Fiscal Year 2011 Work Plan
Water Quality Academic Advisory Committee

Development of Water Quality Criteria for Virginia

Prepared for the

Virginia Department of Environmental Quality
Office of Water Quality Programs

Submitted by
Stephen H. Schoenholtz
Director and Professor
Virginia Water Resources Research Center
210 Cheatham Hall
Virginia Tech
Blacksburg, VA 24061-0444

Phone: (540) 231-0711
Email: Stephen.schoenholtz@vt.edu

Project Duration: July 1, 2010-June 15, 2011

Fiscal Year 2011 Academic Advisory Committee

Stephen Schoenholtz, Virginia Water Resources Research Center, Chair
E.F. Benfield, Virginia Tech
Paul Bukaveckas, Virginia Commonwealth University
Greg Garman, Virginia Commonwealth University
Carl Herschner, Virginia Institute of Marine Science
Golde Holtzman, Virginia Tech
Howard Kator, Virginia Institute of Marine Science
Winston Lung, University of Virginia
Leonard Shabman, Resources for the Future
Leonard Smock, Virginia Commonwealth University
Kurt Stephenson, Virginia Tech
Gene Yagow, Virginia Tech
Carl Zipper, Virginia Tech

DEVELOPMENT OF WATER QUALITY CRITERIA FOR VIRGINIA

Goals and Objectives

The Academic Advisory Committee (AAC) will continue to provide assistance to the Virginia DEQ in developing a scientifically sound and workable approach to water quality criteria for Virginia. The goal of FY2011 AAC activities is to continue work on water quality criteria and to build on AAC accomplishments achieved during FY2006-2010.

The major objective for FY2011 activities of the AAC is to provide assistance to the DEQ Office of Water Quality Programs for continued development and refinement of water quality criteria for Virginia. Specific tasks to be accomplished and task leaders for FY2011 are described below in the Work Plan.

Work Plan

Task 1. Wadeable Streams Nutrient Criteria Development (Carl Zipper, Golde Holtzman and other AAC member(s) as necessary)

Continue activities as needed to investigate feasibility of "Screening Value Approach" for nutrient criteria in freshwater wadeable streams, and to identify Observable Effect Concentration and No Observable Effect Concentration values for application within that approach.

1. Work with DEQ Biological Monitoring Staff as needed to continue trial implementation of visual assessment procedure:

   - Conduct a final analysis of 2009 visual assessments, when a complete set of associated biological monitoring data become available.

   - Conduct analysis of 2010 visual assessments (to be compiled using 2010-revised visual assessment form) as per availability of DEQ biological and ambient monitoring data prior to the annual AAC/DEQ meeting.

   - Determine efficacy of visual assessment for inclusion as part of criterion, criteria implementation, or as an assessment tool.

2. Continue analyses of DEQ probabilistic monitoring data as needed to identify screening values derived via "reference filtering" of that dataset:

   - Update analysis conducted for 2010 report, using updated urban-land estimates to be provided by probabilistic monitoring staff; best professional judgments of DEQ biological monitoring staff concerning validity of

"reference" classifications; and incorporating 2009 probabilistic monitoring results if available.

- Work with DEQ monitoring staff to enable enhanced monitoring of selected reference sites, as identified in 2010 analysis, by identifying and advising on prioritization of those sites.

3. Update 2010 analysis that identified potential TN and TP critical values based on probability of impairment at equal or greater concentrations by incorporating 2010 ambient and 2009 probabilistic monitoring data (if available).

4. Update 2010 analysis of potential demands by screening value approach on DEQ monitoring resources, if additional data become available to enable more complete or enhanced analysis (e.g. proportion of DEQ mountain and piedmont stream monitoring sites that can be usefully considered as "wadeable;" proportion of sites potentially assessed visually if significant revision appears justified based on Task 1).

Data to be requested from DEQ by early 2011, prior to annual AAC/DEQ meeting:

- Visual assessment results (DEQ Contact: Aimee Budd): These results were entered from the scanned data forms manually by the investigator in 2010. If an electronic data entry process can be established for these data (as discussed with Roger Stewart), that will be appreciated by the investigator; will benefit DEQ by providing a permanent record of the activity; and will improve data accuracy by avoiding possibility of transcription error.
- Best professional judgment evaluation of reference sites identified in 2010 analysis, as needed to exclude certain sites from the "reference" classification (DEQ contact: Jason Hill)
- Ambient monitoring data: Identical data structure as received in March 2010; new data request will be for calendar Years 2008-2009-2010, combined (DEQ Contact: Roger Stewart).
- EDAS Data: Identical data structure as received in March 2010; new data request will be for calendar Years 2008-2009-2010, combined (DEQ Contact: Aimee Budd).
- Probabilistic Monitoring Data: 2001-2009 data set (if available by early 2011). Updated GIS layer (primarily including % Urban Land Use) as it becomes available. (DEQ Contact: Jason Hill).

Ambient, EDAS, and Probmon data should be sent as multiple-year, combined data sets, and not as additional-year supplements, so as to avoid complications and potential errors. If the additional year's data alone were to be provided, the resultant need to join "new" with "old" data for extended analysis would create both unnecessary complication and potential for errors.

Task 2. Class VII Dissolved Oxygen Narrative Criterion Alternative (Greg Garman, Len Smock, and other AAC member(s) as necessary)

Development of community-level biological criteria (identification and maintenance of a blackwater guild) for Class VII waters to replace narrative dissolved oxygen standard. Guild metrics along with INSTAR and ProbMon databases to identify whether or not aquatic life uses are met for Class VII waters in VA and provide DEQ with recommendations for implementation.

Task 3. Meetings

3a. AAC members will meet with DEQ water quality standards staff to discuss nutrient criteria development during winter or spring of 2011.

3b. AAC representative(s) will participate in meetings scheduled by DEQ to inform stakeholders of nutrient criteria development progress.

3c. AAC representative will attend the EPA Region 3 RTAG meeting if scheduled in FY11 to present the AAC's findings and recommendations on approaches for Virginia's development of nutrient criteria for freshwater rivers and streams.