



# North Carolina Statewide Approach

Basinwide Planning and Permitting

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NC Division of Water Quality

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## Overview

The North Carolina Division of Water Quality (DWQ) employs a basinwide approach to protecting the state's water resources; it undertakes planning, monitoring, modeling, permitting, and compliance assessment activities at the basin scale. DWQ prepares basinwide plans on a 5-year cycle. The purpose of the plans is to frame a number of water quality factors, including current conditions, potential and existing threats, short- and long-range protection goals, and management options for both point and nonpoint sources of pollutants.

This case study focuses on the history of North Carolina's basinwide planning and permitting program and the planning process used along with the benefits of implementing that process.

## Background

In an effort to improve the effectiveness and efficiency of the state's water quality programs, DWQ developed a draft program plan using a basinwide approach. The plan evolved from a series of DWQ staff meetings and facilitated workshops in 1987 through 1989. The draft plan was presented in a public hearing and was reviewed by the U.S. Environmental Protection Agency (EPA). DWQ subsequently implemented a basinwide permitting schedule in 1990 and published a final, detailed, basinwide program document in 1991. The program document, titled *North Carolina's Basinwide Approach to Water Quality Management: Program Description*, presented the state's original objectives and rationale for basinwide management and outlined the proposed procedures and time schedule for implementing the program. The program has subsequently evolved and no longer operates as originally described. The most recent information on the program is available on the Basinwide Planning Program Web site.

<p><b>Watershed:</b> <i>North Carolina Statewide Watershed Approach</i></p>
<p><b>Watershed Approaches Used:</b></p> <ul style="list-style-type: none"> <li>• <i>Monitoring</i></li> <li>• <i>Basin planning</i></li> <li>• <i>Synchronized permitting</i></li> </ul>
<p><b>Stakeholders:</b></p> <ul style="list-style-type: none"> <li>• <i>General public</i></li> <li>• <i>Watershed organizations</i></li> <li>• <i>Local agencies</i></li> <li>• <i>Soil and water conservation districts</i></li> <li>• <i>Cooperative extension</i></li> </ul>
<p><b>Stakeholder Involvement Techniques:</b></p> <ul style="list-style-type: none"> <li>• <i>Citizen's guide to water quality programs</i></li> <li>• <i>Draft plan review</i></li> <li>• <i>Public meetings</i></li> <li>• <i>Web-site review and comment</i></li> </ul>

## Strategies

### Planning Process

North Carolina's basinwide planning process is non-regulatory, and is coordinated primarily by DWQ's Water Quality Branch staff. The Water Quality Branch houses several sub-offices, which include: Planning, Environmental Sciences, Point Sources, and Non-Dischargers. The goals of the basinwide planning process are to identify water quality problems and restore full uses to impaired waters; identify and protect high-value resource waters; and protect unimpaired waters while allowing for reasonable economic growth. To accomplish these goals, DWQ

has built into the approach the development of appropriate management strategies to protect and restore water quality, requirements to assure an equitable distribution of waste assimilative capacity for dischargers, and requirements to improve public awareness and involvement in the management of surface waters. The planning process includes a synchronized 5-year cycle of monitoring, planning, and permitting for each of the 17 watersheds in the state.

The planning process is divided into three phases: Phase I (years 1 and 2 of 5-year cycle), Phase II (years 2 and 3), and Phase III (years 3–5). In Phase I, DWQ implements the current basinwide plan in concert with key stakeholders. The state may collect the following types of data during this phase: ambient water quality monitoring, biological monitoring, and other special study data.

During Phase II, DWQ analyzes the data collected in Phase I to support or reject existing use ratings for the basin. DWQ performs the following use assessments: aquatic life, recreation, fish consumption, water supply, and shellfish consumption. The state then compiles the use assessment data into a Basin Assessment Report. Preliminary pollution control strategies are developed during this phase through coordination with local stakeholders and other agencies, such as Soil and Water Conservation Districts (SWCD), the Council of Governments, the North Carolina Cooperative Extension Service, local arms of the Natural Resources Conservation Service (NRCS), and other stakeholder groups.

