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Water Quality: Implementing the Clean Water Act

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Claudia Copeland
Resources, Science, and Industry Division

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SUMMARY

Congress enacted the most recent major amendments to the Clean Water Act in 1987 (P.L. 100-4). Since then, the Environmental Protection Agency (EPA), states, and others have been working to implement the many program changes and additions mandated in the law. At issue today — 30 years after enactment of the core law — is what progress is being made to achieve its goals. In general, states and environmental groups fault EPA for delays in issuing guidance and assistance needed to carry out the provisions of the law. EPA and others are critical of states, in turn, for not reaching beyond conventional knowledge and approaches to address their water quality problems. Environmental groups have been criticized for insufficient recognition of EPA's and states' need for flexibility to implement the Act. Finally, Congress has been criticized for not providing adequate resources to meet EPA and state needs.

Three issues have predominated recently in connection with implementation of the law. The first involves requirements under current law for states to develop total maximum daily loads (TMDLs) to restore pollution-impaired waters. The second issue involves the nonpoint pollution management provisions added in 1987. States are developing management programs describing methods that will be used to reduce nonpoint pollution, which may be responsible for as much as 50% of the nation's remaining water quality problems. Most observers agree that implementation of nonpoint source control measures is significantly hindered by lack of resources, including federal assistance. EPA adopted program guidance intended to give states more flexibility and to speed up progress in nonpoint source control.

The third issue is funding to construct municipal wastewater treatment plants under the State Revolving Fund (SRF) provisions of the 1987 amendments. Budgetary constraints on federal aid for wastewater treatment and large remaining funding needs are a continuing concern.

Reauthorization of the Act was on the agenda of the 104th Congress, when the House passed H.R. 961, but no amendments were enacted. No major legislative activity occurred in the 105th or 106th Congresses, although legislation was passed affecting some individual program areas. In the 107th Congress, legislation focused on water infrastructure funding legislation, but no bill was enacted. Recent attention also has focused on EPA rules for the Act's TMDL program issued in 2000 (see CRS Issue Brief IB10108, *Clean Water Act Issues in the 108th Congress*).

The Bush Administration has proposed few new clean water initiatives. However, on January 13, the Agency announced a Water Quality Trading Policy intended as an innovative approach to assist industry and municipalities in meeting Clean Water Act obligations.

MOST RECENT DEVELOPMENTS

On July 25, the House approved legislation providing FY2004 appropriations for EPA (H.R. 2681). As passed, the bill provides $1.2 billion for grant funds for state clean water infrastructure (SRF) programs, $350 million more than was requested by the President, but $150 million less than the FY2003 level. The bill also includes $195 million for targeted water infrastructure grants.

Necessary measures and legislation to assist wastewater utilities in conducting vulnerability assessments to strengthen security of their facilities are receiving attention in the 108th Congress. The House has passed a bill (H.R. 866) and a Senate committee has approved a similar bill (S. 1039) authorizing grant assistance for assessment activities.

The Bush Administration is continuing its review of controversial regulations issued by the Clinton Administration in 2000 to strengthen existing rules that govern a Clean Water Act (CWA) program intended to restore impaired waters, the Total Maximum Daily Load (TMDL) program. On March 19, EPA withdrew the 2000 TMDL rule while it considers initiating an entirely new rule or other options; no further timeframe has been announced.

BACKGROUND AND ANALYSIS

The Act and Recent Amendments

The Federal Water Pollution Control Act, or Clean Water Act, is the principal law concerned with polluting activity in the nation's streams, lakes, and estuaries. Originally enacted in 1948, it was totally revised by amendments in 1972 (P.L. 92-500) that gave the Act its current form and spelled out ambitious programs for water quality improvements that are now being put in place by industries and cities. Congress made certain fine-tuning amendments in 1977 (P.L. 95-217) and 1981 (P.L. 97-117) and enacted the most recent major amendments in 1987 (P.L. 100-4).

The Act consists of two major parts: regulatory provisions that impose progressively more stringent requirements on industries and cities in order to meet the statutory goal of zero discharge of pollutants, and provisions that authorize federal financial assistance for municipal wastewater treatment construction. Industries were to meet pollution control limits first by use of Best Practicable Technology and later by improved Best Available Technology. Cities were to achieve secondary treatment of municipal wastewater (roughly 85% removal of conventional wastes), or better if needed to meet water quality standards. Both major parts are supported by research activities authorized in the law, plus permit and penalty provisions for enforcement. Programs are administered by the Environmental Protection Agency (EPA), while state and local governments have the principal day-to-day responsibility for implementing the law. (For additional information, see CRS Report RL30030, *Clean Water Act: A Summary of the Law*.)

The most recent major amendments to the law are the Water Quality Act of 1987 (P.L. 100-4). These amendments culminated 6 years of congressional efforts to extend and revise the Act and are the most comprehensive amendments to it since 1972. They recognize that, despite much progress to date, significant water quality problems persist. Among its many provisions, the 1987 legislation:

- established a comprehensive program for controlling toxic pollutant discharges, beyond that already provided in the Act, to respond to so-called "toxic hot spots;"

- added a program requiring states to develop and implement programs to control nonpoint sources of pollution, or rainfall runoff from farm and urban areas, plus construction, forestry, and mining sites;

- authorized a total of $18 billion for wastewater treatment assistance under a combination of the Act's traditional construction grants program through FY1990 and, as a transition to full state funding responsibility, a new program of grants to capitalize State Revolving Funds, from FY1989-1994;

- authorized or modified a number of programs to address water pollution problems in diverse geographic areas such as coastal estuaries, the Great Lakes, and the Chesapeake Bay; and

- revised many of the Act's regulatory, permit, and enforcement programs.

