfish use designations as stated in the Notice of Intended Regulatory Action. DEQ and the ad hoc committee discussed alternatives that were revealed after the comment period to meet the needs for the shellfish use designations via discussions with EPA. Also existing procedures were deemed appropriate for meeting the needs for use designations in intermittent streams.

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.

These amendments are statewide in nature and will not affect any one locality more than another.

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.

In addition to any other comments, the Board is seeking comments on the costs and benefits of the proposal and impacts of the regulation on farm or forestlands. The Board also requests comments on whether we should incorporate both of the new indicators in freshwater (enterococci and *E coli*) or just adopt one indicator for protection of primary contact recreational uses in freshwater in Virginia. The only indicator recommended by EPA in saltwater is enterococci.

Anyone wishing to submit written comments for the public comment file may do so at the public hearing, by mail, or by email to Elleanore Daub, Department of Environmental Quality, P.O. Box 10009, Richmond, VA 23240, (804) 698-4111, by fax to (804) 698-4522 or email emdaub@deq.state.va.us. Written comments must include the name and address of the commenter. In order to be considered comments must be received by 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.

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 by (date).

Fiscal Impact

Please identify the anticipated fiscal impacts and at a minimum include: (a) the projected cost to the state to implement and enforce the proposed regulation, including (i) fund source / fund detail, (ii) budget activity with a cross-reference to program and subprogram, and (iii) a delineation of one-time versus on-going expenditures; (b) the projected cost of the regulation on localities; (c) a description of the individuals, businesses or other entities that are likely to be affected by the regulation; (d) the agency's best estimate of the number of such entities that will be affected; e) the projected cost of the regulation for affected individuals, businesses, or other entities; and f) an estimate of the impact of the proposed regulation upon small businesses as defined in § 9-199 of the Code of Virginia or organizations in Virginia.

There will be fiscal impacts to the state for additional monitoring costs. The proposal contains three bacterial criteria (fecal coliform, enterococci and *E. coli*) as opposed to the existing regulation which contains one bacteria criterion (fecal coliform). To measure both enterococci and *E.coli*, the analysis costs increase about \$33 per sample. There are approximately 800 stations expected to be monitored every other month per year. This would increase monitoring costs about \$158,400 per year for DEQ.

Increased costs for monitoring may be imposed upon permittees if fecal coliform limits are replaced by or used in addition to enterococci and/or *E.coli* limits. There are 1236 Virginia Pollutant Discharge Elimination System sewage discharge permittees in Virginia. Most of these permittees contain permit limits for disinfection of chlorine residual in lieu of fecal coliform limits. It is the intent of the Department of Environmental Quality to continue with this practice. However, 219 permits contain fecal coliform limits instead of, or in addition to, chlorine residual limits. This occurs primarily at facilities using something other than chlorine for disinfection. If the new indicators are used as the permit limits instead of fecal coliform, this could increase costs to approximately \$8,000 per facility per year with weekly monitoring. One major facility with daily monitoring requirements provided us their cost estimate of \$32,850/year over the cost of fecal coliform monitoring to do monitoring for *E. coli* and enterococcus.

Of the 219 discussed above, there are 27 small businesses that may be impacted by the additional monitoring costs of the bacteria amendments.

There will also be fiscal impacts to the state and its citizens due to the effect the new bacterial indicators will have on the total maximum daily load program (TMDL). Preliminary analysis of bacterial data at 100 sites statewide over the past year indicate that the new indicator for enterococci is exceeded more than the existing fecal coliform criteria of 1000 colonies/100 ml. About 40% more samples are exceeded using the enterococci single sample maximum for designated beach areas vs. the existing fecal coliform criteria. *The Report to the Honorable*

James S. Gilmore, III, Governor and Chairs of the House Committees on Appropriations and Conservation and Natural Resources and the Senate Committees on Finance and Agriculture, Conservation and Natural Resources, November 1, 2000 contains an estimate of \$400,000 - \$800,000 to implement a TMDL in a watershed. It is also estimated that approximately 255 TMDLs for fecal coliform bacteria will be developed during the next ten years. If the preliminary data are an indication that there will be a 40% increase in the number of bacteria TMDLs (i.e. 102 more TMDLs), then costs for implementation of TMDLs may increase 40,800,000 – 81,600,000 over the next ten years. The state may bear some costs as well in the development of these additional TMDLs. The same November 1, 2000 report, Appendix E, cites a cost of \$35,000 to develop a fecal TMDL. Applying this cost to develop 40% more TMDLs, one may assume a state cost increase of approximately \$3,570,000 over existing costs to develop these additional bacterial TMDLs.