During the final phase of the basinwide planning process (years 3–5), DWQ develops a draft basinwide plan on the basis of water quality data, use-support ratings, and the recommended strategies for controlling pollution. After the draft plan is approved by the North Carolina Environmental Management Commission for release to the public, DWQ circulates the draft plan for review and presents it to the public at public meetings at least one year before completion. The draft plan is open for public comment for at least 30 days. DWQ then revises the plan accordingly and presents it to the Environmental Management Commission for approval. The plans are to be completed 4 to 6 months before the scheduled date for basinwide permit renewals so that the information contained in the plans can be used during the renewal process. After the plans are approved, DWQ coordinates with other agencies and local interest groups to prioritize implementation actions outlined in the plans. While DWQ coordinates the development of the plans, it relies on local agencies and other stakeholders to implement the plans.

Each basin plan includes the following elements:

- ◆ A description of the planning approach used
- ◆ An overview of the watershed (i.e., hydrology, land uses, local governments' jurisdictions)

- ◆ Summaries of monitoring and use support ratings
- ◆ Recommendations from previous plans, status and explanation of achievements and goals or recommendations for the next planning cycle
- ◆ Current and future water quality initiatives and implementation success stories by agency and corporate, citizen, or academic groups

DWQ established a program coordinator position to begin implementing the basinwide approach in 1992. DWQ completed its first basinwide plan (Neuse River) in February 1993 and began issuing National Pollutant Discharge Elimination System (NPDES) permits under the plan in April 1993. DWQ developed the first-round plans for each of the 17 watersheds in the state in 1998. The basinwide planning process in the Neuse and Tar-Pamlico watersheds confirmed that significant, long-term water quality impacts were occurring. Because of these determinations, DWQ applied the Nutrient Sensitive Waters status to these waters and developed nutrient strategy rules.

### Program and Resources

While the basinwide approach was conceived by the DWQ staff and not as a result of any regulation or state policy, the North Carolina legislature passed a bill in 1997 making the program a requirement. The Clean Water Responsibility Act (House Bill 515) required DWQ to continue implementing the basinwide management program; however, the bill did not establish or provide financial or staff resources for the program.

Originally, DWQ employed one planner to manage the program. Now, the program has four full-time basin planners with each planner being responsible for four to five river basins. Each planner coordinates with other DWQ staff to provide monitoring and modeling data throughout the planning process. In addition, the planners develop the use support ratings for the watersheds and confirm with other sections that the ratings are consistent with other staff research and programs. Each planner personally drafts the basin plan and coordinates the review and approval process.

### Permitting Process

Basin planners meet with regional permit writers every 6 months at *implementation meetings* to discuss any new issues related to dischargers (i.e., noncompliance, treatment upgrades) and to determine how dischargers can impact use support ratings. Planners also review discharge monitoring reports. Permit writers use the plans during permit renewal to determine if any changes need to be made to the permit provisions, such as effluent limitations or facility monitoring requirements.

## Public Involvement

In 2000 DWQ released the document, *A Citizen's Guide to Water Quality Management in North Carolina*, to better explain the basinwide planning process to the public. DWQ held public workshops when developing the first cycle of basinwide plans. Now DWQ solicits public input more consistently through continuous coordination with local watershed groups, SWCDs, cooperative extension agencies, federal agencies, and others. DWQ informally circulates the draft among these groups prior to it being formally submitted to the Environmental Management Commission for release to the public at large. DWQ advertises the release of the plan in newspapers, through direct mailings, and on its Web site. DWQ distributes the draft plans via its Web site, compact disc, and hard copy. In January 2007, a second edition of the document, *Basinwide Planning Program: Supplemental Guide to North Carolina's Basinwide Planning: Support Document for Basinwide Water Quality Plans* was released. It is intended to provide general information about water quality issues in the State of North Carolina. It also provides updated program descriptions and identifies several best management practices (BMPs) that protect water quality.

## Factors Considered During Development

According to the Program Description, the rationale for the basinwide approach was to achieve improved efficiency, increased effectiveness, and consistency and equitability.

### Improved Efficiency

The basinwide approach was designed to increase administrative efficiency through targeting staff resources, funding, information transfer and database management, and consolidating survey and reporting requirements mandated by the Clean Water Act.