Legislative Activity after P.L. 100-4. Congressional oversight of water quality issues was limited following enactment of P.L. 100-4. Subcommittees held general oversight hearings, as well as several hearings on individual issues (wetlands protection, Chesapeake Bay programs, and toxics contamination of Great Lakes waters), but reserved extensive review and oversight until implementation had been underway for some time.

EPA, states, industry, and other citizens continue to implement the 1987 legislation, including meeting the numerous requirements and deadlines in it. Three sets of issues have been the focus of attention regarding the pace and effectiveness of implementation: the toxic pollutant control provisions, nonpoint pollution management provisions, and the State Revolving Fund provisions to transfer wastewater treatment funding responsibility to the states after 1994. Attention has also focused on the cost-effectiveness of clean water requirements and flexibility of implementation.

Implementation issues discussed below were the basis for legislation to reauthorize the Clean Water Act during the 103rd Congress. Committees held hearings in 1993, and the Senate Environment and Public Works Committee reported a comprehensive reauthorization bill, S. 2093, in May 1994. Legislation also was introduced in the House, but no further action occurred because of controversies specific to the Act and the pending bills, as well as controversies over regulatory relief issues that became barriers to a number of bills in 1994.

In the 104th Congress, the House moved quickly on Clean Water Act legislation, approving a comprehensive reauthorization bill in May 1995. H.R. 961 would have amended many of the regulatory and standards provisions of the law, required EPA to use extensive

new risk assessment and cost-benefit analysis procedures, and increased flexibility with regulatory relief from current clean water programs. However, the Senate did not take up the Clean Water Act during the 104th Congress; thus, no legislation was enacted.

1997 marked the 25-year anniversary of the 1972 Clean Water Act amendments, which established the goals, objectives, and structure that continue to guide the law today. In the 105th Congress, no major committee activity over the Act occurred either in the House or the Senate. In the 106th Congress, legislative attention focused on individual program areas of the law; no comprehensive reauthorization legislation was introduced. However, activity on bills dealing with specific water quality issues did occur. Congress passed a bill to strengthen protection of coastal recreation waters through upgraded water quality standards and coastal waters monitoring programs (P.L. 106-284). Congress also passed a bill reauthorizing several existing CWA programs (i.e., Chesapeake Bay, clean lakes, and the National Estuary Program; P.L. 106-457). Further, Congress passed a bill to authorize CWA grant funding for wet weather sewerage projects (included as a provision of P.L. 106-554, FY2001 Consolidated Appropriations bill). (For detailed information, see CRS Report RL30908, *Clean Water Act Issues and Legislation in the 106th Congress*.) In the 107th Congress, attention was focused on bills to authorize funding for water infrastructure projects, but no legislation was enacted. However, before adjournment, Congress approved the Great Lakes Legacy Act (P.L. 107-303), which authorizes $200 million for EPA to carry out projects to remediate sediment contamination in the Great Lakes. (See CRS Report RL31683, *Clean Water Act: A Review of Issues and Legislation in the 107th Congress*.)

More generally, following the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon, congressional attention has focused on security, preparedness, and emergency response issues. Among the many topics of interest is protection of the nation's water infrastructure facilities (both wastewater and drinking water) from possible physical damage, biological/chemical attacks, and cyber disruption. (For information, see CRS Report RS21026, *Terrorist and Security Issues Facing the Water Infrastructure Sector*.) Policymakers are considering a number of legislative options in this area, including enhanced physical security, communication and coordination, and research. Physical security of wastewater treatment plant operations is one of the issues under consideration. In October 2002, the House passed legislation to provide $200 million in grants for security activities at wastewater treatment plants (H.R. 5169). Similar legislation was introduced in the Senate (S. 3037), but no further action occurred. In the 108th Congress, H.R. 866 (identical to H.R. 5169 as passed in 2002) was introduced on February 13, was approved by the House Transportation and Infrastructure Committee on February 26 (H.Rept. 108-33), and passed by the House on May 7. A similar Senate bill, S. 1039, was approved by the Senate Environment and Public Works Committee on May 15.

Although much progress has been made in achieving the ambitious goals established in the law 30 years ago to restore the 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, EPA recently reported in the 2000 National Water Quality Inventory Report that 39% of assessed river and stream miles and 45% of assessed lake acres do not meet applicable water quality standards and were found to be impaired for one or more desired uses. The types of remaining water quality problems are diverse, ranging from runoff from farms and ranches, city streets, and other diffuse sources to metals (especially

mercury), organic and inorganic toxic substances discharged from factories and sewage treatment plants, as well as nonpoint sources.

The Bush Administration has been reviewing a number of current clean water programs and rules but has proposed few new initiatives. However, on January 13, the Agency announced a Water Quality Trading Policy intended as an innovative approach to assist industry and municipalities in meeting Clean Water Act obligations. Trading allows one source to meet regulatory requirements by using pollutant reductions created by another source that has lower pollution control costs. The policy revises a May 2002 proposal which reflected lessons learned from a similar policy issued by the Clinton Administration in 1996. Water quality or effluent trading projects have occurred in the United States since the early 1980s. (For information, see CRS Report RS21403, *EPA's Water Quality Trading Policy*.)