These amendments are statewide in nature and will not affect any one locality more than another.

Detail of Changes

Please detail any changes, other than strictly editorial changes, that are being proposed. Please detail new substantive provisions, all substantive changes to existing sections, or both where appropriate. This statement should provide a section-by-section description - or cross-walk - of changes implemented by the proposed regulatory action. Where applicable, include citations to the specific sections of an existing regulation being amended and explain the consequences of the proposed changes.

In existing section 9 VAC 25-260-5 a definition is proposed for primary contact recreation. This is added in support of the new criteria, which are designed to protect primary contact recreation.

In existing subsection 9 VAC 25-260-140 B a reference to the new ammonia section (9 VAC 25-260-155 and a reference to the bacteria sections (9 VAC 25-260-160 and 170) is proposed in the Table of Parameters. Also under footnote 10 of the Table of Parameters, the EPA recommended default design flow for the chronic ammonia criteria for ammonia is added. Also the existing numerical ammonia criteria in Tables 1, 2, 3 and 4 are proposed for deletion because the new ammonia criteria have been moved to new section 9 VAC 25-260-155.

A new section (9 VAC 25-260-155) is proposed that contains the ammonia criteria. Subsection A contains the new acute freshwater ammonia criteria as recommended by EPA. It is presented in table format and by formula. This subsection also repeats the default design flow for the acute criteria. Subsection B contains the new chronic ammonia criteria for waters where early life stages of fish are present as recommended by EPA. It is presented in table format and by formula. These are the default chronic criteria unless subsection C is implemented. Subsection B also repeats the default design flow for the chronic criteria. Subsection C contains the new chronic ammonia criteria for waters where early life stages of fish are absent as recommended by EPA. It is presented in table format and by formula. This subsection also repeats the default design flow for the chronic criteria. It also contains the specific procedures that must be

followed in order to apply this criteria (it is less stringent the subsection B – early life stages of fish present chronic criteria). Subsections D and E contain the acute and chronic saltwater ammonia criteria as recommended by EPA. These criteria are based on the existing criteria moved from Tables 3 and 4 of the Table of Parameters (9 VAC 25-260-140 B). The values proposed in the table of new subsections D and E are slightly different from the values in old subsection 9 VAC 25-260-140 B, Tables 3 and 4. This is because we recalculated the values in total ammonia nitrogen (previously they were listed as total ammonia) to match the units expressed in the freshwater criteria and recalculated the table based on the formulas referenced by EPA in the 1989 *Ambient Water Quality Criteria for Ammonia (Saltwater)*. The recalculations cause minor changes in the numbers in the new table.

In existing section 9 VAC 25-260-160, the shellfish waters criteria are reworded to match the National Shellfish Sanitation Program's criteria. The rewording does not change the existing numerical criteria.

In existing section 9 VAC 25-260-170 subsection A, the proposed bacteria criteria for all waters are updated to match EPA's criteria. The fecal coliform criteria are changed to match the fecal coliform criteria published by EPA in 1976. Although fecal coliforms show a weak correlation to the risk of contacting illness from contaminated swimming water, there are still many TMDLs, in various stages of development, based on fecal coliform. In order to finalize those TMDLs that are near completion to keep up with the EPA's TMDL development schedule, the proposal has a "sunset clause" associated with this criterion. The fecal coliform criterion will be phased out, site by site as DEQ collects more data on the new bacterial indicators (enterococci and *E. coli*). This will ensure that DEQ has enough data for the new bacteria indicators before deleting the fecal coliform criterion. The new bacterial indicators for enterococci and *E. coli* are proposed as a monthly geometric mean for two or more samples and a single sample maximum. Enterococci and *E. coli* both apply in freshwater and enterococci applies in saltwater. These values are the most conservative and protective values published by EPA for designated beach areas. These values apply statewide. Subsection B contains the disinfection requirements for sewage discharges. These requirements match the requirements of the new criteria.

The time period associated with the new criteria is proposed as a calendar month rather than a 30-day average. This is to reflect the DEQ's monitoring program schedule, which is based on monthly site visits, rather than 30-day intervals.

