

# CRS Report for Congress

Received through the CRS Web

## Water Quality Initiatives and Agriculture

Updated December 20, 2000

Claudia Copeland  
Specialist in Resources and Environmental Policy  
Resources, Science, and Industry Division

# Water Quality Initiatives and Agriculture

## Summary

Congress most recently enacted amendments to the nation's water quality law, the Clean Water Act (CWA), in 1987. But national water quality policy has evolved in the intervening years, as a result of implementation of the 1987 amendments and related Administration initiatives intended to fulfill the requirements and meet the goals and objectives of the Act. Agriculture, which has been a relatively minor component of national water quality policies and programs, especially regulatory policies, is now involved in several aspects of three recent initiatives.

In the Clean Water Action Plan, a Clinton Administration initiative intended to address the nation's remaining water quality challenges, several key actions focus on agriculture, federal lands, and forestry as part of the overall goal of the Plan to more effectively control nonpoint source pollution. Specific outcomes, requirements affecting agriculture, if any, and any possible deadlines will be evident as the key actions are set in motion.

One of the first Administration actions to carry out the Clean Water Action Plan was a national strategy for addressing waste management by one segment of agriculture, animal feeding operations (AFOs). Under the AFO strategy, all operators of animal feedings operations are expected to develop and implement site-specific comprehensive nutrient management plans, while an estimated 15,000 to 20,000 large AFOs and those contributing to water quality impairments will be priorities for regulatory programs and enforcement.

A third policy development, separate from the Clean Water Action Plan, is implementation of existing CWA requirements which concern measures to improve the quality of waters that remain pollutant-impaired even after application of traditional pollution controls by industrial and municipal "point sources." Most of agriculture is classified as a "nonpoint source" and is not subject to CWA controls. These requirements are the Act's Total Maximum Daily Load (TMDL) program. As states implement the TMDL program, where agricultural sources are identified as responsible for water quality impairments, they may be required to adopt control actions and/or management measures. Determinations of impairments and required actions will be site-specific and variable. However, there is controversy over whether nonpoint sources of pollution (diffuse runoff that does not come from a pipe, ditch, or similar conveyance) are lawfully covered by the TMDL program. If only point sources are covered, impacts on agriculture would be considerably fewer. Regulatory changes proposed in 1999 to strengthen the TMDL program were widely criticized by agriculture and forestry groups, other industry groups, states and localities, and environmental groups. Final changes, issued in July 2000, dropped provisions that could have directly affected some in agriculture and forestry, but the new rules remain controversial.

This report provides background on the Clean Water Action Plan, the Unified National AFO Strategy, and implementation of the TMDL provisions of the Clean Water Act. It includes a glossary of terms and a chronology of key dates and deadlines related to the initiatives.

## Contents

Introduction .....	1
Linkage and Coordination .....	3
Part 1: The Clean Water Action Plan .....	4
Elements of the Plan and Early Implementation .....	5
Early Implementation of the Clean Water Action Plan .....	6
Litigation Challenging the Clean Water Action Plan .....	8
Senate Oversight Hearing on the CWAP .....	9
Part 2: Animal Feeding Operations and the Clean Water Act .....	9
Problems with CAFO Regulation .....	11
Initiative under the CWAP: The National AFO Strategy .....	12
The National AFO Strategy .....	12
Guidance on Permits .....	15
Response to the Strategy .....	16
Appropriations Requirement .....	17
Part 3: Related Water Quality Initiative: TMDLs .....	17
Implementation .....	18
Proposed Regulatory Changes .....	20
The Revised TMDL Regulation .....	21
Agriculture and Forestry .....	22
Treatment of Nonpoint Sources in the TMDL Program .....	22
Further Developments .....	24
Glossary of Terms .....	26
Timeline of Identified Activities and Events	
In the AFO Strategy and TMDL Program .....	28

# Water Quality Initiatives and Agriculture

## Introduction

Congress most recently enacted amendments to the nation's water quality law, the Clean Water Act (CWA), in 1987. But national water quality policy has evolved in the intervening years, as a result of implementation of the 1987 amendments and, even more so, as a result of Administration initiatives intended to fulfill the requirements and meet the goals and objectives of the Act as a whole. One of the most visible of these initiatives is the Clean Water Action Plan (CWAP), announced by President Clinton and Vice President Gore in February 1998. Its purpose is to build on the environmental successes of the CWA since it was enacted in 1972 and to address the nation's remaining water quality challenges through more than 100 actions now being developed or implemented by agencies of the government together with state, local, public and private partners. Somewhat less headline-worthy but likely to have widespread impact is implementation of an existing provision of the CWA, called the Total Maximum Daily Load (TMDL) program, reinvigorated and driven by lawsuits and recently issued regulatory changes.

The Clean Water Act's traditional focus has been on controlling wastewater from manufacturing and other industrial facilities, termed "point sources," which are regulated through discharge permits. That statutory and regulatory focus on point source controls has enabled much progress towards the nation's water quality goals. Yet, as point source pollution has been controlled, uncontrolled discharges in the form of runoff from "nonpoint sources" have become proportionally a larger share of remaining water pollution problems. Nonpoint pollution occurs as surface erosion of soil by water and as surface runoff of rainfall or snowmelt from diffuse areas such as farm and ranch land, construction sites, and mining and timber operations. Except for large animal feeding operations, most agricultural activities are considered to be nonpoint sources, since they do not discharge wastes from clearly identifiable pipes, outfalls, or similar "point" conveyances. Nonpoint sources are not required to obtain CWA discharge permits. Consequently, agricultural and other nonpoint sources are not subject to the compliance and enforcement regime that applies to point sources.

How is agriculture now involved in current water quality discussions? Agriculture, which has largely been at the sidelines of national water quality policies and programs, especially regulatory policies, since much of its activities are not directly subject to the Clean Water Act, now finds its activities scrutinized in connection with several aspects of the recent water quality initiatives, which are discussed in this report. First, one of the key goals of the CWAP is more effective control of nonpoint source pollution, and because water quality data identify agriculture as a significant contributor to nonpoint pollution, a number of actions in the Plan focus on agriculture as a whole. Second, one of the first Clinton Administration actions to carry out the CWAP was a national strategy for addressing

waste management by one segment of agriculture, animal feeding operations (AFOs). This strategy will affect an estimated 15,000 to 20,000 of the largest animal feeding operations through regulation, and it seeks to encourage all livestock producers with smaller operations to adopt improved waste management practices voluntarily. A third development, separate from the CWAP, is implementation of the existing TMDL provision of the CWA which concerns measures to improve the quality of waters that remain impaired even after application of traditional pollution controls. It affects nonpoint as well as point sources of pollution from agriculture and other sectors. Where agricultural sources are identified as contributing to these continuing water pollution problems, they may be required by states to take steps that will help correct impairments.

Agricultural and other nonpoint sources have become increasingly prominent in debates over water quality policy in part because these types of diffuse sources are believed to be the largest remaining water pollution problem affecting United States waters. To begin to address these problems, Congress added section 319 to the CWA in 1987, directing states to implement programs for managing nonpoint sources. Consequently, under federal law, agricultural sources could be subject to state-developed plans requiring operators to use management measures to limit pollutant runoff from their lands. There is anecdotal information that some state nonpoint pollution programs are addressing agricultural runoff in various ways, including technical and financial assistance.<sup>1</sup>

In light of the several federal water quality policy initiatives discussed in this report, questions arise concerning how, specifically, agriculture will be affected. The answer, it seems, is that it will be affected substantially but not systematically, in that the effects do not grow out of an integrated policy aimed specifically at agriculture. The Administration and the individual federal agencies involved in these activities have produced voluminous reports and other documents detailing the overall CWAP and separate actions, but none describes *holistically* or *comprehensively* how agriculture or any other sector of the economy will be impacted overall. Still, substantial effect seems likely by virtue of the greater scrutiny in general that is being given to agriculture's impact on water quality. Operators of large animal feeding operations are especially affected by the Administration's AFO waste management strategy. Remaining impacts, especially of the TMDL program, depend very much on site-specific considerations of water quality impairments (i.e., what are the sources contributing to impaired waters, what will be the most effective ways to manage those sources) and how states will respond to the requirements of implementing the TMDL provision of the law. Each of the three initiatives will affect agriculture.

- ! In the Clean Water Action Plan, several key actions address agriculture, federal lands, and forestry as part of the overall goal in the Plan to more effectively control nonpoint source pollution. Specific outcomes, requirements affecting agriculture, if any, and deadlines, if any, will be evident as the key actions are set in motion.

---

<sup>1</sup> U.S. Environmental Protection Agency. *Section 319 Success Stories: Volume II. Highlights of State and Tribal Nonpoint Source Programs*. EPA 841-R-97-001. October 1997. 213 p.

- ! Under the AFO strategy, all operators of animal feeding operations should develop and implement site-specific comprehensive nutrient management plans, while an estimated 15,000 to 20,000 operators of AFOs (large facilities, which are termed confined animal feeding operations, or CAFOs, and smaller ones contributing to water quality impairments) will be priorities for regulatory programs and enforcement.
- ! As states implement the TMDL program, where agricultural sources are identified as responsible for water quality impairments, agriculture may be required to adopt control actions (for those in agriculture which are point sources) and/or management measures (for agricultural nonpoint sources) to help clean up waterways. Determinations of impairments and required actions will be site-specific and variable. However, there is controversy over whether nonpoint sources are lawfully covered by the TMDL program. If only point sources are covered, impacts on agriculture would be considerably fewer.

