Fiscal Year 2007 Work Plan
Water Quality Academic Advisory Committee

Prepared for the

Virginia Department of Environmental Quality
Office of Water Quality Programs

Submitted by

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I. FRESHWATER NUTRIENT CRITERIA

Goal and Objectives

The AAC goal for FY07 activities is to continue its work on freshwater nutrient criteria for streams and rivers. These activities will build on AAC work that was initiated during FY06. The major objective of the FY07 work plan is to provide assistance to the DEQ Office of Water Quality Programs in the development of freshwater nutrient criteria for Virginia's wadeable and nonwadeable streams and rivers. Specific objectives of the AAC FY07 work plan are:

Objective 1: Refine criteria development approaches for localized and downstream effects in wadeable streams recommended in the FY06 AAC report.

Objective 2: Initiate discussions on nonwadeable streams with intentions to further advance the AAC recommendations in FY 2008.

Objective 3: Participate in periodic meetings and conference calls with DEQ staff to discuss tasks and participate in various forums as requested by DEQ.

Work Plan

Objective 1: Refine criteria development approaches for localized and downstream effects in wadeable streams recommended in the FY06 AAC report.

Task 1
Analyze DEQ and other data to identify ranges of nutrients and other chemical, habitat, and physical parameter values associated with "impaired" and "non-impaired" measurements that could be used in a screening hierarchy. Specifically recommend N and/or P concentration screening values within the context of a staged approach that considers additional factors in determining whether or not designated use impairment has occurred. Data to be analyzed include chemical monitoring data in combination with other measurements that may indicate presence or absence of biological impairment (i.e., benthic macroinvertebrate surveys, diurnal DO, periphytic algae, etc.), such as:

a. DEQ biological and chemical monitoring sites where sites are co-located within a short distance on the same stream segment, with no major tributaries intervening. [Utilizing data and results to be provided by DEQ]

b. DEQ ambient monitoring sites where benthic macroinvertebrate surveys have been conducted in response to an exceedance of the current TP screening value. [Utilizing data and results to be provided by DEQ]

c. DEQ probabilistic monitoring data.
[AAC has 2001-2004 data in hand, can utilize additional data if provided by DEQ]

d. Completed TMDL studies that were conducted in response to nutrient-related impairments. [Utilizing completed TMDL reports and any relevant data that was not included in those reports and can be provided by DEQ]

e. Data from other studies, e.g., the 1980s Technical Advisory Committee study recommending nutrient screening values, the study conducted by Philadelphia Academy of Sciences which was completed in 2005, the EPA funded MD/USGS stream study (if study results becomes available to AAC), and other pertinent studies from the AAC literature review documents. Also review standards suggested in other temperate forest region states.

Task 2
Evaluate the screening hierarchy, utilizing the DEQ ambient chemical monitoring and biological monitoring databases from co-located stations to evaluate the implications of such a hierarchy on additional monitoring that might be required.

Task 3
Develop a pilot application of the load duration approach at 4 or 5 locations within a smaller basin, possibly the Rappahannock, to identify more specifically the issues that might be involved with flow estimation at DEQ sites without flow measurements and their translation into load thresholds for related 2010 Cap Load allocations.

Task 4
Initiate discussion on how the above approach might be applicable to downstream loading criteria for the other non-Bay major drainages in the state – Albemarle/Pamlico Sound (NC), Big Sandy (KY), New River (WV), and Upper Tennessee (TN).

Objective 2: Initiate discussions on nonwadeable streams with intentions to further advance the AAC recommendations in FY 2008.

a. Convene a small group of participants with expertise in several disciplines (fish, algae, drinking water, DEQ data retrieval, etc.) in the Richmond area.
b. Discuss approaches, data and monitoring needs for developing nutrient criteria in non-wadeable streams and rivers. Discussion topics will include but not limited to response variables, localized effects vs. downstream loading, how to define "impairment of designated uses" and thresholds.

Objective 3: Participate in periodic meetings and conference calls with DEQ staff to discuss tasks and participate in various forums as requested by DEQ.

<u>General AAC-DEQ Meetings (tentative dates)</u>
Meeting 1. Early – Mid-August. Discuss the general outline of work plan and tasks.
Meeting 2. Early – Mid-March. Discuss the outline of final report.

Reporting Schedule

Draft Report – December 30, 2006
Review of Draft Report – January 1, 2006 – March 31, 2006
Final Report – June 15, 2006

Deliverables

Reports pertinent to Objectives 1 and 2 described above.