In existing section 9 VAC 25-260-310, a new special standard "y" is proposed. This is a special standard for ammonia for the tidal freshwater Potomac River for the months of November 15 through February 14 of each year. The localities in the area did a special study to demonstrate that less stringent ammonia criteria were protective in those waters. These new criteria are the same criteria in subsection 9 VAC 25-260-155 C for ammonia criteria in waters where early life stages of fish are absent. This special standard is proposed because the locality used additional data than what is allowed by the procedure set up under 9 VAC 25-260-155 C to demonstrate the absence of early life stages of fish in the winter months. Normally, the early life stages of fish

absent provision would be implemented via the permit process rather than a site-specific standard.

Special standard “y” is proposed for addition in the appropriate column in the River Basin Section Tables in section 9 VAC 25-260-390 so that the reader is prompted to look up the special ammonia criteria that applies in this section of water.

Alternatives

Please describe the specific 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 agency considered keeping the existing ammonia criteria and not proposing the new freshwater ammonia criteria. Keeping the existing criteria would be more conservative and some public believed that maintaining the existing criteria was necessary until studies had been completed that assured endangered mussel species were protected by the higher ammonia concentrations. However, DEQ decided to propose EPA’s new criteria since the water quality standards should reflect the most recent science that is also protective of aquatic life. In situations where the permittee is allowed to demonstrate that less stringent limits are appropriate via the early life stage absent provision, they will be required by proposed subdivision 9 VAC 25-260-155 C 4 to show that any modifications to criteria in this provision shall not likely jeopardize any threatened or endangered species.

The agency believes that the proposed amendments for ammonia are the least burdensome alternative to the regulated community that is also protective of all designated uses and fully meets the stated purpose of the proposed regulation. It is expected to have no impact on the regulated community that already have existing ammonia limits (because of antibacksliding permit regulations) and may provide some winter time relief to some permittees who demonstrate that early life stages of fish are absent.

For the bacteria amendment, the agency considered whether we should adopt all four levels of primary recreational use, or some subset of those levels of primary use. The four levels recommended by EPA in the 1986 *Ambient Water Quality Criteria for Bacteria* are designated beach area, moderately used full body contact, lightly used full body contact and infrequently used full body contact. Each of these primary uses had different single sample maximum criterion for bacteria to protect the different levels of use. For example, the beach area designation had a more stringent single sample maximum than the infrequently used full body contact recreational use. The geometric means were the same for each level of use. Proposing anything less than “designated beach area” was perceived by some members of the public as a downgrade of uses since currently all waters are protected for swimming. Other members of the public believed DEQ need to be flexible and reasonable in their approach to designating recreational uses because some streams were not accessible for swimming, nor physically deep or wide enough to allow swimming. DEQ decided that we did not have enough information to

divide the Commonwealth up into four or fewer levels of primary use. In addition, the result would have little negative or positive impact on any permittee, citizen or the environment since the geometric mean was the same for each level of use. Therefore, DEQ chose the most stringent level of protection to match the existing levels of protection statewide.

DEQ also considered adding a category for secondary contact recreational uses. These waters were to be adopted on a site-specific basis after a sufficient amount of information had been gathered to demonstrate that certain surface waters may be designated in accordance with 9 VAC 25-260-10 G (Designation of Uses) and protected for secondary contact recreation. DEQ believed that this might provide a less burdensome alternative that was still protective of actual and existing uses. However, this alternative was not proposed because staff determined that this issue needed further discussion and communication with the general public and interest groups to allow for a more complete understanding of the issues surrounding secondary contact recreation. It was determined that this further dialogue could take place during the state and federally mandated triennial review of the water quality standards regulation that is currently underway.

Another alternative considered was whether to include amendments related to intermittent streams or shellfish use designations. DEQ and the ad hoc committee discussed alternatives that were revealed after the comment period to meet the needs for the shellfish use designations via discussions with EPA. Also existing procedures were deemed appropriate for meeting the needs for use designations in intermittent streams.

Public Comment

Please summarize all public comment received during the NOIRA comment period and provide the agency response.

Alexandria Sanitation Authority, Arlington County, Fairfax County, and Prince William County Service Authority (David Evans, McGuire Woods LLP) – Requests the Board include a regional cold weather adjustment to the ambient chronic ammonia criteria as per EPA’s 1998 and 1999 updates of the ambient water quality criteria for ammonia. This adjustment would include the “early life stages absent” table from the EPA 1999 update and specify that this table applies to the calculation of ammonia limits for discharges to the freshwater tidal embayments of the Lower Potomac River from the fall line above Chain Bridge downstream to Cockpit Point during the period November 1 to February 14. They provided the scientific basis for this proposal. They also provided the engineering justification to demonstrate that without this adjustment (the adjustment results in a higher winter ammonia limit) a wastewater treatment plant will be forced to operate for greater ammonia removal at the expense of total nitrogen removal during the winter. The net result will be a higher annual average total nitrogen concentration in the effluent.