This report consists of three major parts providing background on the three ongoing water quality initiatives: the Clean Water Action Plan, the Unified National AFO Strategy, and implementation of the TMDL provisions of the Clean Water Act. At the end of the report is a glossary of terms and a chronology of the key deadlines that can be identified in the initiatives.

## **Linkage and Coordination**

Each of the three initiatives described in this report contains deadlines for actions to be taken by federal agencies, states, and others. Based on the public documents associated with each, there is relatively little apparent coordination that would help agriculture or other sectors assess the aggregate impacts of all of these developments.

In the introductory part of the Clean Water Action Plan (discussed in Part 1 of this report), the Administration describes national data on water quality impairments and ongoing state efforts to identify pollution-impaired waters, as background for “today’s water quality challenges” which the Plan addresses. Regarding agriculture, in addition to actions in the Plan related to reducing pollution from AFOs (discussed in Part 2), several other key actions also described in Part 1 specifically address agriculture, while others address federal lands and forestry. None of these is specifically tied to the AFO strategy.

The AFO strategy is one key action under the Clean Water Action Plan and, consequently, has obvious links to the Plan. In the AFO strategy, the principal linkage between it and the current TMDL program of the Clean Water Act (see Part 3 of this report) is in the strategy’s discussion concerning the role of state and tribal governments, which are responsible for using the TMDL process to identify pollution-impaired waters. There is explicit linkage of the AFO strategy with the TMDL program in one area. Under the AFO strategy, where TMDL assessments identify the causes of water quality impairment as coming, for example, from animal manure or

wastewater problems, those assessments may be the basis for identifying AFOs which should be priorities for inclusion in the strategy's regulatory program.<sup>2</sup> However, CWA regulations issued in July 2000 to revise the TMDL program are separate from activities under the Clean Water Action Plan, including the AFO Strategy, and contain no discussion of actions under the Plan.

## **Part 1: The Clean Water Action Plan<sup>3</sup>**

In October 1997, on the 25<sup>th</sup> anniversary of the Clean Water Act (CWA), Vice President Gore announced an initiative intended to build on the environmental successes of that Act and to address the nation's remaining water quality challenges. While much progress has been made in achieving the ambitious goals of the law to restore and maintain the chemical, physical and biological integrity of rivers, lakes, and coastal waters, problems persist. Based on the limited water quality monitoring that is done by states, it is estimated that about 40% of those waters do not meet applicable water quality standards. The types of remaining water quality problems, especially runoff from farms and ranches, city streets, and other diffuse sources, are more complex than is controlling pollution discharged from the end of pipes at factories and sewage treatment plants.

The Vice President directed the Environmental Protection Agency (EPA) and the U.S. Department of Agriculture (USDA) to coordinate the work of other federal agencies to develop an Action Plan within 120 days to improve and strengthen water pollution control efforts across the country.<sup>4</sup> It was to focus on three goals: enhanced protection from public health threats posed by water pollution, more effective control of polluted runoff, and promotion of water quality protection on a watershed basis. The Departments of Commerce and the Interior and the U.S. Army Corps of Engineers also have roles. The purpose of the Action Plan is to coordinate federal efforts to achieve the three goals. Over all, the Initiative seeks primarily to address the wide range of activities that cause nonpoint source pollution (polluted runoff), including agriculture, mining, urban development, and forestry. EPA and states believe polluted runoff causes more than one-half of remaining water quality problems. Agriculture is believed responsible for the largest portion of today's water quality impairments due to polluted runoff--70% of impaired rivers and streams and 49% of impaired lakes, according to EPA.

---

<sup>2</sup> U.S. Department of Agriculture, U.S. Environmental Protection Agency. "Unified National Strategy for Animal Feeding Operations." Mar. 9, 1999: 19-20.

<sup>3</sup> For additional information, see CRS Report 98-150, *The Clean Water Action Plan: Background and Early Implementation*; and CRS Report 98-745, *Clean Water Action Plan: Budgetary Initiatives*.

<sup>4</sup> "Notice of Vice President Gore's Clean Water Initiatives." 62 *Federal Register* 60447-60449, Nov. 7, 1997.

## Elements of the Plan and Early Implementation

President Clinton and Vice President Gore released the Action Plan on February 19, 1998 (the text is available at [<http://www.cleanwater.gov/>]). The components of the plan, more than 100 actions, correspond to specific elements identified by the Vice President in October 1997. It consists mainly of existing programs, including some planned regulatory actions that agencies have had underway, now to be enhanced with increased funding or accelerated with performance-specific deadlines. Components of the Action Plan announced in February 1998 are built around four key tools to achieve clean water goals:

- ! “A Watershed Approach,” using a collaborative effort by governments, the public, and the private sector to restore and sustain the health of watersheds.
- ! “Strong Federal and State Standards,” to protect public health, prevent polluted runoff, and ensure accountability.
- ! “Natural Resource Stewardship,” calling on federal natural resource and conservation agencies to apply resources and technical expertise to state and local watershed restoration and protection.
- ! “Informed Citizens and Officials,” calling on federal agencies to improve the information available to the public about the health of watersheds and safety of beaches, drinking water, and fish.

Many of the specific elements of the Plan are intended to address nonpoint source contributions to water quality impairments nationwide. According to the Plan and EPA reports, polluted runoff is now the major source of water quality problems in the United States. EPA’s 1998 National Water Quality Inventory, which is the most recent compilation of conditions, summarizes state and tribal surveys of water quality; it indicates that about 40% of surveyed U.S. waterbodies are impaired by pollution, with the leading source being polluted runoff. About 60% of impaired rivers and streams and 30% of impaired lakes are impaired by runoff or discharges from agriculture.<sup>5</sup> In 28 states that specifically assessed impacts of agricultural activities on rivers and streams, the leading categories of agricultural source impairments were nonirrigated crop production, irrigated crop production, and animal operations (feedlots and animal holding areas).<sup>6</sup>

These water quality data are limited, because they describe only conditions in waters assessed by states and tribes, but do not include all waterbodies. For the 1998 report, states surveyed 23% of river miles, 42% of lake acres, and 30% of estuaries, since most states do not assess all of their waters during the two-year reporting cycle required by the Clean Water Act. Therefore, the data should be used with caution. Nevertheless, EPA believes that the data point to a major, continuing water pollution problem coming from agricultural sources of all types--crop and pastureland, rangeland, and concentrated animal feeding operations.

---

<sup>5</sup> U.S. Environmental Protection Agency. *National Water Quality Inventory: 1998 Report to Congress*. June 2000. EPA841-R-00-001. 1 vol. Broadly speaking, “impairment” means that the waterbody fails to attain and maintain designated water quality standards.

<sup>6</sup> *Ibid.*, p. 65.

Regarding agriculture, a prominent key action in the Plan is reducing pollution from animal feeding operations (see Part 2 of this report). In addition, the Plan includes several other key actions concerning agriculture, such as: USDA will implement existing conservation reserve and conservation enhancement programs; USDA will work with agricultural producers to encourage the use of marketing and promotion orders to assist them in meeting pollution prevention objectives; and USDA will study the feasibility of providing an insurance program to enable producers to offset risks of utilizing new technologies by managing fertilizers and pesticides to prevent pollution (*Clean Water Action Plan*, pp. 50-54).

The Plan contains other actions to enhance watershed management on federal lands, starting with developing by 1999 a unified policy to provide a framework to ensure that federal land and resource management activities demonstrate water quality stewardship. Related actions include substantially improving maintenance of forest roads and trails on federal lands; publication of new forest transportation regulations by the U.S. Forest Service in 1999; assessment by EPA of whether to revise CWA permit regulations relative to forest roads; implementation of an accelerated program to restore stream corridors; actions by federal land management agencies to implement forest health strategies; and improved management of public rangelands (*Clean Water Action Plan*, pp. 32-36)

**Early Implementation of the Clean Water Action Plan.** The President's FY1999 budget identified the Clean Water Action Plan as a high priority for environmental programs. It requested a total of \$2.5 billion--a \$609 million, or 33%, increase over 1998 base funding levels--for a multi-agency Clean Water and Watershed Restoration Initiative. By October 1998, Congress had passed FY1999 appropriations bills to fund the Plan. Over all, the enacted bills provided \$2.0 billion--less than 10% of the increased funds sought by the Administration. EPA received close to full funding for its requested Action Plan activities, but USDA received less than 4% of requested increases for its activities under the Plan. In the President's FY2000 budget, the Administration requested \$450 million in increases (\$2.45 billion total) for the Plan. Appropriations bills provided \$2.17 billion--\$128 million more than in FY1999, but \$322 million less than was requested. For FY2001, the President's budget requested \$2.76 billion for activities under the Plan, a 27% increase above the FY2000 enacted funding level.

