

An hourglass-shaped graphic with a globe of the Earth inside. The top bulb is dark blue, and the bottom bulb is light blue. The hourglass is filled with a dark blue liquid that is dripping down. The globe is centered within the hourglass, with the top bulb containing the upper half and the bottom bulb containing the lower half. The hourglass is set against a white background.

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Clean Water Act: A Review of Issues in the 109th Congress

Claudia Copeland, Resources, Science, and Industry Division

January 4, 2007

Abstract. Before adjourning sine die in December 2006, Congress passed legislation to reauthorize the Clean Water Act's Lake Pontchartrain Basin program (H.R. 6121). President Bush signed this bill into law on December 12 (P.L. 109-392). House and Senate committees reported several other bills near the end of the 109th Congress, but none of these was enacted. The House Transportation and Infrastructure Committee reported H.R. 4126, to reauthorize the act's Chesapeake Bay program. Two other bills reported by the Senate Environment and Public Works Committee dealt with security of wastewater treatment facilities (S. 2781), and incentives to promote remediation of inactive and abandoned hardrock mines (S. 1848).

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CRS Report for Congress

Clean Water Act: A Review of Issues in the 109th Congress

Updated January 4, 2007

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Prepared for Members and
Committees of Congress

Clean Water Act: A Review of Issues in the 109th Congress

Summary

Legislative initiatives to comprehensively amend the Clean Water Act (CWA) have stalled for some time as interested parties have debated whether and exactly how to change the law. Congress has instead focused legislative attention on narrow bills to extend or modify selected CWA programs, but not any comprehensive proposals. In the 109th Congress, two such bills were enacted: a bill extending authorizations for the Long Island Sound program (H.R. 3963, P.L. 109-137), and another concerning the Lake Pontchartrain Basin (H.R. 6121, P.L. 109-392). The House also passed H.R. 1721, a bill to reauthorize coastal water quality programs, and several other CWA bills were reported by House and Senate committees (including H.R. 4126, concerning the Chesapeake Bay; and S. 2781, concerning wastewater facility security). A free-standing bill intended to promote remediation of abandoned hardrock mines (S. 1848), which would have affected CWA requirements for such projects, also was reported but not passed.

Following Gulf Coast hurricanes in 2005, the Senate passed legislation to streamline delivery of funds to repair storm-damaged sewage treatment plants (S. 1709). Other bills intended to simplify environmental review of recovery and rebuilding projects also were introduced (S. 1711, S. 1765/S. 1766). None of these was enacted.

For several years, the most prominent legislative water quality issue has concerned financial assistance for municipal wastewater treatment projects. At issue is how the federal government will assist states and cities in meeting needs to rebuild, repair, and upgrade wastewater treatment plants, especially in light of capital costs that are projected to be as much as \$390 billion over the next two decades. In the 109th Congress, the Senate Environment and Public Works Committee approved S. 1400, a bill authorizing \$20 billion in federal grants to capitalize state clean water infrastructure loan programs. A House committee approved bills to reauthorize other Clean Water Act programs: H.R. 624 would have provided \$1.5 billion in grants over six years for sewer overflow projects; and H.R. 1359 would have extended a pilot program for alternative water source projects. None of these bills was passed.

Other Clean Water Act issues have received attention from numerous stakeholders, but were not considered by the 109th Congress. In particular, programs that regulate activities in wetlands, especially CWA Section 404, have been criticized by landowners for intruding on private land-use decisions and imposing excessive economic burdens. Environmentalists view these programs as essential for maintaining the health of wetland ecosystems. These groups are concerned about a 2001 Supreme Court decision, the *SWANCC* case, that narrowed regulatory protection of wetlands, a 2006 Court ruling that also addressed the regulatory jurisdiction of Section 404, and related administrative actions, including 2003 policy guidance intended to interpret the *SWANCC* case. Legislation to reverse the *SWANCC* ruling (H.R. 1356/S. 912, the Clean Water Authority Restoration Act), and another bill to narrow the government's regulatory jurisdiction (H.R. 2658, the Federal Wetlands Jurisdiction Act), were introduced but were not enacted.

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Clean Water Act: A Review of Issues in the 109th Congress

Most Recent Developments

Before adjourning *sine die* in December 2006, Congress passed legislation to reauthorize the Clean Water Act's Lake Pontchartrain Basin program (H.R. 6121). President Bush signed this bill into law on December 12 (P.L. 109-392). House and Senate committees reported several other bills near the end of the 109th Congress, but none of these was enacted. The House Transportation and Infrastructure Committee reported H.R. 4126, to reauthorize the act's Chesapeake Bay program. Two other bills reported by the Senate Environment and Public Works Committee dealt with security of wastewater treatment facilities (S. 2781), and incentives to promote remediation of inactive and abandoned hardrock mines (S. 1848).

Background and Analysis

Although much progress has been made in achieving the ambitious goals that Congress established 30-plus years ago to restore and maintain the chemical, physical, and biological integrity of the nation's waters, problems persist. The types of remaining water quality problems are diverse, ranging from pollution runoff from farms and ranches, city streets, and other diffuse or "nonpoint" sources, to metals, as well as organic and inorganic toxic substances discharged from factories and sewage treatment plants.