Total Maximum Daily Load (TMDL) Requirements

Section 303(d) of the Clean Water Act requires states to identify pollutant-impaired water segments and develop "total maximum daily loads" (TMDLs) that set the maximum amount of pollution that a water body can receive without violating water quality standards. If a state fails to do so, EPA is required to develop a priority list for the state and make its own TMDL determination. Most states have lacked the resources to do TMDL analyses, which involve complex assessment of point and nonpoint sources and mathematical modeling, and EPA has both been reluctant to override states and has also lacked resources to do the analyses. Thus, for many years there was little implementation of the provision that Congress enacted in 1972. In recent years, national and local environmental groups have filed more than 40 lawsuits in 38 states against EPA and states for failure to fulfill requirements of the Act. Of the suits tried or settled to date, 22 have resulted in court orders requiring EPA to develop TMDLs expeditiously. EPA and state officials have been concerned about diverting resources from other high-priority water quality activities in order to meet the courts' orders. In 1996, EPA created an advisory committee to solicit advice on the TMDL problem. Recommendations from the advisory committee formed the basis of program changes that EPA proposed in August 1999. The 1999 proposal set forth criteria for states, territories, and authorized Indian tribes to identify impaired waters and establish all TMDLs within 15 years. It would require more comprehensive assessments of waterways, detailed cleanup plans, and timetables for implementation. (For additional information, see CRS Report 97-831, *Clean Water Act and Total Maximum Daily Loads (TMDLs) of Pollutants*.)

The 1999 proposal was highly controversial because of issues such as burdens on states to implement a revised TMDL program and potential impacts on some agriculture and forestry sources which are not now subject to CWA regulations. The controversies also have drawn congressional attention, and 13 congressional hearings were held during the 106th Congress by four separate House and Senate committees. Public and congressional pressure on EPA to revise or withdraw the TMDL proposal entirely was great. Several legislative proposals to modify EPA's TMDL proposals or delay implementation of final rules were introduced (For information, see CRS Report RL30908, *Clean Water Act Issues and Legislation in the 106th Congress*).

TMDL issues also were addressed in FY2001 appropriations bills. Before the July 4, 2000, congressional recess, the House and Senate approved a FY2001 Military Construction

and emergency supplemental appropriations bill (H.R. 4425, H.Rept. 106-710) that included a provision to prevent EPA from spending any funds in FY2000 or FY 2001 to finalize or implement new TMDL rules. President Clinton signed the bill on July 13, 2000, in spite of the TMDL restriction, which the Administration opposed (P.L. 106-246). However, the EPA Administrator signed the new rules on July 11 but delayed the effective date until October 2001 when the limitation in P.L. 106-246 would expire. (For information, see CRS Report 30611, *EPA's Total Maximum Daily Load (TMDL) Program: Highlights of the Final Revised Rule*.) EPA's signing of the rule before the rider took effect led to more criticism.

The FY2001 appropriations act providing funds for EPA, P.L. 106-377, included report language mandating studies by the National Academy of Sciences (NAS) and EPA on the scientific basis of the TMDL program and on the potential costs to states and businesses of implementing the revised TMDL rules. The NAS report, examining the role of science in the TMDL program, was issued June 15, 2001. It did not specifically analyze the July 2000 revised regulations. The NAS panel concluded that scientific knowledge exists to move forward with the TMDL program and recommended that EPA and states use adaptive implementation for TMDL development. In many cases, the report said, water quality problems and solutions are obvious and should proceed without complex analysis. In other cases, solutions are more complex and require a different level of understanding and something like phased implementation. A House Transportation Committee subcommittee held a hearing on the NAS report on June 28, 2001. In August 2001, EPA issued a draft report on costs of the 2000 TMDL program. It estimates that average annual costs to states and EPA of developing TMDLs could be $63-$69 million, while implementation costs for pollutant sources could be between $900 million and $4.3 billion per year, depending on states' actions. (For information, see CRS Report RL31091, *The Clean Water Act's TMDL Program: Newly Presented Options and Cost Estimates*.) The General Accounting Office recently reported that inconsistent monitoring, data collection, and listing procedures used by states to identify impaired waters have hindered efforts to develop effective TMDL programs (*Water Quality: Inconsistent State Approaches Complicate Nation's Efforts to Identify Its Most Polluted Waters*, GAO-02-186).

The Bush Administration announced in October 2001that it would delay the effective date of the 2000 rule until April 30, 2003, to allow for further review. That announcement came after a federal court granted the Administration's request for a similar 18-month suspension of litigation which is challenging the regulation (nearly a dozen interest groups sued EPA over various parts of the TMDL rule). In the interim, current program requirements under existing regulations issued in 1992 and court-sanctioned TMDL schedules remain in place. A House Transportation and Infrastructure subcommittee held an oversight hearing in November 2001 concerning EPA's plans to revise the rule. Most recently, on March 19, 2003, EPA withdrew the July 2000 TMDL rule (68 *Federal Register* 13607). EPA officials said that additional time beyond May 2003 is needed to decide whether and how to revise the current program and that allowing the rule to take effect on April 30 would be disruptive of ongoing review efforts.