E. Cline Brubaker – Supports the use of the participatory approach in this revision of the water quality standards. All stakeholders should be involved in this process so that realistic standards can be created.

Chesapeake Bay Foundation (CBF) (Jeff Corbin, Staff Scientist) – CBF is opposed to several of the proposed alternatives in the NOIRA because they are not science-based, but rather, are part of a trend of DEQ standards revisions being initiated to relieve workload pressures.

Regarding low flow streams, CBF opposes any effort to downgrade the designated uses and criteria that apply to intermittent or ephemeral streams. These streams are capable of supporting abundant and diverse assemblages of vertebrate and invertebrate species. Site specific criteria may be one option but these studies should adhere to the requirements of a comprehensive Use Attainability Analysis following EPA-approved procedures and supported by long-term monitoring and sampling data.

Regarding primary/secondary/seasonal recreational uses, CBF opposes this proposed action and requests that DEQ withdraw this alternative. The alternative violates the requirements of the Clean Water Act. CBF believes this is an attempt to relieve financial and staff workload demands and may result in removal of a significant portion of the degraded waters from the impaired waters list. It is the national goal of the Clean Water Act that the discharge of pollutants into navigable waters be eliminated by 1985. It is also the national goal that wherever attainable, an interim goal of water quality to provide for recreation in and on the water be achieved by July 1, 1983. It is clear from the most recent 303(d) and 305(b) reports that Virginia is a long way from attaining either of these goals of the federal law. Reducing bacteria contamination is a difficult task but the federal law makes no distinction between the sources of pollutant or whether recreation is not presently occurring in the stream. If DEQ believes that designated uses must be downgraded or removed, they must be done in accordance with federal regulations and a use attainability analysis must be conducted for each water body proposed with an opportunity for public comment for each.

Regarding shellfish waters – CBF understands the required administrative condemnations associated with outfalls and marinas but opposes an across-the-board use removal or relaxation of water quality criteria in these outfall and marina areas because they are highly susceptible to fecal contamination. The most direct approach to resolving this conflict would appear to be a modification of the procedure by which VDH issues shellfish harvest restrictions and prohibitions and not a change of criteria.

Overall, CBF requests that DEQ withdraw the proposed alternatives related to downgrades of water quality criteria for low flow streams and the recognition of designated uses other than primary contact recreation. If DEQ refuses to do this, CBF recommends the participatory approach to further evaluate the technical and legal validity of these alternatives.

Virginia Department of Conservation and Recreation (DCR) (David G. Brickley, Director)

- DCR supports the concepts presented in the NORIA. DCR believes the development of meaningful TMDLs would be enhanced by pursuing some of the alternatives in the NORIA. TMDL development to date has identified components to the existing regulations that would require extreme levels of fecal coliform removal to protect designated uses, that do not exist in many streams. Failure to revise the existing regulation could result in farm owners expending significant resources for fecal coliform removal to support designated uses that do not exist.

Culpeper Wood Preservers (Joseph Daniel) – Culpeper Wood Preservers supports the need to revise the regulation to recognize the limited aquatic life and recreational uses of intermittent and ephemeral streams and dry ditches. Currently this company has a storm water discharge to an unnamed tributary that is dry except during and after storm events. This discharge is subject to a water quality criterion for chromium intended for free flowing streams. This criterion did not take into account the non-existent benefits of the ditch or the storm-dependent flow of water in the ditch. These factors should be considered in the water quality standards as well as to the application of these standards to permits.

Virginia State Dairymen's Association (Dale Gardner, Executive Secretary-Treasurer)– The Dairymen's Association supports the participatory process and volunteers to be part of a committee to develop language for this proposal. They believe that fishing and swimming uses are not realistic in small, narrow, meandering, intermittent streams and prefer a multi-use designation for this type of streams. They also believe this may be a site-specific process, depending on the amount of animal production in the area. They are also concerned that “grab” sample stream monitoring is not a reliable indicator of the stream conditions over time. This is especially true during drought periods. Monitoring should only occur during normal flow periods. The Association asks that Virginia's standards be scientifically warranted, reasonable and realistic and with a balance of environmental concerns with the economic burdens on the communities.