The principal law that deals with polluting activity in the nation's streams, lakes, estuaries, and coastal waters is the Federal Water Pollution Control Act (P.L. 92-500, enacted in 1972), commonly known as the Clean Water Act, or CWA (amended by P.L. 95-217 in 1977, P.L. 97-117 in 1981, and P.L. 100-4 in 1987). It consists of two major parts: regulatory provisions that impose progressively more stringent requirements on industries and cities to abate pollution and meet the statutory goal of zero discharge of pollutants; and provisions that authorize federal financial assistance for municipal wastewater treatment plant construction. Both parts are supported by research activities, plus permit and enforcement provisions. Programs at the federal level are administered by the Environmental Protection Agency (EPA); state and local governments have major responsibilities to implement CWA programs through standard-setting, permitting, and enforcement.¹

¹ For further information, see CRS Report RL30030, *Clean Water Act: A Summary of the Law*, by Claudia Copeland.

The objective declared in the 1972 act of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters was accompanied by statutory goals to eliminate the discharge of pollutants into navigable waters by 1985 and to attain, wherever possible, waters deemed "fishable and swimmable" by 1983. While those goals have not been fully achieved, considerable progress has been made, especially in controlling conventional pollutants (suspended solids, bacteria, and oxygen-consuming materials) discharged by industries and municipal sewage treatment plants.

Progress has been mixed in controlling discharges of toxic pollutants (heavy metals, inorganic and organic chemicals), which are more numerous and can harm human health and the environment even when present in minute amounts — at the parts-per-billion level. Moreover, efforts to control pollution from diffuse sources, termed nonpoint source pollution (rainfall runoff from urban, suburban, and agricultural areas, for example), are more recent, given the earlier emphasis on "point source" pollution (discharges from industrial and municipal wastewater treatment plants). Overall, data reported by EPA and states indicate that 39% of river and stream miles assessed by states and 45% of assessed lake acres do not meet applicable water quality standards and are impaired for one or more desired uses. Approximately 95,000 lakes and 544,000 river miles in the United States are under fish-consumption advisories (including 100% of the Great Lakes and their connecting waters), due to chemical contaminants in lakes, rivers, and coastal waters, and one-third of shellfishing beds are closed or restricted, due to toxic pollutant contamination. For mercury — a contaminant of growing concern — as of 2003, 45 states had issued partial or statewide fish or shellfish consumption advisories.

The most recent major amendments were enacted in 1987 (P.L. 100-4); this was the first comprehensive revision to the law in a decade. Authorizations for some programs, such as general grant assistance to states, research, and general EPA support authorized in that law, expired in FY1990 and FY1991. Authorizations for wastewater treatment funding expired in FY1994. None of these programs has lapsed, however, as Congress has continued to appropriate funds to implement the act.²

The Clean Water Act has been viewed as one of the most successful environmental laws in terms of achieving its statutory goals, which have been widely supported by the public, but lately some have questioned whether additional actions to achieve further benefits are worth the costs. Criticism has come from industry, which has been the long-standing focus of the act's regulatory programs and often opposes imposition of new stringent and costly requirements. Criticism also has come from developers and property rights groups who contend that federal regulations (particularly the act's wetlands permit program) are a costly intrusion on private land-use decisions. States and cities have traditionally supported water quality programs and federal funding to assist them in carrying out the law, but recently many have opposed CWA measures that they fear might impose new unfunded mandates. Many environmental groups believe that further fine-tuning to

² For further information, see CRS Report RL33466, *Water Quality: Implementing the Clean Water Act*, by Claudia Copeland.

strengthen the act is needed to maintain progress achieved to date and to address remaining water quality problems.

Legislative Activity Since P.L. 100-4

Following enactment of amendments in 1987, no major CWA legislative activity occurred until the 104th Congress (1995). The House approved a comprehensive reauthorization bill, H.R. 961, that was opposed by environmentalists and the Clinton Administration. Critics said that the bill would undermine the existing framework for protecting U.S. waters. The Senate did not take up H.R. 961 or other CWA legislation.

In the 105th and 106th Congresses, no comprehensive reauthorization legislation was introduced, but action occurred in the 106th Congress on bills dealing with specific water quality issues. 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 (P.L. 106-457) that reauthorized several existing CWA programs (i.e., Chesapeake Bay cleanup, clean lakes, and the National Estuary Program), and a bill to authorize CWA grant funding for wet weather sewerage projects (included as a provision of the FY2001 Consolidated Appropriations bill, P.L. 106-554).

During its tenure, the Clinton Administration did not offer legislation to reauthorize the CWA, but rather initiated a number of agency-wide and program-specific reforms focusing on flexibility and what were termed “common sense” approaches to regulation.

The 107th Congress focused legislative attention on one of the key programs of the act, provisions concerning financial assistance for municipal wastewater treatment projects. A House subcommittee and a Senate committee approved bills to extend the act’s State Revolving Fund (SRF) program through FY2007 (H.R. 3930, S. 1961). Neither bill received further action, in large part due to controversies over application of the Davis-Bacon Act, which requires that contractors, engaging in certain federal contract construction, pay workers on such projects not less than the locally prevailing wage for comparable work, and over the formula for allocating SRF grants among the states.