Having withdrawn the 2000 rule, EPA is reportedly considering other options, including initiating an entirely new rule, but no specific plans or timeframe have been announced. In mid-2002, EPA developed a draft revised rule that it informally circulated among interest groups and federal agencies for many months, but no formal action has occurred. One EPA view, widely reported, is that a new rule would be nice, but not essential, because EPA

believes that states are and will continue to improve the pace at which TMDLs are established, even under existing rules. Most environmentalists say that, short of retaining the 2000 rule, the best action would be to leave the 1992 rules in place, because, though flawed, those rules are preferable to a new rule that might significantly weaken the program. States, municipalities, and many industries have urged EPA to develop a new rule with greater flexibility in implementation and enforcement than either the 1992 regulations or the 2000 revisions.

Nonpoint Pollution Management

The 1987 amendments added a new Section 319 to the Act, under which states were required to develop and implement programs to control nonpoint sources of pollution, or rainfall runoff from farm and urban areas, as well as construction, forestry, and mining sites. Previously, the Act had largely focused on controlling point sources, while helping states and localities to plan for management of diverse nonpoint sources. Yet, as industrial and municipal sources have abated pollution, uncontrolled nonpoint sources have become a relatively larger portion of remaining water quality problems — perhaps contributing as much as 50% of the nation's water pollution.

States were required to identify waters not expected to meet water quality standards — because of nonpoint source pollution and to implement plans for managing pollution from runoff. Federal grants totaling $400 million were authorized to cover as much as 60% of the costs of implementing a state's management plan.

The funding issue has become more urgent as states have moved from assessment and plan development to management, since Congress intended that Section 319 funds be used primarily to implement nonpoint pollution controls on the ground. EPA has urged states to use a portion of monies that they receive under Section 106 of the Act, water quality program assistance grants, for nonpoint source activities. But, doing so utilizes money otherwise needed for core state efforts, such as permit issuance, monitoring, enforcement, etc. Several concerns have been raised about the Section 319 program.

Adequacy of Plans. Whether state plans have comprehensively addressed nonpoint pollution problems is a lingering question. Some environmental groups criticize EPA for providing inadequate guidance on methods, or management practices, to advance control of nonpoint sources beyond known problems and existing implementation steps, such as voluntary compliance and public education. Moreover, some believe that states should be required to repeat the nonpoint source assessments, which were one-time-only activities under the 1987 law, in order to reflect improvements in technical and scientific information.

Quality of Plans. EPA officials acknowledge that the quality of assessment reports and management plans was quite variable and that many (including some that have been approved) were disappointing. Several reasons were cited: staff limitations affecting states' and EPA regions' ability to prepare and oversee plans; lack of funding; limited federal clout, since the program is essentially voluntary; and variations in the way regions administered the program.

Funding. Precise estimates of the cost to manage nonpoint source pollution are not available, but in 1994 EPA estimated that current and planned spending by private sources, states, and cities under provisions of current law is between $750 million and $1.1 billion per year. Without adequate funding to implement state management plans, it is doubtful that much will be achieved under Section 319 to control nonpoint source pollution. Lack of funding risks the possibility of Section 319 becoming another the Section 208: in the 1970s, states and regions prepared areawide waste treatment management plans under Section 208 of this Act, intended to comprehensively cover point and nonpoint sources. No implementation monies were authorized, and few of the plans were realized, as a result.

Program Changes. EPA and states negotiated changes intended to give the 319 program a new framework by giving states more flexibility. As a result, in 1996, EPA issued revised guidance concerning state management of nonpoint source programs that is intended to recognize that federal and state processes need to be streamlined to increase program effectiveness and to speed progress towards solving nonpoint pollution problems. The revised guidance outlines nine key elements to be reflected in state programs (e.g., strong partnerships with stakeholders, explicit short and long term goals for protecting surface and ground waters). States that meet the nine criteria can be designated as leadership states, making them eligible for incentives such as multi-year grants, reduced amount and frequency of reporting, and self-assessment by states themselves. These incentives contrast with the previous program approach, in which states competed for grants and those which did not meet particular requirements received less grant money.

Significance for TMDLs. Attention has focused on nonpoint source management efforts as a result of recent emphasis by EPA and states on meeting TMDL requirements (see **TMDL** discussion, above). Scrutiny of nonpoint pollution problems and how they are being addressed has intensified as policymakers and program officials assess additional steps to continue progress towards the Act's water quality goals. EPA has recently begun to explicitly link implementation of Section 319 with TMDL activities. For example, in September 2001, EPA published guidance saying that grants awarded under Section 319 should have a concentrated focus on the development and implementation of TMDLs for nonpoint sources of pollution, although funds will still be awarded to activities other than TMDLs. However, states and agricultural interests criticized the guidance as being too restrictive, and in August 2002, EPA modified the guidance which continues to encourage development of nonpoint source TMDLs but gives states more flexibility to do so, especially in areas that lack formally-established TMDLs. Since FY2001, $100 million of Section 319 grant funds is being devoted to developing and implementing nonpoint source TMDLs.

State Revolving Fund Program

The Act's program of financial aid for municipal wastewater treatment plant construction was a central and controversial aspect of debate on the 1987 amendments. Since 1972 Congress has provided more than $75 billion to assist wastewater treatment construction, but funding needs remain very high: an additional $181 billion nationwide through the year 2020 for all types of projects eligible for funding under the Act, according to the most recent estimate by EPA and the states that was completed in 2002. In September 2002, EPA released a study, called the Gap Analysis, which assesses the difference between current spending for wastewater infrastructure and total funding needs (both capital and

operation and maintenance). EPA estimates that, over the next two decades, the United States needs to spend nearly $390 billion to replace existing wastewater infrastructure systems and to build new ones. Funding needs for operation and maintenance (not eligible for Clean Water Act funding) are an additional $148 billion, the Agency estimates. According to the study, if there is no increase in investment, there will be about a $6 billion gap between current annual capital expenditures for wastewater treatment ($13 billion annually) and projected spending needs. The study also estimates that, if wastewater spending increases by 3% annually, the gap would shrink by nearly 90% (to about $1 billion annually). At issue has been what should be the federal role in assisting states and cities, especially in view of such high projected funding needs.

