

The Use of Storm Water Rules to Protect Coastal Waters

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Much of the aesthetic, economic and biological significance of the coastal zone is dependent on the maintenance of high water quality. However, many of the ways in which people enjoy and exploit coastal resources create disruptions in the natural system, jeopardizing the health of the coastal environment. Declines in coastal water quality can have serious repercussions for the ecological integrity of the coastal zone, as well as for the coastal communities that rely on the rich resources found in the zone. In North Carolina, waters that support shellfish beds (SA waters) require the most stringent compliance with water quality standards—standards that are frequently violated.

Although storm water plays an important and indisputable role in declining water quality, it is a very ambiguous culprit. Identifying the exact sources of various pollutants remains problematic. Even when the contaminants are properly pinpointed, managing those sources can prove difficult. Existing legislation clearly prohibits the degradation of water quality, but innovative enforcement and stormwater management techniques have yet to be implemented.

One program undertaken by the Environmental Protection Agency (EPA) has

implemented storm water regulations in two sequential stages. These programs initiate requirements to obtain National Pollution Discharge Elimination System (NPDES) permits, which carry with them specific responsibilities for the permit holder.¹ Perhaps these rules can succeed where other poorly conceived, or, more often, weakly implemented water quality rules have failed. At a minimum, they should encourage us to reconsider current water quality management regimes (as states and dischargers consider their liability under the program); and ideally they would provide the necessary catalyst for improvements in storm water management programs, and, ultimately, coastal water quality.

The NPDES Storm Water Program

Enacted by Congress in 1987 under section 402(p) of the Clean Water Act, management of storm water discharge was to take place in two distinct stages. The first stage, Phase I, began on November 16, 1990. It incorporated municipal separate storm sewer systems (MS4s) serving large or medium sized communities² and storm water associated with industrial activity into the National Pollutant Discharge Elimination System.

As a continuation of the process, the EPA was to submit a report to Congress assessing the remaining sources of discharge and establishing methods to sufficiently control storm water discharges and protect water quality. The EPA was originally scheduled to issue supplemental regulations and to create a comprehensive regulatory program no later than October 1, 1992.³ However, EPA did not fulfill its commitment until recently; Storm Water Phase II Final Rule was signed on October 29, 1999 and first appeared in the Federal Register on

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December 8. The rule took effect on February 7, 2000.

The second stage, Phase II, expands upon the initiatives set forth in Phase I by requiring small MS4s in urbanized areas and construction sites that disrupt between one and five acres of land to participate in the NPDES permitting process.⁴ Phase I MS4s may adopt the more stringent, updated regulations of Phase II, but they are not required to comply with the new guidelines.⁵ In order to satisfy the terms of the NPDES permit, Phase II dischargers must develop and implement a storm water management program comprised of six components:

1—Public Education and Outreach: This control measure has two complementary purposes. First, it is hoped that greater public awareness will result in higher degrees of support and compliance. The public will be more willing to approve funding proposals and volunteer their services if they are supplied with full information about the program and its expected benefits. Also, compliance would likely improve as individuals think about ways in which they might change their own behavior to reduce impacts of storm water runoff.⁶

2—Public Participation and Involvement: A number of benefits could result from increased public participation. For one, involving community members in the decision-making process decreases the probability of opposition or legal disputes. With fewer impediments to the process, implementation of storm water management programs could occur in a more timely fashion. Public involvement could also provide management programs with a number of intangible resources as individuals bring their local expertise, as well as their professional and personal experiences, with them to the process.⁷

3—Illicit Discharge Detection and Elimination: Managers of small MS4s are expected to identify discharges that are not composed entirely of storm water. Non-storm water may enter the system in several ways, including direct wastewater connections, improper oil disposal, laundry wastewaters, and others. Because the separate storm sewer systems are not equipped to accept and discharge water from these other sources, managers should

find ways to eliminate their infiltration into the system.⁸

4—Construction Site Runoff Control: This measure requires programs to control pollutants, particularly sediments, loaded from construction sites that have a disturbed area of greater than or equal to one square acre.⁹

5—Post-Construction Runoff Control: Managers of small MS4s must address the problems associated with post-construction runoff, including both the type and quantity of pollutants that are exposed to storm water for transport and the increased delivery of storm water across impervious surfaces. One of the requirements of this measure is an ordinance that mandates post-construction controls to the "extent allowable under State, Tribal, or Local law."¹⁰

6—Pollution Prevention/Good Housekeeping: This component may prove to be the most important requirement of the Phase II Rule. Under this provision, MS4 operators must evaluate their systems and make changes such that there are reductions in the amount and type of pollution that "(1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of sewer systems."