The single water quality measure enacted by the 107th Congress was the Great Lakes Legacy Act (P.L. 107-303). It amended existing Great Lakes provisions of the CWA (Section 118) to authorize \$50 million annually for FY2004-FY2008 for EPA to carry out projects to remediate sediment contamination in the Great Lakes. The bill also reauthorized CWA provisions concerning the Lake Champlain Basin program (Section 120). Miscellaneous provisions revived a number of CWA reports to Congress that had been discontinued under a previously passed “sunset” law (P.L. 104-66) and allowed states to use CWA Section 319 grant funds for stormwater management projects in FY2003.

In the 108th Congress, attention again focused on water infrastructure financing issues, although no bill was enacted (see “Authorization of Wastewater Infrastructure,” below). However, there was some action on bills to reauthorize

existing, mostly geographic-specific programs in the Clean Water Act. Before recessing for the 2004 election, the House and Senate passed H.R. 4731, to reauthorize the National Estuary Program through FY2010. The President signed this bill on October 30, 2004 (P.L. 108-399). The National Estuary Program, authorized by the 1987 CWA amendments, is directed at improving the quality of estuaries of national importance. Also in September 2004, the House Transportation and Infrastructure Committee reported three other bills. They were (1) H.R. 784, to reauthorize section 221 of the act and provide \$1.5 billion over six years for sewer overflow projects (H.Rept. 108-675); (2) H.R. 4470, to extend the Lake Pontchartrain Basin Restoration Program in Section 121 through FY2010 (H.Rept. 108-676); and (3) H.R. 4688, to reauthorize the Chesapeake Bay Program through FY2010 (H.Rept. 108-677). The House passed H.R. 4470 on October 7, 2004, but no further action occurred. Also on October 7, the House passed H.R. 4794, to amend and reauthorize the Tijuana River Valley Estuary and Beach Sewage Cleanup Act (P.L. 106-457) in order to address treatment of sewage from Tijuana, Mexico, that impacts the San Diego border region. The Senate passed this bill on November 16, 2004, and the President signed it on November 30 (P.L. 108-425; this law did not amend the CWA).

109th Congress. Wastewater infrastructure legislation again received attention in the 109th Congress (see further discussion below). In July 2005, the Senate Environment and Public Works Committee approved S. 1400 (S.Rept. 109-186), authorizing federal funds for water quality and drinking water State Revolving Fund programs. In May 2005, the House Transportation and Infrastructure Committee approved bills to reauthorize funding for two other related CWA programs. The bills are (1) H.R. 624 (H.Rept. 109-166), to reauthorize Section 221 of the act and provide \$1.5 billion over six years for sewer overflow projects (identical to H.R. 784 from the 108th Congress) and (2) H.R. 1359 (H.Rept. 109-167), to extend Section 220 of the act, authorizing a pilot program for alternative water source projects. The House did not take up either of these bills.

Other bills concerned with specific CWA programs received attention; two were enacted. In December 2005, Congress passed H.R. 3963 (H.Rept. 109-293), authorizing \$40 million per year to extend the Long Island Sound program in Section 119 of the act for six years (through FY2010). President Bush signed it on December 22 (P.L. 109-137). In November 2006, Congress passed H.R. 6121, a bill to reauthorize the Lake Pontchartrain Basin program in Section 121 of the act through FY2011. President Bush signed it on December 12 (P.L. 109-392).

Other bills were considered but not enacted. In December 2005, the House approved H.R. 1721 (H.Rept. 109-292), to extend the coastal water quality program in Section 406 of the act and to authorize \$30 million over six years for coastal water quality monitoring. In September 2006, the House Transportation and Infrastructure Committee approved H.R. 4126, a bill to improve and reauthorize the CWA Chesapeake Bay program in Section 117 of the act (no report on this bill was filed). Also in September, the Senate Environment and Public Works Committee reported S. 1848 (S.Rept. 109-351), a bill intended to promote remediation of inactive and abandoned hardrock mines by modifying requirements of the Clean Water Act and certain other environmental laws as an incentive to persons carrying out such projects (see “‘Good Samaritan’ Legislation,” below).

Recovery from 2005 Hurricanes. Throughout the Gulf Coast region affected by Hurricanes Katrina and Rita in 2005, high winds and water damaged a wide range of public service facilities, including sewage treatment plants, and restoring those facilities is part of the overall cleanup and restoration process. Damages at many facilities included loss of electric power after the storm to pump, process, and treat raw water supply and wastewater. EPA and the U.S. Army Corps of Engineers staff have assisted state and local government personnel to evaluate damages. Efforts continue throughout the region to assess facilities to determine their operating status, including needs to repair or rebuild, but EPA reported that six weeks after Hurricane Katrina, more than 95% of wastewater treatment facilities in the affected region were operational, although many may require major repairs or rebuilding. Even more than a year after the storms, facilities in some cities (serving parts of New Orleans, for example) were not fully operational.³