Dominion Generation (Pamela Faggert, Vice President and Chief Environmental Officer) – Dominion supports the establishment of an ad hoc advisory group to address these and other issues mentioned in the NOIRA. Dominion Generation endorses the comments submitted by the Virginia Manufacturer's Association. Dominion believes that intermittent and ephemeral streams and dry ditches have limited uses. For example, an intermittent stream would not provide a drinking water source that requires public water supply protection. Other states specifically recognize the unique characteristics and uses of intermittent, ephemeral, and effluent-dependent streams and dry ditches. Dominion recommends that DEQ consider these other states' provisions.

Dominion Generation believes the DEQ should remove the public water supply designation from the section of the Roanoke River bound by Route 746 and Route 360 bridges. This area is currently designated as a public water supply. However, there are no drinking water intakes on the Roanoke River in this section. The closest intake is over five miles downstream from the Route 360 bridge.

Dominion Generation recommends the DEQ stay the implementation of, or replace, the existing 1987 freshwater acute aquatic life selenium criterion of 20 µg/L. EPA failed to follow its own guidelines in developing this criterion. Dominion Generation provided specific examples where and how EPA deviated from its Guidelines. The U.S. Court of Appeals for the D.C. Circuit struck down the same acute criterion for selenium for the Great Lakes. The court vacated the criterion and remanded it to EPA for further action. As a result, EPA must undertake a new rulemaking and cannot require States to implement the acute selenium criterion in the meantime. EPA has since published a proposed rule that uses the acute toxicological database rather than

the improper procedure followed in 1987. EPA is continuing with its evaluation of the acute and chronic criteria for selenium and expects to issue revised acute and chronic criteria by mid-2001. Dominion Generation provided published literature that updates the 1987 criteria.

Environmental Protection Agency (EPA) (Mark Smith, Region III) - EPA states that the recommended bacteria criteria are presented in the 1986 EPA Ambient Water Quality Criteria along with a statistically derived number to apply to various levels of swimming probability. All states should have a primary contact recreational use during the swimming season that corresponds to the probability of swimming described in the 1986 document. Secondary standards can be applied during the non-swimming season.

EPA states that intermittent, ephemeral and effluent dependent streams are considered navigable waters of the state and must meet all designated uses.

EPA also recommends the 1999 Update of Ambient Water Quality for Ammonia.

EPA referred to an October 24, 2000 letter from Geoffrey Grubbs and Robert Wayland of EPA to transmit their comments on shellfish use designations. This letter says that waterbodies that have a fish or shellfish consumption advisory as a precautionary measure due to the proximity of wastewater treatment discharges need not be listed as impaired under section 303(d) unless there are waterbody-specific data showing non-attainment of section 101(a) uses.

Franklin County Board of Supervisors (Bonnie N. Johnson, Assistant County Administrator) – Franklin County would like DEQ to provide a broad-based committee to assist in this rulemaking (use the participatory approach). They offered the help of the Assistant County Administrator for use on the committee but are concerned the exercise will not result in reasonable standards due to EPA requirements.

Franklin County recognizes the fecal coliform standards are out of date (30-40 years old) and were intended for point source controls. These standards cannot be achieved due to the contributions from animal life that inhabit our watersheds. For example, the TMDL in the Blackwater River determined that the presence of wildlife alone would cause the existing fecal coliform standard to be violated. They outlined their concerns about the fecal coliforms standard as follows: Wildlife cannot be eliminated from the watershed, many livestock farms rely on the surface water (the groundwater table is declining) therefore, imposition of the fecal coliform standard may cause environmental damage to the already declining ground water table, fencing as an implementation strategy will cause the closure of many dairy farms, most waters are not used for swimming which is what the fecal coliform is designed to protect, farming is part of the cultural and economic diversity of the county and removal of this may change land uses (development) which would further impact the streams, the existing standards should be subject to an economic impact assessment, improvements in water quality should continue as a voluntary action for forestry and agriculture which has proven successes, non-point sources were never involved in the development of the fecal coliform standard and the impacts to non-point source were never discussed with those sources, TMDL implementation could result in dairy operations moving to western states which are actively soliciting dairy operations. They recommend the imposition of direct indicators (pathogens), the differentiation of water use categories (i.e.

swimming), quantitative standards, accounting for seasonal and weather events in our testing protocols (use of averages), and economic impact analyses of standards.