The ultimate goal of the NPDES compliant storm water management programs is to reduce pollutant runoff. Each minimum control measure requires identification of one or several best management practices that can be implemented to reach each objective. It is important to recognize that these minimum control measures could serve as a starting point for storm water management in communities that would not otherwise be required to participate in the NPDES permitting process. A comprehensive approach that both mitigates the damage of current activities and initiates measures to prevent pollutant loading will prove effective in the coastal zone. Because some level of development along the coast is inevitable, it is important to identify planning and management practices that are most

conducive to reductions in storm water runoff.

The Potential for Phase II

The effectiveness of the Phase II Rule will largely depend on to what extent states choose to apply it. If the state and/or local government takes initiative and applies the requirements of Phase II more broadly, it could be an important tool to protect coastal waters.

NPDES permitting authorities, in this case the State of North Carolina, are not only required to designate MS4s in urbanized areas, but also must consider any other system that adds a large amount of pollutants to a physically interconnected MS4 that has already been regulated under the NPDES Storm Water Program. Other systems are evaluated by the following suggested criteria:¹¹

- *Discharge to sensitive waters
- *High population density
- *High growth or growth potential
- *Contiguity to an urbanized area
- *Significant contributor of pollutants to waters of the United States and
- *Ineffective control of water quality concerns by other programs.

These criteria should not only be applied to MS4s but should also be used to determine the propriety of NPDES permits for other sources that are found to contribute to water quality degradation. The possibility of applying NPDES permits at the community level, perhaps as an oversight of land use plans and other city management proposals, could be an important form of inter-agency enforcement of water quality standards.

Concerned citizens can also influence state oversight by petitioning for stricter controls and invoking the NPDES permit requirement for sources that are not explicitly regulated under Phase II. "Any person may petition the Director to require a NPDES permit for a discharge which is composed entirely of storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States."¹²

It remains to be seen how the Phase II Rule will be implemented in the state of North

Carolina. The NC Division of Water Quality initiated a Storm Water Project that began in April 2000 and will continue throughout the summer.¹³ With the help of a professional facilitator, multiple stakeholders have been invited to voice their concerns, questions and, most importantly, suggestions about compliance with the new rule. The goal of this collaborative project is to "develop a comprehensive stormwater program based upon the most current and best available science." The Department of Environment and Natural Resources (DENR) hopes the sessions will answer the following questions: 1) How can DENR best protect surface waters from adverse stormwater impacts? and 2) What central management elements are needed? These meetings should play an important role in shaping Phase II implementation.

The Future of SA Waters: A Question of Political Will

Storm water is a major contributor to coastal water quality decline. Because its impacts are largely a function of cumulative effects, more comprehensive controls are needed. Perhaps control at the local level contributes to myopic planning and enforcement. Therefore, because water quality is a matter of state responsibility, North Carolina should examine the discretionary authorities provided to it, not only in Phase II, but in other related water quality rules.

Voices from the environmental and scientific communities contend that there are many measures that can and should be taken to protect coastal water quality. Most of these involve employing stringent land use planning rules and implementing Best Management Practices *before* water quality suffers. Waiting until areas are heavily developed and water quality is severely degraded before thinking about the problem is nothing more than an expensive exercise in futility.

In North Carolina, local initiatives can be used to promote positive change in the coastal zone. However, creating and enforcing those initiatives will be a game of political will. State-level agencies in Raleigh are reluctant to become involved in the unpopular task of imposing

zoning requirements and other quality controls on coastal communities. These communities have produced land use plans in accordance with the Coastal Area Management Act (CAMA) in the past. However, the fact that water quality problems persist in SA waters and threaten to make waters unsuitable even for swimming shows that those communities have either insufficiently provided for water quality maintenance or have chosen to disregard their plans. While land use planning falls squarely in the local realm, the responsibility of protecting water quality lies in the hands of the state. This separation of power makes it easy to point fingers, but difficult to establish practices that will maintain and restore SA waters. Many solutions will prove politically difficult in this gray area where federal, state and local authority overlaps—or rather in this case, falls short.

If the state wishes to uphold its responsibility to protect water quality, it must provide incentives for its coastal communities to adopt and enforce land use practices that prevent the creation of extensive networks of impervious surfaces. One powerful incentive may be the issuance of NPDES permits, as allowed under the Phase II Final Rule. However, since many of North Carolina's seaside municipalities will not be automatically designated, the Rule may have limited effect. North Carolina has an opportunity to uphold its legal responsibility to preserve water quality. Issuing NPDES permits would be preferable to waiting for additional storm water-induced violations. In addition to the environmental benefits of better water quality, state and local governments would enjoy the practical benefits of reduced legal accountability for water quality violations and more latitude than would be afforded under more restrictive stipulations.