The 109th Congress considered a wide range of legislative proposals to aid generally in response and recovery. In particular, S. 1709, passed by the Senate on September 27, 2005, would have modified the revolving loan provisions of the Clean Water Act to provide favorable treatment (such as forgiveness of loan principal and extended repayment) for sewage treatment repair or rebuilding projects in Alabama, Mississippi and Louisiana. It also would have permitted those states for two years to provide CWA assistance even for projects not included on a state's Intended Use Plan, since many of the systems affected by Hurricane Katrina are believed to not be included in the plans. The House did not act on this legislation. More generally, some suggested that environmental review and permitting requirements of the Clean Water Act and other federal environmental laws should be modified to enable swift recovery from the storms. Several bills with provisions intended to do so were introduced (S. 1711, S. 1765/S. 1766) but received no further congressional consideration.⁴

Wastewater Security. Since the September 11, 2001 terrorist attacks in the United States, congressional attention has focused on security, preparedness, and emergency response issues. Among the topics of interest are protection of the nation's water infrastructure facilities (both drinking water and wastewater) from possible physical damage, biological/chemical attacks, and cyber disruption.⁵

Policymakers have examined a number of legislative options in this area, including enhanced physical security, communication and coordination, and research. In October 2002, the House passed legislation to authorize \$200 million in grants for security activities at wastewater treatment plants (H.R. 5169). It also authorized \$15 million in technical assistance for small treatment plant facilities and \$5 million to EPA for improved vulnerability assessment tools. Similar legislation was introduced

³ For information, see CRS Report RS22285, *Hurricane-Damaged Drinking Water and Wastewater Facilities: Impacts, Needs, and Response*, by Claudia Copeland.

⁴ For additional discussion, see CRS Report RL33107, *Emergency Waiver of EPA Regulations: Authorities and Legislative Proposals in the Aftermath of Hurricane Katrina*, by James E. McCarthy and Claudia Copeland.

⁵ For information, see CRS Report RL32189, *Terrorism and Security Issues Facing the Water Infrastructure Sector*, by Claudia Copeland and Betsy Cody.

in the Senate (S. 3037), but no further action occurred. Congress did enact legislation authorizing \$160 million in grants for drinking water utilities to conduct vulnerability assessments (P.L. 107-188).

In the 108th Congress, the House passed legislation similar to H.R. 5169. H.R. 866 (H.Rept. 108-33) would have authorized \$200 million in grants to wastewater utilities to conduct vulnerability assessments and an additional \$20 million for technical assistance and improved assessment tools. The Senate Environment and Public Works Committee approved a similar bill (S. 1039, S.Rept. 108-149) in May 2003. No further action occurred, due in part to concerns expressed by some that the legislation would not mandate vulnerability assessments and would not require that they be submitted to EPA, as is the case with drinking water assessments required by P.L. 107-188.

Wastewater security issues again received attention in the 109th Congress. In May 2006, the Senate Environment and Public Works Committee approved S. 2781 (S.Rept. 109-345). It was similar to S. 1039 in the 108th Congress in that it would encourage wastewater utilities to conduct vulnerability assessments and would authorize \$220 million to assist utilities with assessments and preparation of site security plans. It also included provisions responding to a March 2006 GAO report that found that utilities have made little effort to address vulnerabilities of collection systems, which may be used by terrorists to introduce hazardous substances or as access points for underground travel to a potential target.⁶ S. 2781 would have authorized EPA to conduct research on this topic. During committee consideration of the bill, an amendment was rejected that would have required, rather than encouraged, treatment works to conduct vulnerability assessments and also would have required high-risk facilities to switch from using chlorine and similar hazardous substances to other chemicals that are often referred to as “inherently safer technologies.” No further action on this bill occurred.

Legislative Issues in the 109th Congress

The year 2002 marked the 30th anniversary of passage of the Clean Water Act and 15 years since the last major amendments to the law. While, as noted, there has been measurable clean water progress as a result of the act, observers and analysts agree that significant water pollution problems remain. However, there is less agreement about what solutions are needed and whether new legislation is required. Several key water quality issues exist: evaluating actions to implement existing provisions of the law, assessing whether additional steps are necessary to achieve overall goals of the act that have not yet been attained, and defining the appropriate federal role in guiding and paying for clean water infrastructure and other activities. For some time, efforts to comprehensively amend the act have stalled as interests have debated whether and exactly how to change the law. Many issues that might be addressed involve making difficult tradeoffs between impacts on different sectors of

⁶ U.S. Government Accountability Office, *Securing Wastewater Facilities, Utilities Have Made Upgrades but Further Improvements to Key System Components May Be Limited by Costs and Other Constraints*, GAO-06-390, March 2006, 64 p.

the economy, taking action when there is technical or scientific uncertainty, and allocating governmental responsibilities for implementing the law.

These factors partly explain why Congress has recently favored focusing legislative attention on narrow bills to extend or modify selected CWA programs, rather than taking up comprehensive proposals. Other factors also are at work. These include a general reluctance by most Members of Congress to address controversial environmental issues in view of the slim majorities held by political parties in the House and the Senate; lack of presidential initiatives on clean water issues (neither the Clinton nor the Bush Administration proposed CWA legislation); and, since the terrorist attacks of September 11, 2001, more prominent congressional focus on security, terrorism, and Iraq war issues than on many other topics, including environmental protection.