The 1987 amendments extended through FY1990 the traditional Title II program of grants for sewage treatment project construction, under which the federal share was 55% of project costs. The 1987 law initiated a program of grants to capitalize State Water Pollution Control Revolving Funds (SRFs), or loan programs, in a new Title VI. States are required to deposit an amount equal to at least 20% of the federal capitalization grant in the Fund established under Title VI. Under the revolving fund concept, monies used for wastewater treatment construction would be repaid by loan recipients to the states (repayment was not required for grants under the Title II program), to be recycled for future construction in other communities, thus providing an ongoing source of financing. The expectation in 1987 was that the federal contributions to SRFs would assist in making a transition to full state and local financing by FY1995. Although most states believe that the SRF is working well, early funding and administrative problems have delayed the anticipated shift to full state responsibility. Thus, SRF issues have been prominent on the Clean Water Act reauthorization agenda in recent Congresses. (For further information, see CRS Report 98-323, *Wastewater Treatment: Overview and Background*.)

SRF monies may be used for certain types of financial activity, including loans for as much as 100% of project costs (at or below market interest rates, including interest-free loans), to buy or refinance cities' debt obligation, or as a source of revenue or security for payment of principal and interest on a state-issued bond. SRF monies also may be used to provide loan guarantees or credit enhancement for localities.

Loans made by a state from its SRF are to be used first to assure progress towards the goals of the Act and, in particular, on projects to meet the standards and enforceable requirements of the Act. After states achieve those requirements of the Act, SRF monies also may be used to implement nonpoint pollution management and national estuary programs.

Table 1 summarizes wastewater treatment funding under Title II (traditional grants program) and Title VI (capitalization grants for revolving loan programs). (**Note**: **Table 1** does *not* include appropriations for special project grants in individual cities.)

One issue of interest is impacts on small communities. These entities in particular have found it difficult to participate in the SRF loan program, since many are characterized by narrow or weak tax bases, limited or no access to capital markets, lower relative household incomes, and higher per capita needs. They often find it harder to borrow to meet their capital needs and pay relatively high premiums to do so. Meeting the special needs of small towns, through a reestablished grant program, other funding source, or loan program with special rules, has been an issue of interest to Congress.

Congressional oversight of wastewater/SRF issues has focused on several points, including: many small communities have found it difficult to participate in the SRF loan program, and the lack of funds for high-cost categories of projects such as correcting combined sewer overflows. Although there has been some criticism of the SRF program, and debate continues over specific concerns (such as small community impacts), the basic approach is well supported in Congress and elsewhere. Congress used the clean water SRF as the model when it established a drinking water SRF in the Safe Drinking Water Act in 1996 (P.L. 104-182). (For further information, see CRS Report 97-677, *Safe Drinking Water Act: State Revolving Fund Program*.)

Table 1. Wastewater Treatment Funding

(billions of dollars)

	Authorizations		Appropriations	
Fiscal Year	**Title II**	**Title VI**	**Title II**	**Title VI**
1986	$2.4	—	$1.8	—
1987	2.4	—	2.36	—
1988	2.4	—	2.3	—
1989	1.2	1.2	0.941	0.941
1990	1.2	1.2	0.967	0.967
1991	—	2.4	—	2.1
1992	—	1.8	—	1.95
1993	—	1.2	—	1.93
1994	—	0.6	—	1.22
1995	—	—	—	1.24
1996	—	—	—	2.07
1997	—	—	—	0.625
1998	—	—	—	1.35
1999	—	—	—	1.35
2000	—	—	—	1.345
2001	—	—	—	1.35
2002	—	—	—	1.35
2003	—	—	—	1.34

Other Issues

A number of other Clean Water Act issues continue to receive attention, as well. Like those discussed previously, many of these topics have recently been part of Congress' agenda in connection with reauthorization (see CRS Issue Brief IB10069).

Stormwater Discharges. EPA has struggled since the 1970s to regulate industrial and municipal stormwater discharges in a workable yet comprehensive manner. In P.L. 100-4, Congress established firm deadlines and priorities for EPA to require permits for these discharges of stormwater that is not mixed or contaminated with household or industrial waste. EPA issued rules in November 1990 (21 months after the statutory deadline) that addressed the process of applying for stormwater permits. The Agency worked with an advisory committee of stakeholders beginning in 1994 to develop rules for regulating smaller stormwater dischargers, which were not covered by EPA's 1990 rules. Rules for smaller dischargers (unregulated industries and small cities) were issued in October 1999. The burden of complying with the rules continues to be an issue with many affected industries and municipalities, especially small cities, which face compliance deadlines beginning in March 2003. (For further information, see CRS Report 97-290, *Stormwater Permits: Status of EPA's Regulatory Program*.)