Virginia Department of Health (VDH) (E. Anne Peterson, M.D., M.P.H. State Health Commissioner)– The VDH is supportive of DEQ replacing the existing fecal coliform criteria with EPA’s *1986 Ambient Water Quality Criteria for Bacteria*, which includes using enterococci and *E.coli*. *E.coli* originates from all animal sources (more so than enterococci which is more commonly found in human feces) and the VDH is concerned about the unknown risk of human exposure to non-human sources of fecal contamination. Therefore, the VDH recommends DEQ use both enterococci and *E. coli* in freshwaters to account for that unknown risk. There is no health-related reason to recommend continued use of the fecal coliform bacteria as an instream water quality criterion. If DEQ decides to keep fecal coliform as an indicator organism in addition to the new criteria, the fecal coliform criteria should be changed from the existing single sample maximum of 1000/100 to a single sample maximum of 400/100ml. The VDH would like DEQ to adopt both a single sample maximum and geometric mean numerical criteria. Any exceedence of the single sample maximum would then be followed up with additional sampling to calculate a geometric mean. VDH believes the levels of risk, the confidence limits and the standard deviations that are stated in the EPA Ambient Bacteria Criteria are acceptable. However, the VDH recommends that effluent limits (disinfection policy for treated sewage effluents) should remain as 200 MPN based on fecal coliforms. This is based on the known operational performance of disinfection systems of sewage treatment works.

Regarding recreational uses, the VDH believes the four levels of primary contact stated in the *1986 EPA Ambient Water Quality Criteria for Bacteria* document provide flexibility to localities; however, these four levels might be cumbersome to DEQ. If DEQ decided to limit the levels of primary use, VDH recommends that DEQ limit to the first two levels of recreational use: designated bathing beach and moderately used full body contact recreation. If DEQ decided to adopt all four levels of primary use, the VDH would be willing to work with DEQ to provide estimates of use that can be used to determine the level for any primary recreation area. The VDH believes a seasonal use may be appropriate from May to October. If DEQ decides to employ the seasonal use designation, VDH recommends that secondary uses apply for the remaining part of the year. The numerical criteria that would apply during the “off” season would be no greater than five times the primary criteria. In addition, the VDH believes the designation of a secondary contact recreational use may be appropriate year round. VDH would be willing to work with DEQ to make these determinations.

Regarding shellfish use designations, the VDH believes the DEQ may reflect the “taking” of the shellfish harvesting use from areas condemned under the NSSP in areas around marinas and wastewater treatment facilities. Condemnations impacted by other point and non-point sources should not be recognized in the standards as these areas may be improved via a TMDL. Also, the DEQ should change the existing shellfish water quality standard for bacteria to match the current NSSP requirements.

James River Association (Patricia Jackson, Executive Director) - The goal of the Clean Water Act is to achieve swimmable and fishable waters. The proposed amendments would result in downgrading use designation and changing existing numerical criteria for ammonia and

bacteria in state waters. This would reduce the swimming and fishing uses. The amendments would degrade water quality and undermine efforts to improve state waters. The State Water Control Board should focus on developing the TMDLS to improve water quality, rather than changing the water quality standards. The James River Association does not support the alternative of designating some waters for primary contact and others for secondary contact, with different bacteria levels for each. They also do not support wet weather standards with the assumption that recreational uses do not need protection during wet weather events. They also believe Virginia should place emphasis on improving shellfish habitat, rather than dismissing some as prohibited. The efforts associated with this rulemaking are to weaken and downgrade the standards and should be abandoned. Efforts should be devoted to development and implementation of TMDLS and strengthening water quality standards to meet Clean Water Act goals.

Mountain View Farms (Roger P. Jefferson, President) – Supports the use of a participatory advisory committee in which all stakeholders are involved. This will increase support and implementation of the standards.

Virginia Association of Municipal Wastewater Agencies (VAMWA) (Mark Haley, President) – Requests that DEQ use the participatory approach and that VAMWA be included in that process.

VA's designated uses are very broad and non-specific. EPA has acknowledged that states need to more precisely tailor use descriptions and criteria and that statewide criteria are not sufficiently precise to distinguish among all the sub-categories of uses. For example, every waterbody in VA is not suitable for primary contact recreation due to non-water quality related and seasonal factors. DEQ should refine this swimming use designation to distinguish between primary and secondary contact recreation and reflect seasonal uses.

Prohibitions on uses due to other non-Clean Water Act related restrictions (shellfish restrictions) and swimming prohibitions during high water should be included reflected in designated uses. If a full assessment is impracticable such restrictions should be addressed in a narrative provision.

Provisions are currently provided in the regulation to base use designations on natural flow but this is not reflected in the use designations. The current avenues used by the state (variances site by site) for correcting inappropriate use designations are inefficient.