Authorization of Water Infrastructure Funding

The act's program of financial aid for municipal wastewater treatment plant construction is a central feature of the law. At issue today is how the federal government will assist states and cities, especially in view of the high projected funding needs that exist. It received attention in the 109th Congress, as it has for several years, although controversies have stymied enactment of new legislation. Since 1972, Congress has provided a total of \$76.5 billion to assist cities in constructing projects to achieve the act's requirements for secondary treatment of municipal sewage (equivalent to 85% reduction of wastes), or more stringent treatment where required by local water quality conditions. The CWA does not authorize funds for operation or maintenance of completed projects. State and local governments have spent more than \$25 billion of their own funds for construction, as well. In addition to CWA programs, other sources of federal funding are administered by the U.S. Department of Agriculture and the Department of Housing and Urban Development.⁷

Nevertheless, funding needs remain very high: an additional \$181 billion nationwide for all types of projects eligible for funding under the act, according to the most recent Needs Survey estimate by EPA and the states, issued in August 2003.⁸ In September 2002, EPA released a study, called the Gap Analysis, that assessed the difference between current spending for wastewater infrastructure and total funding needs (both capital and operation and maintenance).⁹ In that report, EPA estimated 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 (including for some projects not currently eligible for CWA funds, such as system replacement, which are not reflected in the EPA-state Needs Survey).

⁷ For information, see CRS Report RL30478, *Federally Supported Water Supply and Wastewater Treatment Programs*.

⁸ U.S. Environmental Protection Agency, *Clean Watersheds Needs Survey 2000, Report to Congress*, Washington, August 2003, EPA 832-03-001, 1 vol.

⁹ U.S. Environmental Protection Agency, *The Clean Water and Drinking Water Infrastructure Gap Analysis*, September 2002, EPA 816-R-02-020, 50 p.

Funding needs for operation and maintenance, which are not currently eligible for federal aid, are an additional \$148 billion, the agency estimates. According to the Gap Analysis, 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 estimated that, if wastewater spending increases by 3% annually, the gap would shrink by nearly 90% (to about \$1 billion annually). Outside groups, including a coalition called the Water Infrastructure Network, have offered proposals that have attracted some congressional interest for a multibillion dollar investment program in wastewater and drinking water infrastructure.¹⁰

The 1987 amendments initiated a program of grants to capitalize State Water Pollution Control Revolving Funds (SRF), or loan programs. This program in Title VI of the act replaced the previous categorical grants program, under which the federal share was 55% of project costs, and localities were not obligated to repay federal funds that they received. Under the revolving fund concept, monies used for construction will be repaid by borrowing communities to the states, to be recycled for future construction in other communities, thus providing an ongoing source of financing. States must provide a 20% match of the federal amount. The intent of the 1987 amendments was that federal contributions to SRFs would assist in making a transition to full state and local financing by FY1995. The essential tradeoff was that states would have greater flexibility to set priorities and administer funding in exchange for ending federal aid after FY1994.¹¹

All states have established the mechanisms to administer the new loan programs and have been receiving SRF capitalization funds under Title VI for several years. Many have complained that the SRF program is unduly complicated by federal rules, even though Congress had intended that states were to have greater flexibility. Congressional oversight has examined the progress toward reducing the backlog of wastewater treatment facilities needed to achieve the act's water quality objectives, while newer estimates of future funding needs have drawn increased attention to the role of the SRF program in meeting such needs.

Small communities and states with large rural populations have experienced the largest share of problems with the SRF program. Many small towns did not participate in the previous construction grants program and consequently are likely to require major projects to achieve compliance with the law. Yet these communities often lack an industrial tax base and thus face the prospect of very high per capita user fees, if their citizens are required to repay the full capital cost of sewage treatment projects.

While the initial intent was to phase out federal support for this program, Congress has continued to appropriate SRF capitalization grants to the states, providing an average of \$1.35 billion annually in recent years. The SRF provisions

¹⁰ For additional information, see CRS Report RL31116, *Water Infrastructure Needs and Investment: Review and Analysis of Key Issues*, by Claudia Copeland and Mary Tiemann.

¹¹ For additional information, see CRS Report 98-323, *Wastewater Treatment: Overview and Background*, by Claudia Copeland.

have been less controversial than others in the act, such as wetlands reform, because of apparent general agreement on the need to provide funding assistance (as reflected in continued appropriations). The CWA's SRF provisions also were a model for similar provisions added to the Safe Drinking Water Act (SDWA) in 1996 (P.L. 104-182).

However, because remaining clean water funding needs are still so large, at issue is whether and how to extend SRF assistance to address those needs, how to allocate SRF funds among the states, and how to prioritize projects and funding. Bush Administration officials have said that infrastructure funding needs go beyond what the federal government can do on its own. Of particular concern is assisting small and economically disadvantaged communities that have had the most difficulty in adjusting from the act's previous categorical grants program to SRF loans.