Combined and Separate Sewer Overflows. A total of 772 municipalities have combined sewers where domestic sanitary sewage, industrial wastes, infiltration from groundwater, and stormwater runoff are collected. These systems serve approximately 40 million persons, mainly in older urban and coastal cities. Normally (under dry-weather conditions), the combined wastes are conveyed to a municipal sewage treatment plant.

Properly designed, sized, and maintained combined sewers can be an acceptable part of a city's water pollution control infrastructure. However, combined sewer overflow (CSO) occurs when the capacity of the collection and treatment system is exceeded due to high volumes of rainwater or snowmelt, and the excess volume is diverted and discharged directly into receiving waters, bypassing the sewage treatment plants. Often the excess flow that contains raw sewage, industrial wastes, and stormwater is discharged untreated. Many combined sewer systems are found in coastal areas where recreational areas, fish habitat and shellfish beds may be contaminated by the discharges.

In 1994 EPA issued a CSO permitting strategy after negotiations with key stakeholder groups. Cities were to implement nine minimum controls by January 1, 1997 (e.g., proper operation and maintenance programs for sewer systems and pollution prevention programs). The EPA strategy did not contain a deadline for issuance of permits or for controlling CSOs. Deadlines will be contained in plans developed by permitting authorities, which primarily are states. Controls are available and generally are based on combinations of management techniques (such as temporary retention of excess flow during storm events) and structural measures (ranging from screens that capture solids to construction of separate sewer systems). EPA officials stated in 1998 that only about one-half of the cities with combined sewers implemented the minimum measures called for in the 1994 strategy. EPA is now working with states to remind cities of their obligations to address CSO problems. However, a formal enforcement strategy is not contemplated.

A more recent issue concerning some cities is the problem of overflows from municipal separate sanitary sewers (SSOs) that are not CSOs because they transport only sanitary wastes. Discharges of untreated sewage from these sewers occur from manholes, broken pipes and deteriorated infrastructure, and undersized pipes, and can occur in wet or dry weather. EPA estimates that there are about 18,000 municipalities with separate sanitary sewers, all of which can, under certain circumstances, experience overflows. No explicit EPA or statutory control policy currently exists. In 1995, EPA convened a stakeholders' group to discuss how to address those overflows that pose the highest environmental and public health risk first. On January 5, 2001, the Clinton Administration finalized regulations to improve the operation of municipal sanitary sewer collection systems, reduce the frequency and occurrence of overflows, clarify the existing CWA prohibition on SSO discharges, and clarify circumstances appropriate for enforcement action. The new rules, not yet published, are being reviewed by the Bush Administration.

Funding CSO and SSO projects is a major concern of states and cities. The most recent clean water needs survey estimating the cost of projects to meet objectives of the CWA found that the largest needs category, totaling $51 billion, is to address CSOs. In December 2000, Congress passed legislation, the Wet Weather Water Quality Act, authorizing a 2-year $1.5 billion grants program to reduce wet weather flows from municipal sewer systems. This bill was included in H.R. 4577, the FY2001 Consolidated Appropriations bill (Section 112 of Division B, P.L. 106-554). The measure also codified EPA's 1994 CSO policy on sewer overflows (discussed above).

Wetlands. Public debate over the nation's wetlands has come to focus on questions of the effectiveness and costs of wetland resource protection efforts, rather than on whether such resources should be preserved. The permit program authorized by Section 404 of the Clean Water Act is one of the major federal programs that protects wetlands. However, environmentalists and others have criticized Section 404 as being inadequate to prevent the continuing loss of wetlands, due to statutory exemption of certain types of actions on farmlands and weak enforcement. Those wishing to develop wetlands maintain that existing laws are already an intrusion on private land-use decisions and that further federal involvement is unwarranted. How best to protect remaining wetlands and regulate activities taking place in wetlands has become one of the most contentious environmental policy issues facing Congress and was a prominent element of clean water debate during the 103rd and 104th Congresses. The 107th Congress examined few wetlands issues, and the main activity concerned wetlands provisions of omnibus farm bill legislation. Although there was no legislative activity on Section 404, committee hearings were held on several issues arising from judicial decisions, administrative actions of interest, and implementation of current law. In September 2002, the House Government Reform Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs held a hearing on the government's response to a 2001 Supreme Court case which narrowed the government's regulatory jurisdiction over isolated waters, *Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers* (531 U.S. 159 (2001)). Committee Members and public witnesses indicated that a lack of guidance on the government's interpretation of the case and other recent court decisions has led to inconsistent regulatory decisions in individual regions of the country. Some federal courts have interpreted *SWANCC* narrowly, thus limiting its effect on current permit rules, while a few read the decision more broadly. On January 15, EPA and the Corps issued guidance to their staffs in the field for regulating in light of *SWANCC* and related cases. At the same time, the agencies issued an advanced notice of proposed rulemaking

(ANPRM), seeking public comment on possible rule changes not yet proposed but which may be needed in response to the recent legal decisions. The public comment period on the ANPRM closed April 16; it is unknown whether or when the Administration will propose actual rule changes. On June 10, the Senate Environment and Public Works Committee held a hearing on the status of implementing wetlands regulations. Some Members and witnesses expressed frustration over government agencies' inaction on clarifying rules, but agency witnesses said Congress has responsibility to clarify jurisdictional issues in the law. (For additional information, see CRS Issue Brief IB97014, *Wetland Issues*.)