The approach was designed to focus travel, sampling and public involvement efforts in one part of the state at a given time. This resource concentration would then increase sampling coverage and public participation. The basinwide approach also called for a synchronization of NPDES permits issued by watershed which would balance the number to be issued each year and allow waste load allocations to be distributed to point source dischargers at the same time in watersheds where total maximum daily loads (TMDLs) were developed. Finally the basinwide process was designed to minimize the redundancy of Clean Water Act reporting and survey requirements such as the following:

- ◆ **Section 210**—Annual survey to determine efficiency of treatment works operation and maintenance
- ◆ **Section 302**—requirement to develop “alternative effluent control strategies to control point sources for the restoration of water quality to the desired level”

- ◆ **Section 303(d)**—requirement to establish TMDLs for a priority list of nonattainment waters
- ◆ **Section 303(e)**—calls for area-wide planning process which considers point and nonpoint source pollutants
- ◆ **Section 305(b)**—requires biennial reporting on the use support, status of surface waters and the achievements of the regulatory program and general assessment guidelines
- ◆ **Section 314 (a)**—requires biennial reporting on the nutrient status of lakes
- ◆ **Section 319(a)**—requires State Management Plans for identification and priority setting of waters impacted by nonpoint source pollution

The North Carolina program was designed to consolidate these and other requirements into the basinwide planning process.

### Increased Effectiveness

The second basis for initiating the basinwide approach in North Carolina was the desire to increase the overall effectiveness of existing programs by becoming more consistent with basic ecological principles of watershed management. The approach requires that linkages between aquatic resources and point and nonpoint sources and the potential impacts from their interaction are considered. Existing programs (i.e., monitoring, regulatory programs, bioassessments, modeling, compliance and enforcement) would be combined into a comprehensive planning approach. This planning approach would then be formalized into the paradigm of the Division. Several new initiatives were also proposed in the Program Description that would increase the effectiveness of water quality assessment and management. These initiatives, proposed in 1991, were as follows:

- ◆ Developing basinwide water quality models to address the potential interactive effects of multiple pollutants and dischargers
- ◆ Evaluating trends by basin
- ◆ Establishing TMDLs
- ◆ Developing basinwide plans to address point and nonpoint source pollution
- ◆ Implementing innovative management strategies such as agency banking assimilative capacity, pollution trading, and industrial recruitment mapping

### Consistency and Equitability

Finally, the basinwide planning process was designed to facilitate consistent decision making and focus management

decisions by clearly defining long-term goals. This consistency would then promote equitable distribution of assimilative capacity including potential trading among sources and allowances for future growth. Further, developing plans and presenting them consistently would allow policymakers and the public to better comprehend and evaluate the “background, methods, and rationale for management decisions, thereby creating a more stable foundation for future planning” (Creager 1991).

### **Program Effectiveness**

The basinwide planning process has evolved since its inception, as has the format for the plans themselves. This evolution has resulted in a more effective planning process and a more useful plan format. The DWQ is in the process of completing the third round of basinwide plans, and, through the years, the planning and use support rating process has often provided the impetus for implementation projects by providing a justification for funding (i.e., grants). Planners often help local agencies or watershed groups apply for grant funding and use the findings and assessments included in the plans as the basis for the requests.

Further, according to *A Citizen’s Guide to Water Quality Management in North Carolina*, the goals behind development of the program in 1991 have been realized—improved

efficiency by focusing on one river basin at a time; increased effectiveness because of consistency with basic ecological principles; better consistency and equability during decision making regarding permits and water quality improvement strategies through long range planning, increased public participation in water quality protection programs, and increased integration of point and nonpoint source assessment and management programs. In addition, the approach presents water quality issues in a greater number of management units defined both geographically and temporally. The 5-year planning interval provides a realistic time frame for evaluating the effectiveness of pollution management strategies.

### **Lessons Learned & Next Steps**

According to the supervisor of the Basinwide Planning Unit, Darlene Kucker, the most challenging part of administering the basinwide planning program is also a positive aspect—there are numerous people, groups, and agencies involved in watershed management in North Carolina and each might not have consistent or complementary goals and objectives. It is sometimes difficult to find common priorities and make measurable progress toward achieving those goals. Ideally, Ms. Kucker would like to double the number of planners on her staff to better enable them to engage at the local level and coordinate resources.

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## **Resources**

Creager, C.S. and J.P. Baker. North Carolina Division of Water Quality. 1991. *North Carolina’s Basinwide Approach to Water Quality Management: Program Description*.

North Carolina Division of Water Quality. 2000. *A Citizen’s Guide to Water Quality Management in North Carolina*. <http://h2o.enr.state.nc.us/basinwide/documents/CitizensGuideFirstEdition.pdf>

*Note: All Web references current as of July 6, 2007.*