Additionally, there is concern about the adequacy of SRF or other funding specifically for projects dealing with problems of overflows from municipal combined and separate sewers which can release partially treated or untreated wastewaters that harm public health and the environment. EPA estimates that the cost of projects to control sewer overflows, from combined and separate sanitary sewer systems, is nearly \$140 billion nationwide. And more recently, wastewater utilities have sought assistance to assess operational vulnerabilities and upgrade physical protection of their facilities against possible terrorist attacks that could threaten water infrastructure systems.¹²

Legislative Responses. Congress has actively considered water infrastructure funding issues since the 107th Congress, when House and Senate committees approved bills to extend the act's SRF program through FY2007 and increase federal assistance (H.R. 3930; S. 1961, S.Rept. 107-228). A report on H.R. 3930 was not filed. Neither bill received further action, in large part due to controversies over application of prevailing wage requirements of the Davis-Bacon Act and over the formula for allocating SRF grants among the states.

In the 108th Congress, four bills to reauthorize the Clean Water Act SRF program were introduced (S. 170, S. 2550, H.R. 20, H.R. 1560). In addition, separate bills to reauthorize funding for sewer overflow grants (CWA Section 221) were introduced (H.R. 784, S. 567). In October 2004, the Senate Environment and Public Works Committee reported legislation authorizing \$41.25 billion over five years for wastewater and drinking water infrastructure programs, including \$20 billion for the clean water SRF program (S. 2550, S.Rept. 108-386). The bill included a new formula for state-by-state allocation of clean water SRF grants, renewal of the Clean Water Act's sewer overflow grant program, and provisions such as extended loan repayments and subsidies for disadvantaged communities.

Prior to the Senate committee's action, in July 2003, the House Transportation and Infrastructure Subcommittee on Water Resources and Environment approved

¹² Water infrastructure funding issues related to annual appropriations also are an issue of interest to Congress; for information see CRS Report RL33466, *Water Quality: Implementing the Clean Water Act*, by Claudia Copeland.

H.R. 1560, legislation similar to H.R. 3930, the bill approved by that committee in the 107th Congress. H.R. 1560 would have authorized \$20 billion for the clean water SRF program for FY2004-FY2008. It included several provisions intended to benefit economically disadvantaged and small communities, such as allowing extended loan repayments (30 years, rather than 20) and additional subsidies (e.g., principal forgiveness and negative interest loans) for communities that meet a state's affordability criteria. It included provisions to require communities to plan for capital replacement needs and to develop and implement an asset management plan for the repair and maintenance of infrastructure that is being financed.¹³ No further action occurred.

The issue of the applicability of the prevailing local wage requirements of the Davis-Bacon Act to SRF-funded projects has affected consideration of water infrastructure legislation for some time, because that act has both strong supporters and critics in Congress. Critics of Davis-Bacon say that it unnecessarily increases public construction costs and hampers competition, while supporters say that it helps stabilize the local construction industry by preventing competition that would undercut local wages and working conditions. The bill approved by the House subcommittee in July 2003 (H.R. 1560) did not include language specifying that the Davis-Bacon Act shall apply to SRF-funded projects, while S. 2550 did include such a requirement. Other factors that clouded the bills were Administration opposition to authorization levels in both bills and disputes over funding allocation formulas.

In the 109th Congress, the Senate Environment and Public Works Committee approved S. 1400, the Water Infrastructure Financing Act, in July 2005 (S.Rept. 109-186). The bill was similar to S. 2550 in the 108th Congress; it would have authorized \$20 billion for grants to capitalize the Clean Water Act SRF program and \$15 billion for Safe Drinking Water Act SRFs through FY2010. As approved by the committee, S. 1400 would have revised and updated the CWA formula for state-by-state allocation of SRF monies and also specified that the prevailing wage requirements of the Davis-Bacon Act shall apply to all projects financed from an SRF (as similarly provided in the committee's bill in the 108th Congress). No further action on this bill occurred.

For some time, interest has been growing in identifying and developing new mechanisms to help localities pay for water infrastructure projects, beyond federal grants or SRFs, which appear insufficient to fully meet funding needs. In June 2005, the House Transportation and Infrastructure Subcommittee on Water Resources and Environment held hearings on alternative means to fund water infrastructure projects in the future. At the first hearing, witnesses focused on one way to increase funding for water infrastructure that has recently been advocated by some groups, creating a national clean water trust fund that would conceptually be similar to trust funds that exist for highway and aviation projects. Witnesses and subcommittee members discussed difficulties in identifying potential revenue sources that would be deemed fair and equitable. The second hearing addressed other financing options, such as expanded use of tax-exempt private activity bonds, and more efficient management

¹³ For information, see CRS Report RL32503, *Water Infrastructure Financing Legislation, Comparison of S. 2550 and H.R. 1560*, by Claudia Copeland and Mary Tiemann.

techniques, such as asset management programs and sustainable infrastructure initiatives. In December 2005, legislation was introduced to establish a \$7.5 billion federal trust fund for wastewater infrastructure improvements. This bill, H.R. 4560, proposed to use a concept for funding such projects that has been promoted by wastewater treatment industry officials, other stakeholders, and some environmentalists, who argue it could provide a new source of money for necessary system upgrades amid dwindling federal funds. The bill contemplated a system of user fees to create the fund, but the source of revenue was not specified in the bill. Congress did not act on this legislation.