Strategy Concerning Animal Feeding Operations. Public and policy attention has been increasing on steps to minimize public health and environmental impacts of runoff from animal feeding operations (AFOs). AFOs are agricultural facilities that confine livestock feeding activities, thus concentrating animal populations and waste. Animal waste is frequently applied to land for disposal and to utilize the nutrient value of manure to benefit crops. If not managed properly, however, it can pose risks to water quality and public health, contributing pollutants such as nutrients, sediment, pathogens, and ammonia to the environment. In 1999, EPA and the U.S. Department of Agriculture initiated a national AFO strategy to improve compliance and strengthen existing regulations that are intended to control adverse environmental impacts of these agricultural activities.

Existing EPA regulations, issued in the 1970s, require CWA discharge permits for the largest AFOs, termed confined animal feeding operations (CAFOs). However, EPA acknowledges that compliance and enforcement of these permit rules has been poor (less than one-third of covered facilities actually have permits) and that the regulations themselves are outdated. For example, they do not reflect changed waste management practices or address the need for management plans dealing with land application of manure. The 1999 national strategy contains a number of short-term and long-term steps to improve compliance and strengthen existing regulations, obtain better information through data collection and research on water quality impairments due to AFOs, and together with other federal agencies and states, coordinate activities related to AFOs. In December 2000, EPA proposed rules to increase the number of AFOs required to obtain CWA permits and to restrict land application of animal wastes. In May 2001, a House Transportation and Infrastructure subcommittee held an oversight hearing on the December regulatory proposal. Issues that Congress has addressed during this period include impacts and costs imposed on the agricultural sector, especially small farmers, and how the proposed combination of regulatory and incentive-based measures in the 1999 National AFO Strategy will achieve control of agricultural runoff that adversely affects water quality. (For additional information, see CRS Report RL30437, *Water Quality Initiatives and Agriculture*.) In legislation providing FY2000 funding for EPA (P.L. 106-74), Congress directed EPA in conjunction with USDA to submit a report to Congress by May 15, 2001, providing a cost and capability assessment of the AFO strategy. This report was expected to be delivered to Congress in December 2001.

On December 15, 2002, the EPA Administrator signed final revised rules to regulate waste discharges from CAFOs. The rules were published in the *Federal Register* on February 12, 2003, with an effective date of April 14. The final rules, which the Agency was under court order to issue by December 2002, modified the Clinton Administration's 2000 proposal in a number of areas. The final rules retain much of the structure of the existing rules, such as regulatory thresholds and definitions, but include requirements for development of nutrient management plans to better manage land application of manure.

EPA estimates that 15,500 CAFOs will be regulated by these rules (compared with 26,000-39,000 under the proposal), at an annual compliance cost of $335 million (versus $850 million-$980 million under the proposal). The final rules dropped a controversial proposal to require co-permitting of integrators (large companies that contract with farmers to raise livestock), as well as the farmers themselves. Farm groups said that the regulations are generally workable and consistent with environmental initiatives in the 2002 farm bill (P.L. 107-171), but environmental groups are criticizing the rules for inadequately addressing animal waste runoff problems. (For additional information, see CRS Report RL31851, *Animal Waste and the Environment: EPA Regulation of Concentrated Animal Feeding Operations*.) A January 2003 GAO report concludes that the new rules will be ineffective unless EPA increases its oversight of state regulatory programs, which have primary responsibility for ensuring compliance by feedlot operators (*Increased EPA Oversight Will Improve Environmental Program for Concentrated Animal Feeding Operations*, GAO-03-285.)

Continuing Issue: Appropriations and the Federal Budget

Although the 1987 Clean Water Act amendments dealt extensively with financial aid issues, funding questions have continued to arise and be addressed in the context of appropriations. (For additional information, see CRS Report 96-647, *Water Infrastructure Financing: History of EPA Appropriations*.)

FY2003. The Bush Administration's FY2003 budget request sought a total $1.335 billion for clean water infrastructure funds (compared with $1.8 billion appropriated for FY2002), consisting of $1.212 billion for clean water SRF grants and $123 million for a limited number of special projects (especially in Alaska Native Villages and in communities on the U.S.-Mexico border). The Administration eliminated funds for unrequested project spending that Congress earmarked in the FY2002 law which totaled $344 million. Also, the Administration requested no funds for the municipal sewer overflow grants program authorized in 2000 in P.L. 106-554 (discussed above). The FY2003 budget included a request to establish a $20 million grant program for a Targeted Watersheds Project in a limited number of areas. Members of Congress criticized the request level for SRF capitalization grants, which is $138 million below the FY2002 enacted amount. In August, the Senate Appropriations Committee approved an FY2003 funding bill for EPA that would provide $1.45 billion, $100 million more than the FY2002 level (S. 2797, S.Rept. 107-222). The House Appropriations Committee approved its version of an FY2003 funding bill, providing $1.3 billion for the clean water SRF program (H.R. 5605, H.Rept. 107-740).

Final action did not occur before the 107th Congress adjourned in November and extended into 2003, more than 5 months after the start of the fiscal year. Congress and the President reached agreement on funding levels for EPA and the other non-defense agencies in omnibus appropriations legislation, H.J.Res. 2, which the President signed on February 20 (P.L. 108-7). The enacted bill includes $1.34 billion for clean water SRF grants and $405 million more for special water infrastructure project grants to individual cities. It also provides a total of $1.14 billion for categorical state grants, including $15 million for targeted watershed grants.