Federal officials estimated in February 1998 that the ambitious agenda in the Plan would require 25 years for full implementation. They believe that the Plan will be implemented, even though appropriations have been less than requested. A lack of new resources will mean a 50- or 100-year implementation schedule, they now say. The Administration has issued two reports (in February 1999 and February 2000, the anniversary of the release of the Action Plan) describing accomplishments to date. Many of the accomplishments, however, are only first steps in processes that will be lengthy, especially in terms of impacting water quality improvements. Since many of the specific items in the Plan and half of the budgetary resources are focusing on partnerships with states, localities, and individuals, accomplishments depend greatly on actions taken by multiple stakeholders. Changes in water quality conditions may not be apparent for many years.

***EPA Activities.*** Of the 100-plus actions in the Plan, many involve core clean water programs for which EPA is primarily responsible.

- ! A significant aspect of the Plan is a focus on watersheds as the basis of water quality problem identification and decision making. In June 1998, EPA released a Unified Watershed Assessment Framework to assist states, tribes and others with the process called for in the Plan of identifying watersheds that do not meet clean water and other natural resource goals and where prevention action is needed to sustain water quality and aquatic resources. In response, states submitted watershed assessment reports by October 1, 1998. Funding increases provided since FY1999 for clean water grants to states have focused on priority waters identified by these assessments.
- ! State water quality reports indicate that over-enrichment of waters by nutrients (nitrogen and phosphorus) is the biggest overall source of impairment of the nation's waters. EPA is to publish numeric water quality criteria (scientific information concerning harmful levels of a pollutant) for nutrients for three groups of waters (lakes and reservoirs, rivers and streams, and estuaries and coastal areas) by the end of 2000 and for wetlands by the end of 2001. In June 1998, EPA released a national strategy for developing criteria and standards for nutrients. States will use these criteria to develop nutrient provisions of enforceable state water quality standards.

***Joint or Other Federal Agency Activities.*** Many actions in the Plan involve other federal agencies, either alone or jointly with EPA. A key purpose of the Plan is to coordinate the several federal agencies and their state partners that have water quality program responsibilities.

- ! Among the areas that involve agriculture, a key element of the Plan, minimizing public health and environmental impacts of runoff from animal feeding operations (AFOs) into rivers, lakes, and estuaries, was addressed when EPA and USDA issued a national AFO strategy in March 1999. The strategy itself is not a new regulation or substitute for existing regulations, nor does it impose binding requirements on federal agencies, states, tribes, localities, or the regulated community. It presents an overall approach and timetable for curbing pollution from livestock operations. However, many of the details — and, hence, many of the specific impacts on operators, states, and others — will only become clear with the issuance of guidance and regulatory changes in the coming months. (See discussion below.)
- ! The Conservation Reserve Enhancement Program (CREP) is a state-federal conservation partnership program targeted to address specific state and nationally significant water quality, soil erosion, and wildlife habitat issues related to agricultural use. As of October

2000, USDA has approved programs in 13 states and is considering nine other proposals.

- ! In October 2000, EPA, USDA, the Departments of Agriculture, Commerce, Defense, Energy and the Interior, the Tennessee Valley Authority, and the Army Corps of Engineers adopted a unified federal policy on watershed management. It is intended to provide a framework for a watershed approach to ensure that federal land and resource management activities meet the goals of the Clean Water Act on the 800 million acres of land managed by the federal agencies and ensure that the federal government serves as a model for water quality stewardship.
  
- ! The Plan encouraged a temporary moratorium on new road construction in America's national forests. In October 1999, President Clinton directed development of an environmental impact statement and regulations to permanently prohibit new roads in certain roadless areas on national forest land. Regulations were proposed in May 2000. The proposal has been praised by some, criticized by some for not being far-reaching, and criticized by others for being too restrictive. Final rules are expected to be issued by the end of the year.

**Litigation Challenging the Clean Water Action Plan.** In June 1999, the Wyoming Association of Conservation Districts, joined by more than 60 groups representing state conservation districts and agriculture industry, challenged the Clean Water Action Plan in a lawsuit filed in U.S. District Court in Colorado.<sup>7</sup> The lawsuit alleges that the Plan violates three federal laws: the National Environmental Policy Act (NEPA), by not requiring an environmental impact statement on the plan's cumulative impacts; the Administrative Procedure Act (APA), by not providing enough opportunity for public comment; and the Clean Water Act, by trying to regulate nonpoint source water pollution. The plaintiffs seek to block implementation of the CWAP pending full compliance with the three laws.

The litigation asserts that, because the CWAP is a "major federal action," it should have been subject to the public notice and comment and intergovernmental coordination processes under the APA and NEPA. In response, EPA has argued that the Plan itself is a strategy for actions that the government plans to take and, thus, does not fall under federal public input requirements. Any EPA regulatory actions resulting from the Plan will be subject to such requirements, EPA has said.

In October 1999, the federal government filed a motion to dismiss the case, citing lack of jurisdiction and lack of subject matter. A U.S. Magistrate, appointed to analyze issues presented in the case, recommended in October 2000 that the government's motion to dismiss be granted by the district court. The plaintiffs oppose the recommendation, and the case is continuing.

---

<sup>7</sup> *Wyoming Association of Conservation Districts v. Browner*, D.Colo., 99-S-1179, June 23, 1999.

**Senate Oversight Hearing on the CWAP.** On May 13, 1999, the Senate Environment and Public Works Committee held an oversight hearing on the CWAP, the first such congressional involvement outside the appropriations process.<sup>8</sup> The Committee heard from Administration and public witnesses. EPA and USDA witnesses defended the Plan as “a comprehensive blueprint for restoring and protecting the Nation’s water resources.” Environmental group witnesses endorsed the Plan because, in their view, it focuses significant federal resources on polluted surface runoff. State witnesses were divided. One from Maryland supported the Plan, saying it reinforces strong ongoing water quality programs in that state. A witness from Wyoming, which has been in dispute with EPA over the state’s water quality program, said the Plan has disrupted ongoing state activities.

Agriculture industry witnesses challenged the scientific basis of the Plan, especially EPA’s contentions that nonpoint sources generally and agriculture specifically are the major sources of water quality impairment. These groups argue that, because existing water quality data are limited and are based on partial state assessments of surface waters, the premise of the Plan is flawed. Better data are needed before undertaking such a broad initiative, they said. Others said that requirements and deadlines of actions in the Plan are unrealistic, particularly the animal feeding operations strategy (see Part 2).

## **Part 2: Animal Feeding Operations and the Clean Water Act<sup>9</sup>**

As noted previously in this report, most agricultural activities are considered to be nonpoint sources and thus are exempt from CWA regulatory programs; this includes most animal feeding operations (AFOs, or feedlots), where livestock are confined, reared, and fed. However, *large* confined animal feeding operations (CAFOs) are specifically defined in the CWA as “point sources” rather than “nonpoint sources.” CAFOs are treated in a similar manner to other industrial sources of pollution, such as factories and municipal sewage treatment plants, and are subject to the Act’s prohibition against discharging pollutants into waters of the United States without a permit. In 1974 and 1976, EPA issued regulations defining the term CAFO for purposes of permit requirements (40 CFR §122.23) and effluent limitation guidelines specifying limits on pollutant discharges from feedlots (40 CFR Part 412). Discharge permits, issued by EPA or qualified states (43 states have been delegated this responsibility), implement the Part 412 requirements for individual facilities. Under the existing permit rules, a CAFO must meet all of the following criteria to be subject to EPA rules:

---

<sup>8</sup> Other than this Senate oversight hearing, Congress has considered the CWAP primarily through the appropriations process, where spending decisions about requests to fund the Plan have been considered.

<sup>9</sup> For information, see CRS Report 98-451, *Animal Waste Management and the Environment: Background for Current Issues*.

- ! Animals are stabled or confined and fed for 45 days or more in a 12-month period;
- ! Vegetation is not sustained during the normal growing season on any portion of the lot or facility (*i.e.*, animals are not maintained in a pasture or on rangeland);
- ! Feedlots hold more than 1,000 animal units<sup>10</sup> (or between 300 and 1,000 animal units if pollutants are discharged from a manmade conveyance or are discharged directly into waters passing over, across, or through the facility). Also, animal feeding operations that include fewer than 300 animal units may be designated as CAFOs if they pose a threat to water quality or use. Based on the USDA 1992 Census of Agriculture, EPA estimates that 6,600 feeding operations qualify as CAFOs, considering the number of animal units alone -- only 1.5% of the 450,000 operations nationwide that confine or concentrate animals.<sup>11</sup>

EPA's effluent limitation regulations apply to operations that raise beef and dairy cattle, poultry, swine, sheep, and horses. The rules essentially prohibit discharge of wastewater from CAFOs into navigable waters, except when caused by the worst 24-hour storm that would occur in a 25-year period. These regulations do not specifically address discharges that may occur from wastewaters or solid manure mixtures which are applied to soil, nor do they address odor control or groundwater impacts from animal agriculture operations. These topics, if regulated at all, are subject to varied state and local authority, not federal law or regulation.