Other Clean Water Act Issues

Several other CWA issues have drawn some degree of congressional attention.

Regulatory Protection of Wetlands. How best to protect the nation's remaining wetlands and regulate activities taking place in wetlands has become one of the most contentious environmental policy issues, especially in the context of the CWA, which contains a key wetlands regulatory tool, the permit program in Section 404. It requires landowners or developers to obtain permits for disposal of dredged or fill material that is generated by construction or similar activity into navigable waters of the United States, including wetlands. Section 404 has evolved through judicial interpretation and regulatory change to become one of the principal federal tools used to protect wetlands, although that term appears only once in Section 404 itself and is not defined there. At the same time, its implementation has come to be seen as intrusive and burdensome to those whose activities it regulates. At issue today is how to address criticism of the Section 404 regulatory program while achieving desired goals of wetlands protection.¹⁴

Unlike the rest of the act, the permit aspects of Section 404 are administered by the U.S. Army Corps of Engineers, rather than EPA, although the Corps uses EPA environmental guidance. Other federal agencies including the U.S. Fish and Wildlife Service (FWS) and Natural Resource Conservation Service (NRCS) have more limited roles in the Corps' permitting decisions. Tension has existed for many years between the regulation of activities in wetlands under Section 404 and related laws, on the one hand, and the desire of landowners to develop property that may include wetlands, on the other hand. The conflicts over wetlands regulation have for the most part occurred in administrative proceedings, as Congress has not amended Section 404 since 1977, when it provided exemptions for categories of routine activities, such as normal farming and forestry. Controversy has grown over the extent of federal jurisdiction and impacts on private property, burdens and delay of permit procedures, and roles of federal agencies and states in issuing permits.

Judicial Proceedings Involving Section 404. One issue involving long-standing controversy and litigation is whether isolated waters are properly within the jurisdiction of Section 404. Isolated waters that are wetlands which are not physically adjacent to navigable surface waters often appear to provide only some of

¹⁴ For additional information, see CRS Report RL33483, *Wetlands: An Overview of Issues*, by Jeffrey Zinn and Claudia Copeland.

the values for which wetlands are protected, such as flood control or water purification, even if they meet the technical definition of a wetland. On January 9, 2001, the Supreme Court ruled on the question of whether the CWA provides the Corps and EPA with authority over isolated waters. The Court's 5-4 ruling in *Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers* (531 U.S. 159 (2001)) held that the Corps' denial of a 404 permit for a disposal site on isolated wetlands solely on the basis that migratory birds use the site exceeds the authority provided in the act.

The full extent of impacts on the regulatory program resulting from this decision remains unclear, even five years after the ruling, in part because of different interpretations of *SWANCC* reflected in subsequent federal court cases. While it continues to be difficult to fully assess how regulatory protection of wetlands will be affected as a result of the *SWANCC* decision and other possible changes, the remaining responsibility to protect affected wetlands falls on states and localities.¹⁶ Environmentalists believe that the Court misinterpreted congressional intent on the matter, while industry and landowner groups welcomed the ruling. Policy implications of how much the decision restricts federal regulation depend on how broadly or narrowly the opinion is applied. Some federal courts have interpreted *SWANCC* narrowly, thus limiting its effect on current permit rules, while a few read the decision more broadly.

The government's current view on this key question was expressed in EPA-Corps guidance issued in January 2003. It provides a legal interpretation essentially based on a narrow reading of the Court's decision, thus allowing federal regulation of some isolated waters to continue, but it calls for more headquarters review in disputed cases. Administration press releases say that the guidance demonstrates the government's commitment to "no-net-loss" wetlands policy. However, it is apparent that the issues remain under discussion, because at the same time, the Administration issued an advance notice of proposed rulemaking (ANPRM) seeking comment on how to define waters that are under jurisdiction of the regulatory program.¹⁷ The ANPRM did not actually propose rule changes, but it indicated possible ways that Clean Water Act rules might be modified to further limit federal jurisdiction, building on *SWANCC* and some subsequent legal decisions.

The government received more than 133,000 comments on the ANPRM, most of them negative, according to EPA and the Corps. Environmentalists and many states opposed changing any rules, saying that the law and previous court rulings call for the broadest possible interpretation of the Clean Water Act (and thus a narrow interpretation of *SWANCC*), but developers sought changes to clarify interpretation of the *SWANCC* ruling. In December 2003, EPA and the Corps announced that the

¹⁶ For additional information, see CRS Report RL30849, *The Supreme Court Addresses Corps of Engineers Jurisdiction Over 'Isolated Waters': The SWANCC Decision*, by Robert Meltz and Claudia Copeland.

¹⁷ U.S. Department of Defense, Department of the Army, Corps of Engineers and U.S. Environmental Protection Agency, "Advance Notice of Proposed Rulemaking on the Clean Water Act Regulatory Definition of 'Waters of the United States' and Joint Memorandum," 68 Federal Register 1991-1998, Jan. 15, 2003.

