Order Code IB89102

Issue Brief for Congress

Water Quality: Implementing the Clean Water Act

Updated November 25, 2002

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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 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 IB10069, *Clean Water Act Issues in the 107th Congress*).

MOST RECENT DEVELOPMENTS

In February, the Administration presented its FY2003 budget request. The budget seeks $1.212 billion for clean water SRF grants and also requests $20 million to fund a new Targeted Watersheds Initiative that would provide direct grants to stakeholders implementing watershed restoration projects. 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 reported an FY2003 funding bill with $1.35 billion for the clean water SRF program (H.R. 5605, H.Rept. 107-740). On September 30, EPA released a study, called the Gap Analysis, which estimates that over the next 20 years and assuming no growth in investment, there will be a $122 billion gap between current capital spending and projected needs for wastewater infrastructure. FY2003 began on October 1, but appropriations for EPA and most other federal agencies were not enacted before the 107th Congress adjourned. A continuing resolution provides funding through January 11, 2003, at the same level as enacted for FY2002. Final appropriations action is now anticipated to occur in January.

In August 1999, EPA proposed regulations to clarify and strengthen existing rules that govern a Clean Water Act (CWA) program intended to restore impaired waters, the Total Maximum Daily Load (TMDL) program. The proposal became highly controversial because of issues such as burdens on states to implement the TMDL program and potential impacts on some agriculture and forestry sources which are not now subject to CWA regulations. EPA modified the 1999 proposal and issued new TMDL rules on July 11, 2000, but delayed the effective date until October 2001. Controversies about the rules persist. The Bush Administration has decided to delay the rules until May 2003 for further review and revision.

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.

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, the House and Senate did approve a bill, the Great Lakes Legacy Act (H.R. 1070), which authorizes $200 million for EPA to carry out projects to remediate sediment contamination in the Great Lakes. President Bush is expected to sign H.R. 1070 (see CRS Issue Brief IB10069, *Clean Water Act Issues in the 107th Congress*).

Implementation issues that have been the focus of attention in recent Congresses, along with concerns over flexibility and regulatory relief, are expected to predominate when Congress does take up reauthorization in the future. In February 1998, the Clinton Administration released a multi-agency Clean Water Initiative intended to build on the environmental successes of the Act and address the nation's remaining water quality challenges (see discussion below, **The Clinton Administration's Clean Water Initiative**).

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, 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 during the 107th Congress.

While 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.

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, 19 have resulted in court orders requiring expeditious development of TMDLs. 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 4th, 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 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. Proposed revisions are expected to be announced in spring 2003.

Nonpoint Pollution Management Provisions

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 the Section 208 of this decade: 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, 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.

State Revolving Fund Provisions

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 $73 billion to assist wastewater treatment construction, but funding needs remain very high: an additional $139.5 billion nationwide over the next 20 years for all types of projects eligible for funding under the Act, according to the most recent estimate by EPA and the states completed in 1996. On September 30, 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 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. While most states believe that the SRF is working well, early funding and administrative problems led many to believe that the anticipated shift to full state responsibility will be delayed. 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.

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

	Authorizations		Appropriations	
Fiscal Year	Title II	Title VI	Title II	Title VI
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

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. While 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*.)

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 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. 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 May 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 that will 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. In December 2000, the 106th 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 (see CRS Issue Brief IB97014, *Wetland Issues*). In October 2001, the House Transportation and Infrastructure Water Resources and Environment Subcommittee held an oversight hearing on enforcement of wetlands regulatory programs, hearing from a number of witnesses who claimed to have been treated improperly by federal regulators and enforcement officials.

The Clinton Administration's Clean Water Initiative

In October 1997, on the 25th anniversary of the CWA, Vice President Gore announced an initiative intended to build on the environmental successes of the Act and to address the nation's remaining water quality challenges, especially nonpoint source pollution. The Vice President directed EPA and USDA to coordinate with other federal agencies to develop an action plan to improve and strengthen water pollution control efforts. President Clinton and Vice President Gore released the action plan in February 1998. Components of the plan, nearly 110 actions, consisted mainly of existing programs, including some planned regulatory actions that agencies had had underway, to be enhanced with increased funding or accelerated with performance-specific deadlines.

The Bush Administration has not undertaken steps specific to the Clean Water Action Plan activities, and it did not identify specific portions of the FY2002 or FY2003 budget request for activities under the Plan. Many of the Plan's activities continue, however, but without the focus given during the Clinton Administration.