In addition to the CWA, the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) imposed waste management requirements on most livestock producers in the coastal zone of the 32 states and territories that participate in the Coastal Zone Management Act. CZARA is the first federal program to require specific measures to address agricultural erosion and runoff and other major sources of coastal nonpoint pollution. Its requirements are implemented by states through plans that they develop under CZARA. Federal CZARA guidance for agricultural sources specifies minimum management measures including retention ponds, solids separation basins, and vegetative practices such as filter strips between production

---

<sup>10</sup> As defined by USDA, an animal unit is 1,000 pounds of live weight of any given livestock species or combination of livestock species. This term varies according to animal type; one animal is not always equal to one animal unit. EPA's regulation of CAFOs covers AFOs consisting of: 1,000 beef cattle; 700 mature dairy cattle; 2,500 swine weighing over 55 pounds; 500 horses; 10,000 sheep; 55,000 turkeys; or 30,000 laying hens or broilers (with a liquid manure handling system).

<sup>11</sup> The concentration that has occurred in the animal agriculture sector is illustrated by changes over time in the number of CAFOs. When EPA's current CAFO regulations were proposed in 1975, USDA analyzed the potential impacts and reported that 95,000, or 13.6%, of the 700,000 animal feeding operations in the country would be subject to those rules. (Source: U.S. Department of Agriculture. "Implications of EPA Proposed Regulations of November 20, 1975 for the Animal Feeding Operations." Washington, DC, Jan. 30, 1976. 26 p.) The smaller number of total operations and smaller number of CAFOs today suggest that those that are regulated currently are, on average, much larger than 20 years ago.

facilities and nearby surface waters. CAFOs with as few as 50 animal units may be subject to these and other requirements. Federal agencies have fully approved CZARA programs in three states (California, Maryland, and Rhode Island) and conditionally approved CZARA programs in 26 other coastal states and territories (three others are under development). Livestock and poultry producers there will begin to be regulated by state requirements in the near future. Neither the law nor the implementing regulations specifies a timeline for implementation.

**Problems with CAFO Regulation.** A number of problems with the current CAFO regulatory system under the CWA have limited its effectiveness in preventing environmental problems from livestock production.

- ! Fewer than 30% of the CAFOs with over 1,000 animal units had or have CWA permits today (*i.e.*, about 2,000 out of 6,600). One explanation is the historic emphasis by federal and state regulators on other large industrial and municipal dischargers over agricultural sources, since most of agriculture is not subject to the Act. EPA estimated that only 760 permits were current at the end of 1995.<sup>12</sup> Another factor is disputes between regulators and agricultural operators over whether particular facilities meet the regulatory threshold, such as whether the regulations apply to feedlots that claim to have no discharge.
- ! Some sources went unregulated because the EPA rules, now more than 20 years old, do not reflect more recent changes in animal waste management technology. In particular, EPA defines feeding operations with 100,000 laying hens or broilers that use continuous flow watering systems and facilities with 30,000 laying hens or broilers that use liquid manure systems as CAFOs. However, the poultry industry has moved away from such wet systems since the 1970s. Many broiler producers now use dry litter waste systems where water is not applied and there is no discharge; they have argued that they are not subject to the rules. Producers of layers generally still have liquid waste systems.
- ! Federal regulations and guidelines contain no requirement for nutrient or manure management plans.
- ! CAFO inspections by federal and state regulators and compliance enforcement activities have been limited, often occurring only after citizen complaints or accidental releases following large rainfall events or equipment or facility failures.

---

<sup>12</sup> Parry, Roberta. "Agricultural phosphorus and water quality: a U.S. Environmental Protection Agency perspective." *Journal of Environmental Quality*. Vol. 27, no. 2 (1998): 258.

## **Initiative under the CWAP: The National AFO Strategy**

EPA has not lacked authority to address water quality problems associated with animal feeding operations, but doing so has not been a priority.<sup>13</sup> For several years, Agency officials discussed the need to revise the CAFO regulations, and in 1997, plans were announced for two initiatives -- one dealing with CWA enforcement against livestock producers, and one dealing comprehensively with all sources of nonpoint source pollution, including farm operations. However, neither included implementation details.

Several events combined to raise the priority of these topics. One was increasing attention to pollution incidents resulting from or believed to be associated with animal waste spills. Another was the growing number of lawsuits filed by environmentalists against states and EPA (involving nearly 2 dozen states), seeking to compel action against remaining sources of water pollution, including agriculture, under the Clean Water Act's TMDL program (see Part 3 of this report). A third came in February 1998 with the Administration's release of the Clean Water Action Plan.

**The National AFO Strategy.** In March 1999, EPA and USDA jointly issued a major program to implement the Clean Water Action Plan: a unified national strategy for animal feeding operations to minimize the water quality and public health impacts of AFOs.<sup>14</sup>

The strategy consists of multiple elements and is based on a national performance expectation that all AFO owners and operators—regardless of the size of their operations—will develop and implement by 2009 site-specific Comprehensive Nutrient Management Plans (CNMPs) intended to protect water quality and public health. Having all AFO owners and operators undertake comprehensive nutrient management planning will accomplish the goal of minimizing water pollution from confinement facilities and land application of manure, according to the strategy. With the exception of large AFO operations which are considered to be CAFOs and thus are subject to CWA requirements (about 5% of total AFOs nationwide), the agencies expect that the vast majority of CNMPs will be developed and implemented voluntarily. In general terms, a CNMP will identify actions or priorities to meet clearly identified nutrient management goals at an agricultural operation and typically will address manure handling and storage, land application of manure, land management (such as tillage, crop residue management, and other conservation practices), recordkeeping, and other utilization options (for example, when manure is sold to other farmers). Plans will be developed by qualified specialists. NRCS estimates that at least 330,000 AFOs need to develop CNMPs or revise existing nutrient management plans to meet the performance expectation of the strategy. The strategy recognized that technical and financial assistance will be needed both to

---

<sup>13</sup> CWA section 304(b) requires EPA to review and, if appropriate, revise effluent limitation guidelines at least annually. The CAFO standards have not been reviewed or revised since they were promulgated in the mid-1970s.

<sup>14</sup> U.S. Department of Agriculture, U.S. Environmental Protection Agency. "Unified National Strategy for Animal Feeding Operations." Mar. 9, 1999. 46 p. Text of the strategy is available at [<http://www.epa.gov/owm/afo.htm>].

develop and implement CNMPs, and it discussed additional resources in the Administration's budget to be directed at such assistance.<sup>15</sup>

The strategy views regulatory programs as complementary to voluntary approaches that will apply to 95% of the total 450,000 AFOs in the nation. The strategy says that, under existing CWA authority, the discharge permit program in the CWA (called the NPDES program) will be used to address the relatively small number of AFOs (5% of the total) that cause measurable water quality or public health problems or that pose a significant risk to water quality or public health. It identifies the following priorities for permits and enforcement:

- ! Large facilities (those with greater than 1,000 animal units) which produce quantities of manure that can be a risk to water quality and public health. These already are considered to be CAFOs and therefore are "point sources" already subject to NPDES permit requirements.
- ! Some facilities with fewer than 1,000 animal units which can pose a risk of water pollution or public health problems, because the facilities have a manmade conveyance to discharge manure and wastewaters into streams.
- ! Other individual facilities or collections of facilities with fewer than 1,000 animal units that, based on water quality monitoring, are contributing significantly to impairment of a waterbody or watershed; such facilities will be designated as CAFOs and will be a priority for permit issuance and enforcement.

EPA expects that the total number of CAFOs meeting these three priorities for NPDES permits will be 15,000 - 20,000 facilities. These facilities will be required to develop and implement CNMPs, and their permits will include specific performance measures, monitoring, and reporting. Under the strategy, states and EPA should identify the universe of CAFOs and inspect all CAFOs in high-priority areas by 2001 and all other CAFOs by 2003. Permitting will occur in two phases. First, by 2005, EPA and authorized states will issue NPDES permits under existing regulations to priority facilities. EPA expects that this will occur mainly through general permits (either issued on a statewide basis or for specific geographic areas, such as watersheds). Individual permits will be issued to exceptionally large operations, new operations or those undergoing significant expansion, operations with historical

---

<sup>15</sup> The President's FY2001 budget requested an additional \$151 million (for \$325 million total) for the Environmental Quality Incentive Program (EQIP) and a \$54 million increase (for \$73 million total) in USDA assistance to AFOs to develop or revise CNMPs. Appropriators (in P.L. 106-387) provided no increased funds for EQIP, but kept it at the FY1999 and FY2000 level of \$174 million, and provided \$33 million total for AFO assistance grants. The budget also requested an additional \$50 million (for \$250 million total) for the Section 319 nonpoint source management grant program, with the increase directed to priority watersheds under the Clean Water Action Plan. Appropriators (in P.L. 106-377) provided \$238 million for that EPA grant program.

compliance problems, or operations with significant environmental concerns. NPDES permits are issued for no longer than 5 years and must be renewed thereafter.