Regarding bacteria criteria, it is unattainable to require a single sample limit which is applicable on an "anytime anywhere" basis. To address this, the standard should also contain a frequency and duration component that addresses wet weather conditions and natural variation. Since the criteria were developed based on data from beaches where human waste was known to be present, the criteria must recognize that they only apply to those situations where wastes of human origin are suspected. In addition, DEQ should undertake a statewide use attainability analysis to ensure that the new standards are attainable. The existing criterion is not attainable and unrealistic in many waters of the state.

VAMWA supports the update of the freshwater ammonia criteria and DEQ should include the provisions for modification of the criteria based on the absence of early life stages of aquatic organisms. Also DEQ should include a procedure for using the new criteria based on monthly temperature considerations to more accurately reflect the toxicity of each water body for the time of year.

Virginia Manufacturers Association (VMA) (Cathy Taylor, Vice President, Environmental Affairs) – VMA supports and would like to participate in a technical advisory committee for stakeholders to share their views and exchange dialogue with DEQ and others.

VMA supports the adoption of EPA's new water quality criteria for ammonia including the implementation procedures published in the federal register on December 22, 1999.

VMA supports the recognition of the distinct characteristics of intermittent, ephemeral, and effluent-dependent streams and dry ditches. Many states already have special provisions in their standards for these categories and DEQ should review these. DEQ should also review EPA Region 9 guidance entitled "Interim Final Guidance for Modifying Water Quality Standards and Protecting Effluent-Dependent Ecosystems" (June 17, 1992) which introduces a concept called "Ecological Benefits Comparison". All waters of the state are not the same (i.e. flow-limited waters) and many cannot support aquatic life typical of perennial waters. The regulations should provide flexibility for regulating these flow-limited waters practically that considers the actual aquatic life present.

VMA recommends that DEQ revise its water quality standards such that permanently restricted or prohibited shellfish areas are classified appropriately. Without this the regulations might impose regulatory burdens that yield no environmental benefits. This would be consistent with existing EPA guidance that specifies that restricted or prohibited shellfishing areas should not be included on 303(d) lists. This can be done in the standards by adjusting designated uses for restricted and prohibited shellfish areas or to provide implementation policies allowing for exemptions from numeric criteria in NPDES permits in those waters.

Northern Virginia Regional Commission (David Bulova, Director, Environmental Sciences Division) – The Commission supports the move away from the use of fecal coliforms toward the use of *E. coli* and enterococci as Virginia indicators of human health risk from bacteria. They recommend this change due to the possibility that Virginia is misidentifying stream segments that truly pose a human health risk. Also, Virginia may be developing TMDL's for streams that may not actually be impaired according to the new standards. Conversely, Virginia may discover additional stream segments that do not meet the new standards and will need new TMDL's.

City of Richmond, (Department of Public Utilities, George R. Kolb, Director) – The City supports using the participatory approach in the development of the regulation. The rulemaking should address wet weather situations and incorporate conditions for the planning and design of Combined Sewer Overflow (CSO) control programs. These wet weather standards are necessary because receiving water drought flows and recreational uses do not exist under wet weather conditions. The rulemaking should contain segments of receiving waters that would be subject

to wet weather standards, high receiving water flow conditions above which numeric standards would not apply or tiered numeric standards would be established and rainfall amounts and intensities that produce storm events during and following which normal uses would not be safe or practicable. The standard should also contain a frequency and duration component that addresses wet weather conditions and natural variation. The standard must recognize that non-human source bacteria are a lesser human health threat. The standard should recognize that partial uses are due to human presence and that high flow, flooding and physical conditions impose partial uses. Uncontrolled human sources upstream of urban areas prevent attainment of uses and these other non-permitted sources need to be addressed. Background loads into urban areas are dependent on receiving water flows.

Scott Sink (Dairy Farmer from Franklin County) – Supports the use of a participatory advisory committee in which all stakeholders are involved. This will increase support and implementation of the standards. Mr. Sink offers his time and commitment to this process.

Southern Environmental Law Center (Katherine Slaughter, Senior Attorney and Pilar Penn, Associate Attorney) – The results of the proposed amendments would be to downgrade use designations and numerical criteria for fecal coliform and allow waters to become too polluted to swim or fish. The Clean Water Act requires waters capable of fishing and swimming and downgrading would remove these uses. The amendments also violate the antidegradation policy that mandates maintenance and protection of existing uses. These downgrades appear to be a way of getting around the task of developing TMDL's for these waters. They oppose these proposed changes and strongly urge DEQ to withdraw its proposal.

