UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
WATER

Mr. Ronald F. Poltak
Executive Director
New England Interstate Water Pollution Control Commission
116 John Street
Lowell, Massachusetts 01852-1124

Dear Mr. Poltak:

Thank you for your January 3, 2011 letter expressing concern about the Environmental Protection Agency's (EPA or Agency) emphasis on state adoption of numeric nutrient criteria for both nitrogen and phosphorus, and EPA's position on independent applicability when assessing for use attainment and listing waters for nutrient impairment. EPA appreciates and recognizes the important efforts that states in EPA Regions I and II have taken to address nitrogen and phosphorus pollution, and I hope that this letter responds to your questions.

Nitrogen and phosphorus pollution poses a significant water quality and public health concern across the United States, impacting water supplies, aquatic life, and recreational water quality. EPA's regulations at 40 CFR 131.11 specify that criteria "must contain sufficient parameters or constituents to protect the designated use." Therefore, EPA considers state adoption of numeric criteria for nitrogen and phosphorus, the causal parameters directly responsible for eutrophication in immediate and/or downstream waters, a priority. Adoption of numeric criteria for nitrogen and phosphorus will facilitate and expedite the protection of waters by assisting states in identifying and listing impaired waters, developing total maximum daily loads, and writing National Pollutant Discharge Elimination System permits. Numeric criteria for nitrogen and phosphorus can also further improve water quality by assisting nonpoint sources in best management practice implementation.

In your letter, you propose that states should target only the limiting nutrient parameter -- either nitrogen or phosphorus -- unless it is demonstrated that both are the cause of non-attainment. EPA believes the adoption of numeric criteria for both nitrogen and phosphorus is necessary since generalizations about the limiting nutrient are not always appropriate. For example, lakes are not always phosphorus-limited and estuaries are not always nitrogen-limited, and the limiting nutrient in a waterbody or watershed often fluctuates seasonally and/or spatially. Additionally, to meet the requirements of 40 CFR 131.10(b), a state "...shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters." Since either or both nitrogen and phosphorus can be the direct cause of impairment in either near-field or downstream waters, states should adopt numeric criteria for both parameters. To be consistent with 40 CFR 131.10(b), states should ensure and demonstrate how the in-stream numeric criteria for nitrogen and phosphorus would be protective of downstream waters.

States may assess waters for nutrient response parameters (e.g., chlorophyll-a, Secchi depth, dissolved oxygen) in conjunction with nitrogen and phosphorus; however, relying solely on a response parameter and/or biological assessment to determine impairment may not sufficiently protect all waters. Assessing waters by evaluating the pollutants directly causing impairment (nitrogen and phosphorus) helps ensure protection of both near-field and downstream waters, and also helps prevent degradation of water quality. Some waterbodies may not exhibit a local response to nitrogen and phosphorus loading due to site-specific characteristics (e.g., turbidity limits light availability and therefore primary production), the season (e.g., lower winter temperatures limit productivity), or the natural lag-time between nitrogen and phosphorus loading and a biological response. Even when a local response has not been clearly demonstrated, these waters may be discharging nitrogen and phosphorus loads to downstream waters that may exhibit a response to nitrogen and phosphorus. EPA recognizes that there is analytical, spatial, and temporal variability associated with environmental data, that should be considered in deriving numeric criteria for nitrogen and phosphorus. EPA can work with states to adjust the state-adopted causal parameter criteria to account for site-specific conditions that continue to assure attainment of applicable water quality goals.

Your letter proposes an integrated approach to assess waters for nutrient impairment, in which a waterbody would not be listed as impaired until after a nutrient response or impact is observed, even if nitrogen and/or phosphorus concentrations exceed the relevant standard. The Agency's primary concern with this approach is that waiting for visible algal growth or an alteration in the biological community ensures that the designated use is already impaired before action is taken to reduce nitrogen and phosphorus loadings. It takes a significant amount of time and resources for a waterbody to recover once visible signs of nitrogen and phosphorus enrichment are demonstrated. Assessing for nutrient causal parameters, and implementing the necessary controls if the causal criteria values are, or have the potential to be, exceeded, will help prevent a nutrient response. Furthermore, states must consider all relevant standards in assessments, in order to be consistent with Clean Water Act Section 303(d)(1)(A) which states that "each state shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters." EPA provides states flexibility in adjusting the frequency and duration components of numeric nutrient criteria, and is amenable to working with states to develop a scientifically defensible approach that incorporates nitrogen and phosphorus numeric criteria, nutrient response parameters, and where appropriate, biological assessments, is protective of near-field and downstream waters, and is consistent with the Clean Water Act and its implementing regulations.

EPA adheres to the Clean Water Act and its implementing regulations when reviewing new or revised water quality standards. Therefore the Agency encourages states to be in frequent communication with EPA throughout the criteria derivation process to allow for early opportunities for guidance and comments on the state's approach. EPA regulations at 40 CFR Part 131.6(b) provide that states must submit to EPA the "methods used and analyses conducted to support water quality standards revisions." States are afforded flexibility in how they derive numeric nitrogen and phosphorus criteria, and assess waters for use attainment. Importantly, the methods used and rationale must be scientifically sound, as well as clearly and thoroughly described and documented in the water quality standards submission or supporting documentation. A state's numeric nutrient criteria must protect the water's biological and chemical characteristics, ensuring that the water achieves its most sensitive designated use, as described in 40 CFR Part 131.11. Further, since designated use protection is largely contingent

upon a criterion's duration and frequency components, EPA regards these components as key to a complete water quality standards submission.

I appreciate your interest in addressing nitrogen and phosphorus pollution issues in Regions I and II, and taking the time to express your views and those of the New England Interstate Water Pollution Control Commission. EPA looks forward to continuing to work with states and learn from their experiences in developing and adopting appropriate numeric criteria for nitrogen and phosphorus. Again, thank you for your letter.

If you have additional questions or concerns please contact me or Ephraim King, the Director of Office of Science and Technology, at 202-566-0430, king.ephraim@epa.gov.

Sincerely,

Nancy Stoner
Acting Assistant Administrator