EPA also has initiated revisions to the existing CAFO permitting regulations and effluent guidelines, using input from USDA, states, tribes, other federal agencies, and the public. EPA currently is under a court-ordered schedule to issue revised guidelines for poultry, swine, and beef and dairy cattle by December 2002. In compliance with that schedule, EPA proposed revised guidelines for these sectors on December 15, 2000.<sup>16</sup> The proposed rule would increase the number of facilities required to obtain Clean Water Act permits and would restrict land application of wastes. In the proposal, EPA asked for public comment on two options for defining CAFOs subject to NPDES permitting. The first option would consider a facility to be a CAFO if it has 500 cattle or comparable animals units (compared with 1,000 animal units under current rules). The second option would define a facility as a CAFO if it has more than 1,000 animal units or has 300 to 1,000 animal units and meets certain conditions such as if they are located within 100 feet of a waterway. However, under either of the proposed options, permitting authorities would have discretion to designate smaller facilities (i.e., below 500 or 300 animal units, respectively) for inclusion in permit programs.

In other changes in the EPA December proposal, permitting requirements would be extended to dry-manure poultry operations and stand-alone immature swine and heifer operations. The Agency proposed to require that permitted facilities develop and implement site-specific permit nutrient plans which identify the amount of nutrients generated at the facility and determine rates for the application of the waste to agricultural land. EPA also proposed to lift the current regulatory exemption for facilities that only discharge during a 25-year, 24-hour storm.

Under the 1999 AFO strategy, in the second phase of NPDES permitting after 2005 (following expiration of permits issued between 2000 and 2005), EPA and states will reissue permits from the first round and will incorporate any new requirements that could result from regulatory revisions completed in the interim.

The AFO strategy also addressed corporate integrators, owners of livestock that contract out to farmers to raise the animals or poultry. It recommended a co-permitting system, in which permits would cover not just the grower or farmer, but also the corporate owner, and EPA's December 2000 proposed CAFO rule changes would require co-permitting of facilities covered by those regulations. In such a system, liability for handling the animal waste and for any environmental violations would be shared by the farmer and any corporate owner that exercises substantial operational control over a CAFO. Environmental groups in particular have urged co-permitting, arguing that it could go a long way to improving waste management by involving integrators in ensuring that their contract growers are environmentally responsible. While some states already recognize that corporate owners share responsibility with farmers, industry groups have generally opposed this as a national requirement. In their view, it is inappropriate to hold the corporate entity responsible

---

<sup>16</sup> For information, see: [<http://www.epa.gov/owm/afos/rule.htm>].

for an environmental violation when that entity does not own the farm, its buildings, the land, or the waste produced by the animals.

The strategy allows states that can show they meet the requirements of the NPDES program to be recognized by EPA as functionally equivalent. This part of the strategy recognizes that some states are implementing permitting programs under state law that meet or exceed the requirements of the NPDES program

**Guidance on Permits.** Both USDA and EPA have issued technical guidance documents intended to assist issuance of permits and development of comprehensive nutrient management plans. In May 1999, the Natural Resources Conservation Service of USDA released the Policy for Nutrient Management<sup>17</sup> and a revision to the conservation practice standards for Nutrient Management.<sup>18</sup> NRCS' policy directive and supporting technical guide establish policy for nutrient management, set forth guidance to NRCS personnel who provide nutrient management technical assistance, and guidance for the revision of the NRCS nutrient management conservation practice standard. These two documents will provide the framework for all nutrient management plans developed by NRCS for the agricultural community, which will be tailored by state conservationists within a two-year period.

In addition, in December 1999 NRCS released a draft document providing Technical Guidance for Developing Comprehensive Nutrient Management Plans.<sup>19</sup> Its purpose, USDA said, is not to establish regulatory requirements but to provide technical guidance for local, tribal, state, or federal programs to use in developing CNMPs. However, the document provides a list of six essential elements that need to be considered in developing a CNMP, including evaluation and treatment of sites proposed for land application, potential short- and long-term impacts of planning land application, feed management activities to reduce the nutrient content of manure, and consideration of alternative utilization strategies to land application (such as off-site transport, combustion to produce energy, or composting). NRCS expected to issue final Technical Guidance in July 2000 but has not done so yet.

In August 1999, EPA issued draft guidance and a model permit to assist the states in meeting the goal of accelerating issuance of NPDES permits for large CAFOs.<sup>20</sup> The guidance provides information on:

- ! Which facilities need to apply for an NPDES permit,

---

<sup>17</sup> NRCS Policy for Nutrient Management, Part 402. Text of the policy is available at: [<http://www.nhq.nrcs.usda.gov/BCS/nutri/gm-190.html>]

<sup>18</sup> NRCS Nutrient Management (Code 590) Conservation Practice Standards. Text is available at: [<http://www.nhq.nrcs.usda.gov/BCS/nutri/590.html>]

<sup>19</sup> U.S. Department of Agriculture. Natural Resources Conservation Service. Notice of the Technical Guidance for Developing Comprehensive Nutrient Management Plans. 64 *Federal Register*, No. 236, Dec. 9, 1999: 68987-68994.

<sup>20</sup> U.S. Environmental Protection Agency. Office of Wastewater Management. Guidance Manual and Example NPDES Permit for Concentrated Animal Feeding Operations. Review Draft. Aug. 6, 1999. 1 vol. [[http://www.epa.gov/owm/afo.htm#Permit Guidance](http://www.epa.gov/owm/afo.htm#Permit%20Guidance)]

- ! The key elements of an NPDES permit for CAFOs,
- ! Components of a site-specific CNMP to be included in NPDES permits for CAFOs (the same six items specified in USDA's Technical Guidance document: manure and wastewater handling and storage; land application; site management; feed management; record keeping; and other utilization options, such as centralized treatment or composting),
- ! The relationship between NPDES permits and comprehensive nutrient management plans,
- ! The types of NPDES permits that may be issued to CAFOs (general permits issued on a statewide or watershed basis and individual permits, where appropriate),
- ! Public notice requirements,
- ! Co-permitting of corporate entities that exercise substantial operational control over CAFOs,
- ! Land application of manure and wastewater (including addressing land application activities under the control of the CAFO operator and activities not under the control of the CAFO operator), and
- ! Monitoring and reporting requirements.

EPA anticipates that CAFOs will be required to develop and implement CNMPs that are consistent with EPA's permit guidance, other state requirements, and NRCS technical standards. EPA took public comment on the draft guidance through November 1999 and was expected to issue final guidance in March 2000. However, the guidance has not yet been issued.

**Response to the Strategy.** Strong reactions to the national strategy came from farm groups. A number of them expressed a fear that a national AFO strategy will enable EPA, through clean water rules, to control economic activity and land-use decisions of farmers.<sup>21</sup> Most would prefer that any animal waste program focus on voluntary approaches that encourage operators to utilize good environmental practices, with regulation and enforcement limited to only known problems of poor resource management. Agricultural groups criticized many parts of EPA's draft permit guidance to implement the strategy, contending, for example, that EPA lacks authority to require co-permitting.

From the states' perspective, many have questioned the need for a national program. A key concern for states has been that many already have difficulty providing resources for feedlot inspections and enforcement; thus, they are wary of new regulatory requirements that could impose additional resource burdens. States also say that they need flexibility to coordinate and prioritize implementation of the federal strategy with other equally important state programs. EPA's concern is to balance the states' desire for flexibility with the federal agency's desire to have state programs be accountable and provide an opportunity, if needed, for federal enforceability.

---

<sup>21</sup> "Farm Groups Fear Regulatory Intrusion." *Land Letter*, Jan. 28, 1999: 2.

Environmentalists say that the proposed timeline to implement the strategy (7 years to issue permits for all CAFOs) is too slow. Many are critical that EPA failed to act on this problem sooner. Environmentalists often are skeptical of voluntary approaches to managing animal waste, particularly where there is no requirement for water quality monitoring or reporting, and little or no public involvement in siting, permitting, or similar decision making.<sup>22</sup> Environmental groups were highly critical of EPA's draft permit guidance. In their view, the guidance document inappropriately delegates responsibility to set nutrient waste management standards to USDA, which the Clean Water Act does not allow. According to these groups, comprehensive nutrient management plans based on USDA standards will be inadequate and will not provide for compliance with the Clean Water Act.

**Appropriations Requirement.** In the conference report accompanying EPA's FY2000 appropriation (P.L. 106-74, H.Rept. 106-379), conferees directed EPA, in conjunction with USDA, to conduct a cost and capability assessment of the AFO strategy and ordered that the report be submitted to Congress by May 15, 2001.<sup>23</sup>

### **Part 3: Related Water Quality Initiative: TMDLs<sup>24</sup>**

The Clean Water Act (CWA) contains a number of complex elements of overall water quality management. Foremost is the requirement in section 303 that states establish ambient water quality standards for surface waterbodies. These consist of the designated use or uses (e.g., recreational, public water supply, or industrial water supply) and the water quality criteria which are necessary to protect the use or uses. Through permits, states or the EPA impose wastewater discharge limits on individual industrial and municipal facilities to ensure that water quality standards are attained. However, Congress recognized in the Act that, in many cases, pollution controls implemented by industry and cities would be inadequate, due to pollutant contributions from other unregulated sources or insufficient regulation of cities and industrial facilities.

Under section 303(d) of the Act, states must identify lakes, rivers, and streams for which wastewater discharge limits are not stringent enough to achieve established water quality standards, after implementation of technology-based controls by industrial and municipal dischargers. For each of these waterbodies, a state is required to set a total maximum daily load (TMDL) of pollutants at a level that ensures that applicable water quality standards can be attained and maintained. If a state fails to do the TMDL analysis, EPA is required to develop a priority list for the state and make its own TMDL determination.