FY2004. On February 3, before completion of the FY2003 appropriations, the President submitted his budget request for FY2004. It requests a total of $948 million for clean water infrastructure funds, consisting of $850 million for SRF grants and $98 million for priority projects (especially in Alaska Native Villages and in communities on the U.S.-Mexico border). As in previous years, the Administration requested no funds for congressionally earmarked project grants. The Administration responded to criticism of the reduced request for SRF grants by saying that it reflects a commitment to fund this program at the $850 million level through FY2011. Funding at the that level, plus repayments of previous SRF loans made by states, is expected to increase the revolving levels of the overall program from $2.0 billion to $2.8 billion per year, the Administration says. The budget includes a few increases for water quality activities, including $15 million for remediation of contaminated sediments in the Great Lakes (to implement P.L. 107-303) and $5 million in additional funding (totaling $20 million) for state wetlands program development.

On July 25, the House approved H.R. 2861 (H.Rept. 108-235), providing FY2004 appropriations for EPA. As passed, the bill includes $1.2 billion for clean water SRF grants, $195 million for earmarked water infrastructure project grants, $75 million in grants for high-priority projects in Alaskan Native Villages and along the U.S.-Mexico border, and $8.2 million for wastewater demonstration projects. It also includes amounts requested by the President for Great Lakes cleanup and for state wetlands program development.

CONGRESSIONAL HEARINGS, REPORTS, AND DOCUMENTS

(**Note:** Congress has held more than 75 hearings on Clean Water Act and water quality issues since enactment of P.L. 100-4. Those highlighted below are a partial list of the most recent published hearings on implementation of the Act.)

U.S. Congress. House. Committee on Transportation and Infrastructure. Subcommittee on Water Resources and Environment. *Improving Water Quality: States' Perspectives on the Federal Water Pollution Control Act.* Hearing. 107th Congress, 1st session, February 28, 2001. Washington: GPO, 2001. 53 p. (107-3)

——*Water Infrastructure Needs.* Hearing. 107th Congress, 1st session, March 28, 2001. Washington: GPO, 2001. 178 p. (107-8)

——*The National Academy of Sciences' National Research Council Report on Assessing the Scientific Basis of the Total Maximum Daily Load Approach to Water Quality Management.* Hearing. 107th Congress, 1st session, June 28, 2001. Washington: GPO, 2001. 118 p. (107-29)

——*The Future of the TMDL Program: How to Make TMDLs Effective Tools for Improving Water Quality.* Hearing. 107th Congress, 1st session, November 15, 2001. Washington: GPO, 2001. 34 p. (107-56)

——Committee on Government Report. Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs. *Agency Implementation of the SWANCC Decision.*

Hearing. 107th Congress, 2d session, Sept. 19, 2002. Washington: GPO, 2003. 209 p. (Serial No. 107-230)

U.S. Congress. Senate. Committee on Environment and Public Works. Subcommittee on Fisheries, Wildlife, and Water. *Water and Wastewater Infrastructure Needs.* Hearings. 107th Congress, 1st session, March 27, 2001. S.Hrg. 107-316. Washington: GPO, 2001. 141 p.

FOR ADDITIONAL READING

Goplerud, C. Peter. "Water Pollution Law: Milestones from the Past and Anticipation of the Future." *Natural Resources & Environment.* v. 10, no. 2, fall 1995. pp. 7-12.

Knopman, Debra S. and Richard A. Smith. "20 Years of the Clean Water Act, Has U.S. Water Quality Improved?" *Environment.* v. 31, no. 1, January/February 1993. pp. 16-20, 34-41.

Loeb, Penny. "Very Troubled Waters." *U.S. News & World Report*, v. 125, no. 12, September 28, 1998: 39, 41-42.

U.S. Environmental Protection Agency. *The National Water Quality Inventory: 2000 Report*. Washington, September 2002. "EPA-841-R-2-001."

U.S. General Accounting Office. *Key EPA and State Decisions Limited by Inconsistent and Incomplete Data.* (GAO/RCED-00-54) March 2000. 73 p.

——*Water Infrastructure: Information on Financing, Capital Planning, and Privatization*. (GAO-02-764) August 2002. 79 p.

——*Improved EPA Guidance and Support Can Help States Develop Standards That Better Target Cleanup Efforts*. (GAO-03-308) January 2003. 74 p.

CRS Reports and Issue Briefs

CRS Report RL30030. *Clean Water Act: A Summary of the Law*, by Claudia Copeland.

CRS Report 97-831. *Clean Water Act and Total Maximum Daily Loads (TMDLs) of Pollutants*, by Claudia Copeland.

CRS Issue Brief IB10108. *Clean Water Act Issues in the 108th Congress*, by Claudia Copeland.

CRS Report RL31091, *The Clean Water Act's TMDL Program: Newly Presented Options and Cost Estimates*, by Claudia Copeland

CRS Report RL30611. *EPA's Total Maximum Daily Load (TMDL) Program: Highlights of the Final Revised Rule*, by Claudia Copeland.

CRS Report 96-442. *Great Lakes Water Quality: Current Issues*, by Claudia Copeland.

CRS Report 98-323. *Wastewater Treatment: Overview and Background*, by Claudia Copeland.

CRS Report 96-647. *Water Infrastructure Financing: History of EPA Appropriations*, by Claudia Copeland.

CRS Report RL30437. *Water Quality Initiatives and Agriculture*, by Claudia Copeland.

CRS Issue Brief IB97014. *Wetland Issues*, by Jeffrey Zinn and Claudia Copeland.