United States Fish and Wildlife Service (USFWS) (Karen Mayne, Supervisor, Virginia Field Office) – DEQ should retain its current ammonia criteria until the EPA, USFWS and the National Marine Fisheries Service ongoing review of all criteria (including ammonia) has insured that early life stages of freshwater mussels (endangered species) are protected by the new criteria.

Virginia should retain the current high level of primary contact recreational use designations and direct our resources to restoring the chemical, physical and biological integrity of the Commonwealth's waters rather than the relaxation of standards to remove waters from the TMDL list.

USFWS is concerned that the Commonwealth is considering removing aquatic life uses from intermittent, ephemeral and effluent-dependent streams. Such an action renders these streams to a waste transport or waste assimilation use, which is not allowed by the Clean Water Act. There is much scientific information that documents the importance of aquatic life uses in these types of streams (examples were provided and described). These streams provide habitat to many species including fish, amphibians and a wide variety of invertebrates (references were provided). The DEQ should undertake an exhaustive review of data to fully document aquatic life uses and to understand the hydrologic conditions in these streams. Much data exist to support the position that aquatic life uses should be maintained in these streams.

Overall, DEQ should consider potential impacts to federally listed species and/or designated critical habitat early in the amendment planning process (list of species and designated critical habitat provided).

AGENCY RESPONSE: The agency response to the public comments is that we implemented the participatory approach and convened a technical advisory committee to advise staff on these amendments. The staff also drafted amendments that they believe to be environmentally protective, yet flexible enough to relieve some regulatory impact. Specifically, DEQ adopted the EPA 1999 freshwater ammonia criteria and included the early life stages of fish absent provision that provides some regulatory relief during periods of the year when it is also difficult to remove ammonia. This provision is still protective of aquatic life. DEQ also included a statement that this provision must protect endangered and threatened species to address that concern. DEQ also included a site-specific criterion for the tidal freshwater Potomac River in response to a specific request from those localities.

Although there was a great deal of comment, both for and against recreational use designation changes, DEQ included the new bacterial indicators statewide and did not propose any use designation changes. Currently all state waters are designated for primary and secondary contact recreation. However, the agency believes that a less burdensome alternative exists that is protective of actual and existing uses and should be further discussed during a future rulemaking. This alternative is that of a sole secondary contact recreational use designation in some select streams. Secondary contact as a sole recreational use would be appropriate in streams where the physical and chemical characteristics do not allow for immersion and the stream is inaccessible to children and adults. Many of these types of streams are in remote agricultural areas where it is infeasible and cost prohibitive to protect a stream for full body immersion (i.e. primary contact). Another example where a secondary contact recreation use may be applicable is in cases where wildlife is causing the bacteria criteria to be exceeded. The identified source of contamination, wildlife, is desirable but the levels of bacteria are too high to allow the primary use to be met. However, this alternative of secondary contact as a sole recreational use was not proposed because staff determined that this issue needed further discussion and communication with the general public and interest groups to allow for a more complete understanding of the issue.

Clarity of the Regulation

Please provide a statement indicating that the agency, through examination of the regulation and relevant public comments, has determined that the regulation is clearly written and easily understandable by the individuals and entities affected.

Through examination of the regulation and relevant public comments, the agency has determined that the regulation is clearly written and easily understandable by the individuals and entities affected. The office at this agency responsible for writing these amendments (Water Quality Standards and Biological Monitoring Programs unit in the Office of Water Quality Programs) also asked staff outside of the office to review the amendments for clarity and consistency with other programs.

Periodic Review

Please supply a schedule setting forth when the agency will initiate a review and re-evaluation to determine if the regulation should be continued, amended, or terminated. The specific and measurable regulatory goals should be outlined with this schedule. The review shall take place no later than three years after the proposed regulation is expected to be effective.

The State Water Control law at § 62.1-44.15(3a) states that the Board shall, at least once every three years hold hearings for the purpose of reviewing the existing standards of quality, and, as appropriate adopt new standards or modify, or cancel existing standards. The regulatory goals associated with this regulation would be implemented via Virginia Pollutant Discharge Elimination System permits that are environmentally protective and based on the most recent science. Other goals will be seen in the publication of a new impaired 303(d) waters list that reflects this new science.

Family Impact Statement

Please provide an analysis of the proposed regulatory action that assesses the potential impact on the institution of the family and family stability including the extent to which 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 development of water quality standards is for the protection of public health and safety, which has only an indirect impact on families.