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2019 Annual Report of the Nutrient Scientific Advisory Board to the Secretary of the NC Department of Environmental Quality as required by Session Law 2009-216

July 1, 2019

Executive Summary

During its ninth year serving as a guide to the Division of Water Resources Nonpoint Source Planning Program in implementing Existing Development stormwater nutrient rule requirements pursuant to Session Law 2009-216, the Nutrient Scientific Advisory Board (NSAB) continued to meet and assist the division. This annual report recaps the year's activities and was assembled by division staff with guidance, review and approval by the NSAB.

The NSAB met five times over the past year in support of the following rule-related actions:

1. Reviewed nutrient reduction practice documents, providing input on the nutrient credit standards and design specifications for discharging sand filters, street sweeping, and storm drain cleaning.
2. Began formulation of a workgroup to develop Nutrient Data Standards for Stormwater Control Measures.
3. Provided feedback about a NC nutrient credit trading framework.
4. Assisted researchers with a review of modeling plans for Jordan Lake and its watershed being undertaken by the NC Policy Collaboratory.

This report summarizes these activities.

More information on the NSAB's activities, charter, meeting summaries and previous annual reports can be found online at: https://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-scientific-advisory-board.

Table of Contents

I. Introduction

The Nutrient Scientific Advisory Board (NSAB), serving as a guide to the Division of Water Resources (DWR) Nonpoint Source Planning staff, continued to meet and assist the Division during 2018-2019. This annual report to the Secretary of the Department of Environmental Quality was assembled by division staff with guidance, review and approval by the NSAB.

Session Law 2009-216 established requirements for local governments and state/federal entities in the Jordan Lake watershed to reduce nutrient loading from existing developed lands. It also required the establishment of an advisory board to assist the state to identify, review, and refine strategies to reduce nutrient loading in the existing development community of Jordan Lake watershed and other watersheds that may face similar requirements in the future. Its full duties are listed in Session Law found in Section VIII below and include advising the Secretary "on any other issue related to management and restoration of nutrient-impaired water bodies".

In 2010, the Secretary established a 10-member Nutrient Scientific Advisory Board. As specified by legislation, up to six of the board's members are representatives of local governments in the Jordan Lake watershed, while other members represent the conservation community, water quality science, stormwater engineering expertise and the N.C. Department of Transportation. In 2013, the NSAB added an advisor from the Falls Lake watershed to represent local governments subject to a similar set of rules in Falls Lake watershed.

Since its inception, the NSAB has actively assisted DWR to both better define nutrient reduction needs and improve the tools to reduce nutrient loading from existing developed lands. The remainder of this report provides updates on the NSAB's activities over the last year.

II. Nutrient Reduction Practices

As they are approved by DWR, nutrient reduction practices of all kinds are added to the set of options local, state and federal parties may use to achieve nutrient load reductions from existing developed lands.

Staff develops new practice documents using DWR's credit development process; additions to research data; assistance from subject matter experts; discussion, review and advisement by the NSAB; and public comment. Vetted practices are approved by the DWR Director, and added to the initial set approved by the EMC in 2013.

Status:

In the past year, the NSAB has discussed draft credit documents for:

- Street and Storm Drain Cleaning:
  The nutrient accounting for Street and Storm Drain Cleaning has been developed but final crediting of the practice has not yet been agreed upon.
- Discharging Onsite Wastewater Sand Filters:
  Endorsed by the NSAB and subsequently approved by the DWR Director in April 2019.

In the upcoming year, the NSAB is expected to review for potential endorsement, the following nutrient reduction practices, currently in various stages of completion:

- Street and Storm Drain Cleaning
- Forest Preservation
- Malfunctioning Septic Systems
- Riparian Buffer Improvements and Stream Restoration in Developed Areas
- Urban Reforestation
- Wastewater Regionalization
- Wastewater Overtreatment

III. Stormwater Control Measures Nutrient Data Standards Workgroup

In 2019 the NSAB began formulation of a workgroup to develop Nutrient Data Standards for Stormwater Control Measures (SCMs).

Growing interest in finding the most cost-effective nutrient practices has included reevaluation of nutrient values previously established for urban stormwater control measures. This has led to a desire to standardize technical data requirements to support SCM nutrient credit revisions as well as new SCM approvals. This year, the NSAB assisted DWR staff in putting together a workgroup to tackle this need.

The Stormwater Permitting Unit (SPU) of the Division of Energy, Mineral and Land Resources (DEMLR) has authority for establishing and revising the set of acceptable SCMs for post-construction stormwater control. SPU works with stormwater researchers and the DWR NPS Planning Branch to set and revise nutrient credit assignments for these practices. The currently approved set of new development SCMs, including their nutrient crediting specifications, is captured in DEMLR's SCM Crediting Document.