EPA's stated objective of the Storm Water Phase II Final Rule is to "preserve, protect, and improve" water quality. This objective would be better fortified by explicitly requiring NPDES-compliant storm water programs as a component of approved land use plans. Mandatory issuance of permits and an enforceable schedule for compliance are important steps toward more comprehensive and meaningful regulation.

Strengthening of the storm water rule could be incorporated into revised CAMA land use rules or accomplished elsewhere at the state level. To date, local planners have insufficiently prepared for the effects of storm water pollution, evidenced by developments that have quite literally paved the way for poor coastal water quality.

Many people feel that the Phase II Rule is a positive and important step in storm water regulation. One of greatest benefits of the rule is the necessary re-evaluation of existing policies and programs and incorporation of the Phase II requirements. Even in areas where the NPDES permit will not be invoked, the state may see fit to require the six minimum control measures as a way of ensuring that SA standards are met. Agencies with the specific charge of maintaining coastal water quality would benefit by expanding Phase II-type programs to fulfill their responsibility to protect and restore shellfish waters in compliance with state standards. The Phase II guidelines could be an important set of rules, providing a comprehensive, feasible set of BMPs that are designed to not only resolve existing storm water runoff problems, but also to prevent pollution. Pollution prevention can be achieved through structural best management practices, zoning activities, land acquisition, and perhaps most importantly, through changes in personal philosophy that recognize the role each of us plays in contributing to storm water pollution through our daily lifestyles.^{CP}

Notes

¹ The National Pollution Discharge Elimination System is a program for "issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements." All point sources of pollution must attain or maintain the specific applicable water quality standards of the region in order to receive NPDES permits. The program requires that states issue permits to limit effluents, including the quantity, discharge rate, and concentration of each pollutant. The issuance of NPDES permits usually means a collaboration at the state and federal level. The permits must be consistent with the guidelines of both, but monitoring and compliance requirements may differ. General Services Administration, "Effluent

Limitations and the NPDES.” December 1998.
http://gsa.gov/pbs/pt/call-in/factsheet/1298a/12_98a_13.html.

² “Municipal separate storm sewer” as defined in 40 CFR Chapter 1 § 122.26 (b)(8) is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains). Large communities are those with greater than 250,000 inhabitants; medium sized communities have greater than 100,000 residents and less than 250,000.

³ “The program is required to establish: (1) priorities; (2) requirements for State storm water management programs; and (3) expeditious deadlines.” EPA, “Chapter 4: Management Measures for Urban Areas.” www.epa.gov/OWOW/NPS/MMGI/Chapter4/ch4-1.html.

⁴ Small MS4s are those serving communities of less than 100,000 residents. <http://www.epa.gov/owm/sw/phase2/index.htm> Urbanized areas are defined as “a land area comprising one or more places—central place(s)—and the adjacent densely settled surrounding area—urban fringe—that together have a residential population of at least 50,000 and an overall population density of at least 1,000 per square mile.” Determination of population and density is based on census blocks. “Urbanized Areas: Definition and Description,” EPA 833-F-00-004, Fact Sheet 2.2.

⁵ “Storm Water Phase II Final Rule,” EPA 833-F-00-001, Fact Sheet 1.0, January 2000.

⁶ “Public Education and Outreach Minimum Control Measure,” EPA 833-F-00-005, Fact Sheet 2.3, January 2000.

⁷ “Public Participation and Involvement Minimum Control Measure,” EPA 833-F-00-006, Fact Sheet 2.4, January 2000.

⁸ “Illicit Discharge Detection and Elimination Minimum Control Measure,” EPA 833-F-00-007, Fact Sheet 2.5, January 2000.

⁹ “Construction Site Runoff Control Minimum Control Measure,” EPA 833-F-00-008, Fact Sheet 2.6, January 2000.

¹⁰ “Post-Construction Runoff Control Minimum Control Measure,” EPA 833-F-00-009, Fact Sheet 2.7, January 2000.

¹¹ “Proposed Storm Water Program Coverage for Regulated Small MS4s.” <http://www.epa.gov/owmitnet/sw/ms4/small/coverage/index.html>.

¹² EPA 40 CFR Chapter 1 § 122.26 (f)(2).

¹³ “N.C. Division of Water Quality Stormwater Project.” <http://h2o.ehnr.state.nc.us/>.