The Clinton Administration's action plan was not accompanied by proposals or legislation to reauthorize the CWA. In Congress, it was considered primarily through the appropriations process, rather than authorizing committee activity. FY1999 was the first of three Clinton budgets that proposed funds to implement the Plan. It requested a total of $2.5 billion, a $609 million, or 33%, increase over 1998, to fund activities in 5 departments and agencies, plus interagency funds. Almost one-half of the total increases, $265 million, was designated as assistance to states and localities or to individual landowners (farmers). During the years FY1999-2001, Congress provided a total of $1.24 billion in increases above FY1998 baseline amounts for Plan activities at EPA and other agencies. Each year's budget request was higher than the preceding year's, and while Congress agreed to some increases, it appropriated amount less than the Administration had sought. EPA and USDA officials said that the action plan will be implemented, even though appropriations have been less than requested. Implementation will occur, they said, because they believe that its many actions

are the only way to achieve the Clean Water Act's water quality goals. (For additional information, see CRS Report 98-150, *Clean Water Action Plan: Background and Early Implementation*, and CRS Report 98-745, *Clean Water Action Plan: Budgetary Initiatives*.)

Strategy concerning animal feeding operations. A key element of the Clean Water Initiative, minimizing public health and environmental impacts of runoff from animal feeding operations (AFOs) into rivers, lakes, and estuaries, was addressed by a national strategy issued jointly by EPA and USDA on March 9, 1999. This part of the Initiative is an example of an activity which continues under the Bush Administration due to continuing concern about impacts of AFOs on water quality. Animal feeding operations are agricultural facilities that confine feeding activities, thus concentrating animal populations and manure. Animal waste, if not managed properly, can run off farms and pollute nearby water bodies. Agricultural runoff has been linked to dangerous toxic microorganisms such as *Pfiesteria piscicida*, which is widely believed to be responsible for major fish kills and disease events in several mid-Atlantic states.

Existing EPA regulations, issued in the 1970s, require CWA discharge permits for the largest AFOs (about 6,600 out of 450,000 total facilities nationwide). 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. EPA is continuing to develop these rules, which it is under court order to issue by December 2002. On May 16, 2001, a House Transportation and Infrastructure subcommittee held an oversight hearing on the December regulatory proposal. Issues that Congress has addressed and is likely to continue reviewing 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.

Continuing Issue: Appropriations and the Federal Budget

While 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 presented its FY2003 budget request on February 4. It seeks 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 enacted in 2000 (see below). The FY2003 budget includes 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 that provides $1.35 billion for the clean water SRF program (H.R. 5605, H.Rept. 107-740). Final action on the legislation did not occur before the 107th Congress adjourned in November. As a result, a continuing resolution (H.J.Res. 124) provides funding through January 11, 2003, at the same level as enacted for FY2002. According to EPA, FY2002 earmarked funding for special water infrastructure and other projects is not extended by the continuing resolution.

FY2002. Overall, the first Bush Administration budget for EPA sought $7.3 billion, about 6.4% below the FY2001 enacted level due to eliminating $499 million of unrequested spending earmarked by Congress. The Administration requested a total of $1.3 billion for clean water infrastructure funds, consisting of $850 million for clean water SRF grants (compared with $1.35 billion appropriated for FY2001) and $450 million for a new program of municipal sewer overflow grants under legislation enacted in 2000 (discussed above). However, that legislation, the Wet Weather Water Quality Act, provides that sewer overflow grants are only available in years when at least $1.35 billion in clean water SRF grants is appropriated. The Administration explained that the $1.3 billion total is higher than the Clinton Administration had requested in recent years and that the request continued to support an overall goal of providing $2 billion average in annual financial over the long-term (which also was the Clinton Administration's goal). The Bush budget requested no funds for special earmarked grants, except for $75 million to fund projects along the U.S.-Mexico border and $35 million for projects in Alaskan Native Villages (both are the same amounts provided in FY2001). Other water quality funds proposed in the budget were about level with FY2001 enacted levels, except for elimination of unrequested spending earmarked by Congress. Some Members of Congress and outside groups criticized the budget request, saying that it does not provide enough support for water infrastructure programs.

Resolution of this and other appropriations bills was complicated by congressional attention to general economic conditions in the U.S. and responses to the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon. Nevertheless, the House and Senate gave final approval to legislation providing EPA's FY2002 funding (H.R. 2620, H.Rept. 107-272) on November 8, and President Bush signed the bill on November 26 (P.L. 107-73). The final bill did not include separate funds for the new sewer overflow grant program requested by the Administration, but it did include $1.35 billion for clean water SRF grants, plus $344 million for earmarked water infrastructure project grants.