This workgroup would flesh out data standards that would support agency revisions to current SCM credits and credits for new SCMs going forward. The nutrient data standards will be developed from the work of staff, subject matter experts, and stormwater researchers. This workgroup will standardize data evaluation and document the approach for each measure.

IV. Nutrient Credit Trading Discussion

North Carolina has authorized nutrient credit trading through legislation, and forms of trading are in use in nutrient managed watersheds. Staff has been developing a framework to comprehensively explain, and identify options for improving, the current framework. The NSAB has been reviewing and providing input on the current discussion document, and the draft document is available on the NSAB website. The NSAB is the staff's first point of outreach when discussing the trading framework.

V. NSAB Administration

The NSAB was begun in 2010. It's charter, developed in 2017, is found on the NSAB website. The authority of the NSAB is laid out with its establishment in Session Law 2009-216 found in Section VIII below. In 2018, at the request of a member, the NSAB simplified its decision-making process.

VI. Next Year

The NSAB will continue to work on several important tasks in the coming year. Division staff expect to seek the board's endorsement of draft credit proposals for Nutrient Reduction Practices noted above, the Nutrient Credit Trading Framework, and technical policy decisions to be included in an Existing Development Model Program.

VII. Membership

Nutrient Scientific Board Members

	NSAB Position	Member	Organization
1	Local Government Representative	Sandra Wilbur	City of Durham
2		Allison Weakley	Town of Chapel Hill
3		Morgan DeWit [2]	Chatham County
4		David Phlegar	City of Greensboro
5		Josh Johnson	Cities of Mebane and Graham; Towns of Elon and Gibsonville
6		Eric Kulz	Town of Cary
7	Professional or Academic Representative	Michael Burchell	NCSU
8	Professional Engineer	Sally Hoyt	UNC- Chapel Hill
9	NC DOT Representative	Andy McDaniel	NC DOT
10	Conservation Organization Representative	Peter Raabe	American Rivers
11	Falls Lake Watershed Representative [1]	Forrest Westall	Upper Neuse River Basin Association

Session Law 2009-216 (4)(a) listed in Section VIII calls for the establishment of the NSAB and stipulates five to 10 members with expertise or interests listed in the table above.

[1] In 2013 the NSAB chose to add an advisor to the board to represent the interests of Falls Lake Watershed local governments.

[2] In 2018, the Secretary of DEQ appointed this new member to the NSAB.

VIII. Establishment, Duties, and Authority of the NSAB

SESSION LAW 2009-216
Section 4.(a) - (c)

AN ACT TO PROVIDE FOR IMPROVEMENTS IN THE MANAGEMENT OF THE JORDAN WATERSHED IN ORDER TO RESTORE WATER QUALITY IN THE JORDAN RESERVOIR.

The General Assembly of North Carolina enacts:

SECTION 4.(a) Scientific Advisory Board for Nutrient-Impaired Waters Established. – No later than July 1, 2010, the Secretary shall establish a Nutrient Sensitive Waters Scientific Advisory Board. The Scientific Advisory Board shall consist of no fewer than five and no more than 10 members with the following expertise or experience:

(1) Representatives of one or more local governments in the Jordan Reservoir watershed. Local government representatives shall have experience in stormwater management, flood control, or management of a water or wastewater utility.

(2) One member with at least 10 years of professional or academic experience relevant to the management of nutrients in impaired water bodies and possessing a graduate degree in a related scientific discipline, such as aquatic science, biology, chemistry, geology, hydrology, environmental science, engineering, economics, or limnology.

(3) One professional engineer with expertise in stormwater management, hydrology, or flood control.

(4) One representative of the Department of Transportation with expertise in stormwater management.

(5) One representative of a conservation organization with expertise in stormwater management, urban landscape design, nutrient reduction, or water quality.

SECTION 4.(b) Duties. – No later than July 1, 2012, the Scientific Advisory Board shall do all of the following:

(1) Identify management strategies that can be used by local governments to reduce nutrient loading from existing development.

(2) Evaluate the feasibility, costs, and benefits of implementing the identified management strategies.

(3) Develop an accounting system for assignment of nutrient reduction credits for the identified management strategies.

(4) Identify the need for any improvements or refinements to modeling and other analytical tools used to evaluate water quality in nutrient-impaired waters and nutrient management strategies.

SECTION 4.(c) Report; Miscellaneous Provisions. – The Scientific Advisory Board shall also advise the Secretary on any other issue related to management and restoration of nutrient-impaired water bodies. The Scientific Advisory Board shall submit an annual report to the Secretary no later than July 1 of each year concerning its activities, findings, and recommendations. Members of the Scientific Advisory Board shall be reimbursed for reasonable travel expenses to attend meetings convened by the Department for the purposes set out in this section.