---

<sup>22</sup> "Farmers, Environmentalists Blast EPA Plan to Control Polluted Runoff," *Inside E.P.A.*, Mar. 12, 1999: 13.

<sup>23</sup> H.Rept. 106-379, in the *Congressional Record*, daily ed., October 13, 1999: H10019.

<sup>24</sup> For additional information, see CRS Report 97-831, *Clean Water Act and Total Maximum Daily Loads (TMDLs) of Pollutants*.

Section 303(d) provides the analytical and regulatory means for using water quality standards to upgrade waters that remain polluted after the application of technology-based requirements. A TMDL includes a quantitative assessment of water quality problems, pollution sources, and pollutant reductions needed to restore and protect a river, stream, or lake. TMDLs may address all pollution sources, including point sources such as municipal sewage or industrial plant discharges; nonpoint sources, such as runoff from roads, farm fields, and forests; and naturally occurring sources, such as runoff from undisturbed lands. The complexity and cost of developing TMDLs will vary, depending on the geographic area, number and complexity of pollutants, and distribution of sources.

The TMDL program first and foremost affects states, territories, and Indian tribes authorized to administer the Clean Water Act. It requires these entities to adopt and implement measures needed to attain and maintain water quality standards. It is up to states, territories, and tribes to identify waters that do not meet this goal and adopt policies and measures applicable to individual sources, as appropriate to attain water quality standards. In the early years of implementing clean water programs, states and localities were largely focused on water pollution problems associated with point sources (industries and municipalities). The TMDL requirements of the law effectively force an examination of *all* sources contributing to water quality problems. Thus, EPA, states, and the public are looking beyond traditional point source controls to assess all measures needed to attain water quality standards. This broader assessment is occurring as a result of litigation which has forced action by states and EPA and more recently by changes to the TMDL regulations.

A TMDL is not self-implementing and does not itself establish new regulatory controls on sources of pollution. However, when TMDLs are established, municipal and industrial wastewater treatment plants may be required to install new pollution control technology. States and EPA enforce the TMDLs through revisions to existing permits which include the pollutant limits and a schedule for compliance. For waters impaired by nonpoint source runoff, including runoff from agriculture, because there are no federal controls over these sources under the Clean Water Act, the primary implementation measures are state-run nonpoint source management programs coupled with state, local, and federal land management programs and authorities. For example, farmers and ranchers may be asked to use alternative methods in their operations to prevent fertilizers and pesticides from reaching rivers. Cities may be required to control and treat runoff from their streets.

## **Implementation**

TMDLs are one element of water quality management programs conducted by states to implement the CWA. Other activities include standard setting, monitoring, issuing permits, and enforcement. Integrating them with the TMDL program may well be difficult because of factors such as different program purposes, schedules, and even different definitions for key terms. Most states have lacked the resources to do TMDL analyses, which involve complex assessment of all identified point and nonpoint sources to ascribe and quantify environmental effects for particular discharge sources. Baseline water quality monitoring data for the analyses (to identify impaired waters and pollution sources) is limited. EPA has both been reluctant to intervene in the states and has also lacked resources to do so itself. Thus, there has been little

implementation of the provision which was enacted in 1972. For many years, EPA did little even to prod states to identify waters that remain pollution-impaired, much less undertake analyses to develop TMDLs, as required by the Act. The first TMDL regulations were issued in 1985, but only in 1992 did EPA issue regulations requiring states every 2 years to list waters that do not attain water quality standards and establish TMDLs to restore water quality. Under this schedule, states submitted their most recent 303(d) lists in April 1998. From these 1998 submissions, EPA estimates that approximately 20,000 waterways nationwide are impaired and require TMDLs.

Lawsuits have driven the greatest attention to TMDLs. Responding to the failure of both states and EPA to meet the statutory requirements, environmental groups have filed 40 lawsuits in 38 states in the last few years. The first such lawsuit was filed in 1986; the bulk have been filed since 1992. Environmentalists see implementation of section 303(d) as important both to achieving the overall goals and objectives of the Act and to pressuring EPA and states to address nonpoint and other sources which are responsible for many water quality impairments nationwide. Courts in a number of states have ordered or approved settlements for expeditious development of TMDLs.<sup>25</sup>

Because of the lawsuits and existing requirements of the law, in August 1997, EPA issued a policy which for the first time called on states to develop long-term schedules for implementing TMDLs. Under that policy, EPA directed states to establish TMDLs in order to meet water quality standards within 8 to 13 years.<sup>26</sup> One observer commented on this time frame, "Whether even this pace can be maintained, and whether it will produce load allocations and plans of sufficient quality to be effective, are legitimate and difficult questions."<sup>27</sup> Following listing of impaired waters, pursuant to section 303(d), development of TMDLs is being initiated at an increasing pace in some states, but most TMDLs remain to be completed. EPA estimates that about 1,500 TMDLs have been developed. Evidence of cleanup of waterways will take much longer to identify.

Estimating when individual waters will actually be cleaned up, following development of a TMDL, is difficult. The amount of time required for a waterbody to reach water quality standards can vary considerably, depending upon the complexity of the pollutants, the uses of the land surrounding the waterbody, and the commitment of the community or upstream dischargers to reducing pollutants. EPA's current regulations do not contain cleanup deadlines or targets.

---

<sup>25</sup> For information on TMDL litigation by state, see EPA's Web site: [<http://www.epa.gov/OWOW/tmdl/lawsuit1.html>].

<sup>26</sup> This is a longer time frame than is being mandated as a result of some of the TMDL litigation. The schedules for TMDLs in 19 lawsuits concluded by consent decrees and settlement agreements range from 4-1/2 years to 12 years.

<sup>27</sup> Houck, Oliver A. "TMDLs, Are We There Yet?: The Long Road Toward Water Quality-Based Regulation under the Clean Water Act." *Environmental Law Review*, v. 27, August 1997 p. 10399.

**Proposed Regulatory Changes.** In August 1999, EPA proposed comprehensive revisions to the TMDL regulations to strengthen the program.<sup>28</sup> The proposal set forth criteria for states, territories, and authorized Indian tribes to identify impaired waters and establish all TMDLs within 15 years. The proposal incorporated many of the recommendations of a Federal Advisory Committee Act (FACA) group which the Agency convened in 1996 to help develop a consistent national program.<sup>29</sup> At least two aspects of the proposal were controversial: (1) an explicit requirement that waterbodies impaired wholly or in part by nonpoint sources of pollutants be identified and that TMDLs be developed for such waters, and (2) a new requirement for an implementation plan. Further, explicit inclusion of nonpoint sources of pollution and potential impacts on agriculture and silviculture sources became highly contentious.<sup>30</sup> Vigorous challenge to all parts of the proposal came from states and various industry groups, arguing that EPA's proposed expansion of the current TMDL program is not clearly authorized in the law. EPA responded that it does have ample authority for the proposed changes.

Because of wide interest in the proposal, EPA extended the public comment period on the TMDL rule by 90 days, to Jan. 22, 2000, for a total comment period of 150 days. The Agency received an estimated 34,000 comments.

EPA's 1999 proposal had few strong supporters, for varying reasons. States, which would be directly affected by the proposal, criticized the burdens that new requirements would place on them. They are concerned that they lack the resources to meet tight deadlines to develop and implement TMDLs. Further, states say that TMDLs should not necessarily be prioritized over other elements of existing water quality management programs. Industry groups are concerned about impacts of new pollution control requirements. But, municipal and industrial point source groups urge states and EPA to ensure that TMDL requirements do not fall disproportionately on their discharges, while possibly failing to address nonpoint source contributions to impaired waters. Farm groups and others associated with nonpoint discharges question EPA's authority to include nonpoint source pollution in the TMDL program. The forestry industry vigorously criticized the potential impacts of the proposal on its activities. A number of environmentalists, who support the need for a stronger TMDL program, objected to the lengthy time periods in the proposal before water quality improvements are likely to occur. They criticize the lack of aggressive implementation of a program that has existed in the law since 1972.

Congressional interest has been high: during the 106<sup>th</sup> Congress, 13 congressional hearings were held, and six legislative proposals to modify the Clean

---

<sup>28</sup> 64 *Federal Register* No. 162, Aug. 23, 1999, pp. 46011-46055.

<sup>29</sup> U.S. Environmental Protection Agency. REPORT OF THE FEDERAL ADVISORY COMMITTEE ON THE TOTAL MAXIMUM DAILY LOAD (TMDL) PROGRAM. July 1998. 1 vol. Available at: [<http://www.epa.gov/OWOW/tmdl/advisory.html#fdr>].

<sup>30</sup> For additional information, see CRS Report RL30422, *EPA's Total Maximum Daily Load (TMDL) Program: Highlights of Proposed Changes and Impacts on Agriculture*.