In addition, on December 20, 2001, the House and Senate approved H.R. 3338, the DOD and Emergency Supplemental Appropriations Act for FY02, providing supplemental appropriations to EPA and other federal agencies to carry out enhanced security and counterterrorism activities in response to the September 11 terrorist attacks in the United States. The bill includes $176 million in funds for EPA for anthrax decontamination, increased security at EPA buildings, and to develop and perform vulnerability assessments at water infrastructure utilities. President Bush signed this bill on January 10 (P.L. 107-117)

FY2001. The Clinton Administration's FY2001 budget requested $800 million for clean water SRF grants, the same level requested for FY2000, but which Congress rejected (see following discussion). Members of Congress and interest group representatives criticized this funding request (a 40% decrease from FY2000), especially in view of recent data concerning infrastructure funding needs over the next 2 decades (see discussion above, **State Revolving Fund Provisions**). The budget also proposed several major budget increases for other clean water programs, including: $50 million more for state grants to manage nonpoint pollution programs (the Section 319 program; a total of $250 million); $45 million more for state grants for general administration of water quality programs, with the increase intended to support state TMDL activities (Section 106 grants; a total of $160 million); and $50 million for a new state grant program to assist with cleanup of Great Lakes contamination problems.

In October 2000, the House and Senate approved EPA's funding bill for FY2001, P.L. 106-377 (H.R. 4635, H.Rept. 106-988), providing $1.35 billion for clean water SRF grants (the same level enacted for FY2000). The enacted bill included $110 million for water infrastructure project grants in rural and Alaskan Native villages and along the U.S.-Mexico border. It included an additional $336 million for a number of other specified project grants throughout the country. In addition, the bill provided $1,008 million for state categorical program grants ($60 million less in total than requested), including $38 million more than requested for nonpoint pollution management grants and $56.6 million more for Section 106 grants, intended to help states meet TMDL program needs. Congress rejected the Administration's request for new Great Lakes cleanup funds.

P.L. 106-377 included report language addressing TMDL regulations promulgated by EPA in July 2000 (see discussion above, **TMDLs**). It directed studies by the National Academy of Sciences 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. It did not invalidate or otherwise alter the TMDL rules.

Subsequently, in December 2000, Congress provided $21 million more for special project water infrastructure grants (in addition to the $336 million in P.L. 106-377) as a provision of H.R. 4577, the FY2001 Consolidated Appropriations bill (P.L. 106-554).

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.)

U.S. Congress. House. Committee on Transportation and Infrastructure. Subcommittee on Oversight, Investigations and Emergency Management. *Total Maximum Daily Load Initiatives under the Clean Water Act*. Hearing, July 27, 2000. 106th Congress, 2dt session. Washington, U.S. Govt. Print. Off., 77 p. (106-106)

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

—— *Water Infrastructure Needs.* Hearing, Mar. 28, 2001. 107th Congress, 1st session. Washington, U.S. Govt. Print. Off., 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, June 28, 2001. 107th Congress, 1st session. Washington, U.S. Govt. Print. Off., 118 p. (107-29)

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

U.S. Congress. Senate. Committee on Agriculture, Nutrition, and Forestry. *Water Quality*. Hearing, Feb. 23, 2000. 106th Congress, 2d session. Washington, U.S. Govt. Print. Off., 336 p. (S. Hrg. 106-699)

U.S. Congress. Senate. Committee on Environment and Public Works. *Clean Water Action Plan.* Hearing, May 13, 1999. 106th Congress, 1st session. Washington, U.S. Govt. Print. Off., 148 p. (S. Hrg. 106-389)

U.S. Congress. Senate. Subcommittee on Fisheries, Wildlife, and Water. *Proposed Rule Changes to the TMDL and NPDES Permit Programs.* Hearings, Mar. 1, 23, and May 18, 2000. 106th Congress, 2d session. Washington, U.S. Govt. Print. Off., 597 p. (S.Hrg. 106-971)

—— *Water and Wastewater Infrastructure Needs.* Hearing, Mar. 27, 2001. 107th Congress, 1st session. Washington, U.S. Govt. Print. Off., 141 p. (S.Hrg. 107-316)

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.

U.S. Environmental Protection Agency. *National Water Quality Inventory: 1998 Report to Congress*. Washington, June 2000. "EPA841-R-00-001."

—— *1996 Clean Water Needs Survey Report to Congress*. Washington, 1997. 1 vol. "EPA832/R-97-003."

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 IB10069. *Clean Water Act Issues in the 107th 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 98-150. *Clean Water Action Plan: Background and Early Implementation*, by Claudia Copeland.

CRS Report 98-745. *Clean Water Action Plan: Budgetary Initiatives*, 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.