

U.S. states, EPA coordinating on best approaches to nutrients permitting

ACWA, WEF join with U.S. EPA to host seven workshops

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In early December 2017, representatives from 24 state clean water programs involved in managing nutrient pollution as well as headquarters and regional staff from the U.S. Environmental Protection Agency (EPA) met for 3 days to learn, discuss, and confer on a broad range of nutrients permitting issues. Presentation topics included nutrient removal technologies, nutrients reduction strategies, variances, water quality trading, watershed-based and adaptive management approaches, integrated planning, and more. Participants also had the opportunity to work in small groups on three specific issues:

- nutrient removal technology implementation at water resource recovery facilities (WRRFs),
- overcoming impediments to permitting for nutrients, and
- integrating total maximum daily loads (TMDLs) with permits.

The workshop, held in Boise, Idaho, was the first in a series of seven meetings to be held between 2017 and 2021 by the Association of Clean Water Administrators (ACWA; Washington, D.C.), with support from the Water Environment Federation (WEF; Alexandria, Va.), as part of a cooperative agreement with EPA. The workshops are intended to assist with achieving several objectives and environmental outcomes by bringing together state, tribal, territorial, federal, and other stakeholders. The goals are to identify challenges and barriers to nutrient permitting program implementation, highlight opportunities for program improvement and enhancement, showcase innovations and achievements, and identify and attempt to solve the most intractable issues.

States employ various approaches to nutrient permitting

A major takeaway from the Boise workshop was that states manage nutrient pollution through permitting in myriad ways. For example, Montana, Iowa, and North Carolina approach nutrients permitting via numeric nutrient criteria, performance-based actions, and water quality trading, respectively.

Montana. Montana adopted numeric nutrient criteria in 2014 to combat nutrient pollution. The development process for the criteria included three components:

- identifying geographic zones for specific criteria,
- understanding the cause-effect relationships between nutrients and beneficial uses, and
- characterizing water quality for reference sites.

Because nutrient concentrations vary naturally, Montana tested different geospatial frames and reference sites for nutrient concentration variation. To develop permit limits based on the criteria, Montana used EPA's 1991 *Technical Support Document for Water Quality-based Toxics Control*. Ongoing work in Montana will lead to other large-river nutrient standards and additional site-specific wadable stream standards.

Iowa. Iowa employs a nutrient reduction strategy to combat nutrient pollution. In Iowa, numeric nutrient criteria development presents significant challenges. Therefore, in lieu of adopting numeric nutrient criteria, Iowa hopes to achieve nutrient load reductions through performance-based actions. Working closely with the regulated community to adopt performance-based discharge limits, Iowa establishes limits based on the effect of the pollutant in the water and the feasibility and reasonableness of treating the pollutant. Iowa focuses on major and minor municipal WRRFs and industries that treat more than 3.8 million L/d (1 mgd). Under this approach, there has been considerable progress in nutrient pollution reductions at point sources throughout the state.

North Carolina. North Carolina uses water quality trading to combat nutrient pollution. North Carolina implements nutrient trading programs in specific watersheds where impairments have been identified. In these watersheds, point sources have a collective nutrient allocation (“bubble”) permit. Pursuant to this joint compliance approach, allocation is sold or leased among these facilities through an independently-operated compliance association. So long as the collective cap is met, individual nutrient limits are not enforced.

States and EPA offer solutions to complex issues

At the Boise workshop, participants focused on the three issues mentioned above (technology implementation, permitting impediments, and TMDL integration).

Technology implementation. Participants named some of the significant barriers to technology integration as affordability, resource constraints, operator expertise, and political will. They also identified some solutions, including targeted technical training and greater public education on the need for such technologies at WRRFs.

Permitting impediments. Regarding impediments to permitting, participants identified affordability, lack of data, and resource constraints as challenges. One solution identified to mitigate these problems included changing the 5-year National Pollutant Discharge Elimination System (NPDES) permit cycle to 10 years. Other solutions included increasing flexibilities for states, implementing stronger regulations for nonpoint sources, integrated planning to identify issues and priorities for regulators and the regulated community, increased support and technical training, and public education.

TMDL integration. In the final session on integrating nutrients TMDLs with permits, participant attendees acknowledged that communication gaps are a major barrier to adequate integration. They identified the existence of communication gaps between regulators and stakeholders and with permitting and TMDL staff. Many participants described better communication among the various interested parties as an important goal for resolving this challenge.

Future meetings

ACWA and WEF plan to tackle these three issues and more in greater detail at the next six nutrients permitting workshops. These workshops provide states and EPA, as coregulators, the opportunity to identify and seek solutions for the diverse problems associated with nutrient pollution. In 2018, workshops are planned for summer and autumn; visit www.acwa-us.org for more details on these events.

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