Water Act or delay the rule were introduced.<sup>31</sup> EPA attempted to respond to the widespread criticism and signal flexibility on some of the most contentious points. While the revised TMDL rule was undergoing final Administration review, Congress adopted a provision in H.R. 4425, the FY2001 Military Constructions/FY2000 Urgent Supplemental Appropriations Bill, stating that no funds may be used in FY2000 or FY2001 to “make a final determination on or implement any new rule relative to” the August 1999 TMDL proposal. Because the President intended to sign H.R. 4425 into law but opposed the TMDL provision, the Administration accelerated its review, allowing the EPA Administrator to sign it on July 11 before the appropriations bill was signed on July 13 (P.L. 106-246). In the final rule, EPA acknowledged Congress’ action in H.R. 4425 and delayed the effective date of the rule’s program changes until 30 days after October 1, 2001, or the expiration of the rider, whichever comes first. In the interim, current program requirements under existing regulations and court-sanctioned TMDL schedules remain in place. The text of the final rule was published in the *Federal Register* on July 13.<sup>32</sup>

## **The Revised TMDL Regulation**

Current law and the existing TMDL program require states to identify waterbodies where water quality standards are not being attained and to establish a total maximum daily load of pollutants at a level that will attain water quality standards by allocating further required pollutant reductions among sources. The key changes proposed in August 1999 included: a new requirement for a more comprehensive list of impaired and threatened waterbodies; a new requirement that states, territories and authorized Indian tribes establish and submit schedules for establishing TMDLs; a new requirement that the listing methodologies be more specific, subject to public review, and submitted to EPA; clarification that TMDLs include nine specific elements; a new requirement for an implementation plan as a required element of a TMDL; and new public participation requirements.

The July 2000 final rule comprehensively revises current TMDL regulations. It builds on the current regulatory program and adds details, specific requirements, and deadlines. It retains the basic elements of the 1999 proposal for more comprehensive identification of impaired waters, schedules and minimum elements for TMDLs, and new public participation requirements.<sup>33</sup> The final revised program rule establishes new requirements for listing impaired waters and requires schedules for completing

---

<sup>31</sup> Since October 1999, hearings have been held by the full committee or subcommittees of the House Agriculture Committee, House Transportation and Infrastructure Committee, Senate Agriculture, Nutrition and Forestry Committee, and Senate Environment and Public Works Committee. Legislative proposals in the 106<sup>th</sup> Congress include H.R. 3609, H.R. 3625, H.R. 4502, S. 2041, S. 2139, and S. 2417. Another bill, H.R. 4922, was introduced after promulgation of the final rule in July.

<sup>32</sup> U.S. Environmental Protection Agency. “Revisions to the Water Quality Planning and Management Regulation and Revisions to the National Pollutant Discharge Elimination System Program in Support of Revisions to the Water Quality Planning and Management Regulation; Final Rules.” 65 *Federal Register* No. 135, July 13, 2000, pp. 43586-43670.

<sup>33</sup> For detailed information, see CRS Report RL30611, *EPA’s Total Maximum Daily Load (TMDL) Program: Highlights of the Final Revised Rule*.

TMDLs (the current program has no TMDL time schedules). It also establishes 11 minimum requirements for the content and development of TMDLs, including an implementation plan as a required element of a TMDL. Under the CWA, if a state fails to develop the list of impaired waters or develop a TMDL, EPA is required to do so. For states, the revised TMDL rules increase their responsibilities to identify impaired waters in four ways: revising the identification/listing methodology, establishing schedules for TMDL development, increasing public participation, and providing the identification/listing methodology in a new format.

For some interested parties, what is most of interest is what was **not** included in the final rule. EPA dropped several provisions that were most controversial in the proposal, including some potentially affecting agriculture and forestry.

**Agriculture and Forestry.** The final rule entirely dropped provisions that could have affected some agricultural and forestry activities and could have required some of them to obtain CWA discharge permits if they are contributing to water quality impairments. Much of the criticism of the TMDL proposal had focused on possible impacts on these sources, most of which currently are exempt from the Act's permit and enforcement requirements that apply to point source discharges from industries and municipalities. These parts of the proposal, especially those potentially affecting forestry, generated vigorous criticism (and, according to EPA, more than one-half of the 34,000 public comments submitted on the TMDL proposal), and much of EPA's response since August 1999 focused on explaining and clarifying provisions that were, in fact, a small part of the full TMDL proposal.

In 1999, EPA proposed that some forestry operations, animal feeding operations (AFOs), and aquatic animal production facilities not currently subject to CWA permits could be required by states to obtain permits. EPA justified the proposal on the basis that state water quality data indicate that pollutants from agriculture and forestry are causing water quality problems that prevent waters throughout the nation from meeting standards. The proposal detailed a narrow set of circumstances when this might occur – for example, only where there is an identifiable source of discharge, only where the discharge is causing a water quality impairment, only where the source is determined to be a significant contributor of pollutants to the impaired waterbody, and only where EPA is developing the TMDL in lieu of a state. However, agriculture and forestry groups strongly criticized the possibility that even some part of their activities could be subjected to CWA regulations.

Concerns of the forestry industry included challenging whether forestry's water quality impacts are significant enough to warrant EPA's proposed changes, suspicion that the reach of EPA's program would be broader than the Agency indicated, and a general fear of becoming subject to CWA regulation and enforcement. Before finalizing the revised rules, EPA first indicated that the provisions affecting forestry would be withdrawn for reproposal at a later date. But in the final rule, the Agency indicated that the forestry, AFO, and aquatic animal facilities provisions were dropped and that EPA does not intend to repropose any of them.

**Treatment of Nonpoint Sources in the TMDL Program.** One of the most contentious TMDL issues has been whether discharges from agricultural and other

nonpoint sources are included in the program or whether it is limited to point source impairments of waterbodies.

EPA points out that agency policy and rules since 1985 have fully included identification of waters impaired by all sources: point sources, nonpoint sources, and a combination of both. Further, administrative guidance documents on TMDL implementation likely have included all sources. Practically speaking, however, nonpoint sources have infrequently been affected by TMDL requirements, at least until recently, because of several factors: (1) limited state and federal implementation of section 303(d), especially before recent litigation and EPA's response to lawsuits, and (2) EPA's and states' long-standing focus on controlling pollution from point sources, which has changed in part as a result of data indicating that nonpoint pollution is a significant source of water quality impairments nationwide.

EPA's 1999 proposal and the final rule clarify that states are to identify waters impaired by all sources and to establish TMDLs whether the impairments are due to pollutants from point sources, nonpoint sources, or a blend of sources. In the proposal, EPA explained (64 *Federal Register* 46020-46021) its view that section 303(d) provides ample authority to list waterbodies impaired by nonpoint sources of pollution and to establish TMDLs for those waterbodies. In EPA's view, this is primarily because there is no express exclusion of nonpoint source-impaired waterbodies from the TMDL requirements of section 303(d) and because the definition of "pollutant" in the Act is not limited to point sources.

Some agriculture and forestry interests fear that, by including nonpoint source pollutants in TMDLs, EPA will *regulate* nonpoint sources pursuant to section 303(d) by requiring pollutant reductions from nonpoint sources. In response, EPA acknowledged in the July 2000 final rule that the Clean Water Act does not authorize the Agency to regulate nonpoint sources and that nonpoint source load reductions can only be required by states through their implementation of the Act. EPA's only ability to affect or encourage implementation of TMDLs involving nonpoint sources is indirect, by conditioning grants to states (e.g., CWA section 319 grants).<sup>34</sup>

Inclusion of nonpoint sources in the TMDL program remains a controversial topic.<sup>35</sup> However, groups representing major point source dischargers are concerned that if arguments against including nonpoint sources are successful, point sources will be unfairly and inequitably targeted to achieve more stringent water quality controls.

---

<sup>34</sup> 65 *Federal Register* 43632, July 13, 2000.

<sup>35</sup> In northern California, a group of farmers, plus agricultural and timber trade associations, challenged EPA's authority to control pollutant allocations to waters impaired solely by nonpoint sources. Plaintiffs in the lawsuit claimed that the CWA does not give EPA the authority to regulate nonpoint sources such as agricultural runoff. In March 2000, a federal district court rejected the plaintiffs' arguments and held that it would be impossible to carry out the TMDL program and implement water quality standards without taking nonpoint sources into account (*Pronsolino v. Marcus*, 91 F.Supp.2d 1337 (N.D. Cal. 2000)). The case has been appealed.

If EPA's views that section 303(d) applies to nonpoint source pollutants are ultimately rejected by the courts or policymakers, impacts of the TMDL program on agriculture would be considerably less, and fewer agricultural sources would be affected by TMDL requirements. However, barring change in the current policy, agriculture and forestry sources are not sheltered from the substance of the TMDL program. As states continue to implement both the current program under existing rules and the revised program in the future, if agricultural and forestry nonpoint sources are identified as contributing to water quality impairments, states may seek controls or management practices by those sources in order to attain water quality standards. Under both the existing and revised TMDL program, states are responsible for identifying impaired waters and allocating pollutant reductions needed to attain water quality standards. The revised program adds details, specificity, and deadlines to the existing program, but in either case, where nonpoint sources are associated with water quality impairments, states may call for measures (voluntary or otherwise) that will achieve necessary pollutant load reductions.

Moreover, concerning animal feeding operations, other federal activities independent of the TMDL program – i.e., implementation of the EPA-USDA AFO Strategy discussed previously -- could lead to more stringent regulation of some.

## **Further Developments**

Litigation challenging the July final TMDL rule has been filed in the federal District Court for the District of Columbia. Lawsuits have been filed by several industry and trade association groups representing nonpoint source dischargers. These suits argue, among other points, that EPA exceeded its authority in seeking to regulate agricultural and other nonpoint source operations. Two lawsuits have been filed by groups representing point source dischargers. Some in these groups raise legal issues about listing of impaired waters and similar implementation problems that could adversely affect utilities and other industries. Finally, several environmental groups have filed to intervene for the defense in some of the lawsuits and have also filed lawsuits of their own challenging parts of the final rule that they believe are not strong enough. The deadline for filing legal challenges was November 24, but EPA was reportedly seeking to extend that deadline through January 2001.

The FY2001 appropriation bill providing funds for EPA, P.L. 106-377, includes report language (H.Rept. 106-988) directing studies by the National Academy of Sciences on the scientific basis of the final TMDL rule and by EPA on the potential costs to states and businesses of implementing the revised TMDL rule. EPA also is to prepare a report on monitoring data needed to develop and implement TMDLs. The NAS report is to be submitted to Congress by June 1, 2001. The EPA report is to be submitted to Congress by February 21, 2001 (120 days after enactment of P.L. 106-377).

Under the Congressional Review Act, Congress has the opportunity to review an agency's rule and can disapprove the rule by passing a joint resolution, which the President could approve or disapprove, like any other bill presented for his signature. Joint resolutions to disapprove the TMDL rule were introduced in the House (H.J.Res. 104, H.J.Res. 105, and H.J.Res. 106) and in the Senate (S.J.Res. 50). Pursuant to the Congressional Review Act, Congress has 60 session or legislative

days to pass a joint resolution of disapproval. Because the session or legislative days between introduction of these resolutions and the end of the 106<sup>th</sup> Congress was less than 60 days, the Act provides that a joint resolution of disapproval could be re-filed in the 107<sup>th</sup> Congress, and the new Congress would then have 45 days to conduct a review of the rule. If such a resolution passed both Houses of Congress and was signed by the President, the rejected rule would be deemed not to have had any effect at any time, and current TMDL regulations would remain in effect.

## Glossary of Terms

**Animal feeding operation (AFO):** Agricultural enterprises where animals are kept and raised in confined situations. AFOs congregate animals, feed, manure and wastewater, and production operations on a small land area. Feed generally is brought to the animals, rather than the animals grazing or otherwise seeking feed in pastures, fields, or on rangeland.

**Animal feeding operations strategy:** A Plan issued jointly by USDA and EPA in March 1999 as part of the CWAP with the goal of having AFO owners and operators take actions to minimize water pollution from animal confinement facilities and land application of manure.

**Animal unit (AU):** As defined by USDA, an animal unit is 1,000 pounds of live weight of any given individual livestock species or combination of livestock species.

**Clean Water Act (CWA):** Federal Water Pollution Control Act (P.L. 92-500), as amended.

**Clean Water Action Plan (CWAP):** Administration initiative announced in February 1998 intended to coordinate federal efforts to address the nation's remaining water quality challenges.

**Comprehensive Nutrient Management Plan (CNMP):** A plan that identifies actions or priorities that will be followed to meet defined nutrient management goals at an agricultural operation. CNMPs may address, as necessary, feed management, manure handling and storage, land application of manure, land management, record keeping and other utilization options.

**Concentrated animal feeding operation (CAFO):** An animal feeding operation that meets EPA regulatory definitions, where more than 1,000 animal units are confined at the facility; or more than 300 animal units are confined at the facilities and (1) pollutants are discharged into navigable waters through a manmade ditch, flushing system, or other similar manmade device, or (2) pollutants are discharged directly into waters that originate outside of and pass over, across, or through the facility or come into direct contact with the confined animals.

**National Pollutant Discharge Elimination System (NPDES):** The principal discharge permit program of the CWA, authorized in section 402 of the law. NPDES permits, issued by EPA or authorized states, are required in order to discharge from a point source into waters of the United States. NPDES permits contain limits on what can be discharged, monitoring and reporting requirements.

**Nonpoint source:** Under the CWA, sources that do not meet the definition of point source, generally including diffuse runoff that does not enter the nation's waters from a discernible, confined and discrete conveyance. Nonpoint source pollution

is the by-product of a variety of land use practices, including farming, timber harvesting, mining, and construction. It also results when rainfall and snowmelt wash pollutants in urban areas into sewer systems and storm drains. Nonpoint sources are not subject to NPDES permit requirements. Under this law, they are managed primarily through the Act's section 319 program, which requires states to assess the extent to which nonpoint sources cause water quality problems and develop management programs to address them.

**Point source:** Under the CWA, means any discernible, confined and discrete conveyance, such as pipes, ditches, channels and tunnels, from which pollutants are or may be discharged. Point sources are subject to NPDES requirements. The term does include CAFOs but does not include agricultural stormwater discharges and return flows from irrigated agriculture.

**Total Maximum Daily Load (TMDL):** A quantitative assessment of water quality problems, pollution sources, and pollutant reductions needed to restore and protect a river, stream, lake, or coastal waterbody, as required by section 303(d) of the CWA.

**Watershed approach:** An approach to resource management that focuses on hydrologically defined drainage basins (watersheds) as the areas of study, rather than areas defined by political or other boundaries. The watershed protection approach identifies the primary threats to human and ecosystem health within a watershed and takes a comprehensive, integrated approach to solutions and actions.

## **Timeline of Identified Activities and Events In the AFO Strategy and TMDL Program**

**February 1998:** President and Vice President released the Clean Water Action Plan

**March 1999:** EPA and USDA issued the Unified National Strategy for Animal Feeding Operations (*AFO Strategy*<sup>1</sup>)

**May 1999:** USDA/NRCS issued the Policy for Nutrient Management and revised conservation practice standards for nutrient management (*AFO Strategy*)

**August 1999:** EPA issued draft guidance manual for NPDES permits for CAFOs (*AFO Strategy*)

EPA proposed revised regulations for the TMDL program

**December 1999:** USDA issued draft technical guidance for developing comprehensive nutrient management plans (*AFO Strategy*)

**2000-2005:** Round I CAFO permitting (*AFO Strategy*)

**January 2000:** EPA and states should issue general permits for large CAFOs with significant manure production. Permits expire in 5 years. (*AFO Strategy*)

**Jan. 22, 2000:** Public comment period on proposed TMDL regulations closed

**July 11, 2000:** EPA promulgated comprehensive revisions to existing TMDL regulations

**December 2000:** EPA and USDA will develop a coordinated technical transfer and education plan to disseminate results of AFO-related research (*AFO Strategy*)

EPA and USDA will develop a Virtual Center to serve as a single point of reference regarding research topics (*AFO Strategy*)

**Dec. 15, 2000:** EPA proposed revised effluent guidelines and permitting regulations for poultry, swine, beef and dairy cattle. (EPA is under court order) (*AFO Strategy*)

**May 15, 2001:** EPA shall submit to Congress a cost and capability assessment report on the AFO strategy (*EPA FY2000 appropriations, P.L. 106-74, H.Rept. 106-379*)

**2001:** CAFO inspections—EPA and states should inspect all CAFOs in priority areas by end of FY2001 (*AFO Strategy*)

---

<sup>1</sup> Based on schedules and information contained in the Unified National Strategy for Animal Feeding Operations, issued March 1999.

**Apr. 1, 2002:** States must provide EPA and the public with the methodology used to compile 303(d) lists of impaired waters. Similar submission is due on April 1 of each listing year – 4 years. (*TMDL*<sup>2</sup>)

**Dec. 15, 2002:** EPA will issue revised effluent limitation guidelines and permitting regulations for poultry, swine, beef and dairy cattle (EPA is under court order) (*AFO Strategy*)

**2002:** EPA and states should issue permits for smaller CAFOs with unacceptable conditions or significant contributions to water quality impairments by the end of this year. Permits expire in 5 years. (*AFO Strategy*)

**2003:** CAFO inspections—EPA and states should inspect all other CAFOs by end of FY2003 (*AFO Strategy*)

Large CAFOs that were issued general permits in 2000 should develop and fully implement Comprehensive Nutrient Management Plans (CNMPs) no later than the end of this year (*AFO Strategy*)

**Apr. 1, 2004:** States must submit lists of impaired waters for EPA approval. This list must include schedule for developing TMDLs that provides for establishment of TMDLs within 10 years (a 5-year extension is possible). Subsequent listing submissions are due every 4 years. (*TMDL*)

**2005:** Smaller CAFOs that were issued permits in 2002 should develop and begin implementation of CNMPs by the end of this year (*AFO Strategy*)

**2005-2010:** Round II CAFO permitting by EPA and states to reissue general permits and individual permits as they expire, incorporating new requirements resulting from revision of CAFO permit regulations and effluent limitation guidelines plus refinements to site-specific CNMPs and any additional requirements needed to achieve water quality goals (i.e., state water quality standards for nutrients, TMDLs) (*AFO Strategy*)

---

<sup>2</sup> Based on revised regulations for the TMDL program issued in July 2000.