Administration would not pursue development of rule changes concerning federal regulatory jurisdiction over isolated wetlands. The EPA Administrator said that the Administration wanted to avoid a contentious and lengthy rulemaking debate over the issue. Environmentalists and state representatives expressed relief at the announcement. Interest groups on all sides have been critical of confusion in implementing the 2003 guidance, which constitutes the main tool for interpreting the reach of the *SWANCC* decision. Environmentalists remain concerned about diminished protection resulting from the guidance, while developers said that without new regulations, confusing and contradictory interpretations of wetland rules will continue.

Federal courts continue to have a key role in interpreting and clarifying the *SWANCC* decision. On February 21, 2006, the Supreme Court heard arguments in two cases brought by landowners (*Rapanos v. United States*; *Carabell v. U.S. Army Corps of Engineers*) seeking to narrow the scope of the CWA permit program as it applies to development of wetlands. The issue in both cases had to do with the reach of the CWA to cover “waters” that were not navigable waters, in the traditional sense, but were connected somehow to navigable waters or “adjacent” to those waters. (The act requires a federal permit to discharge dredged or fill materials into “navigable waters.”) Many legal and other observers hoped that the Court’s ruling in these cases would bring greater clarity about the scope of federal regulatory jurisdiction.¹⁷

The Court’s ruling was issued on June 19 (*Rapanos , v. United States*, 126 S.Ct. 2208 (2006)). In a 5-4 decision, a plurality of the Court, led by Justice Scalia, held that the lower court had applied an incorrect standard to determine whether the wetlands at issue are covered by the CWA. Justice Kennedy joined this plurality to vacate the lower court decisions and remand the cases for further consideration, but he took different positions on most of the substantive issues raised by the cases, as did four other dissenting justices. Early judgments by legal observers suggest that the implications of the ruling (both short-term and long-term) are far from clear. Because the several opinions written by the justices did not draw a clear line regarding what wetlands and other waters are subject to federal jurisdiction, one likely result is more case-by-case determinations and continuing litigation. There also could be renewed pressure on the Corps and EPA to clarify the issues through an administrative rulemaking.

Congressional Actions. 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 the *SWANCC* decision and to press the government to clarify its interpretation of the Court case. Committee Members and public witnesses indicated that a lack of guidance has led to inconsistent regulatory decisions by Corps officials in individual regions of the country, and subsequent judicial decisions by other federal and state court have been mixed. At the hearing, Corps and EPA officials testified on their efforts to develop guidance,

¹⁷ For additional information, see CRS Report RL33263, *The Wetlands Coverage of the Clean Water Act is Revisited by the Supreme Court: Rapanos and Carabell*, by Robert Meltz and Claudia Copeland.

which subsequently was released in January 2003. Concern about lingering confusion over the *SWANCC* decision and its implementation by the Corps was the topic of an oversight hearing by the Senate Environment and Public Works Committee in June 2003. Developers and others in the regulated community criticized the Corps and EPA, saying that the January 2003 guidance document had not clarified the reach of federal jurisdiction. A House Transportation and Infrastructure subcommittee also held a hearing on post-*SWANCC* issues on March 30, 2004.

Controversies about the *SWANCC* guidance issued by EPA and the Corps in 2003 persist. In response, on May 18, 2006, the House adopted an amendment to a bill providing FY2007 appropriations for EPA (H.R. 5386). The amendment (passed by a 222-198 vote) would bar EPA from spending funds to implement the 2003 policy guidance. Supporters of the amendment said that the guidance goes beyond what the Supreme Court required in *SWANCC*, has allowed many streams and wetlands to be unprotected from development, and has been more confusing than helpful. Opponents of the amendment predicted that it would make EPA's and the Corps' regulatory job more difficult than it already is. Congress adjourned *sine die* in December without taking final action on H.R. 5386, thus delaying final action until the beginning of the 110th Congress.

Legislation to overturn the *SWANCC* decision by providing a broad definition of "waters of the United States" was introduced in the 109th Congress (H.R. 1356/S. 912, the Clean Water Authority Restoration Act of 2005). Other legislation to narrow the definition of "waters of the United States" also was introduced (H.R. 2658, the Federal Wetlands Jurisdiction Act of 2005).¹⁸ No further action occurred on either bill. For now, it is unclear whether the more recent decision in the *Rapanos* and *Carabell* cases will accelerate congressional interest in these or other proposals to address uncertainties about federal jurisdiction over wetlands and other waters. On August 1, a Senate Environment and Public Works subcommittee held a hearing on the Court's June 19 *Rapanos* decision. While some witnesses urged Congress to clarify the jurisdictional issues, others urged EPA and the Corps to issue new guidance and/or initiate a rulemaking to change applicable regulations. Administration witnesses said that EPA and the Corps are working on new guidance for their regulatory staffs, but have not yet decided whether a rulemaking is needed.

TMDLs and State Water Quality Standards. The CWA requires states to identify pollution-impaired water segments and develop "total maximum daily loads" (TMDL) that set the maximum amount of pollution that a water body can receive without violating water quality standards. A TMDL is essentially a plan to allocate responsibility for implementing pollution control measures within an area or watershed in order to remedy water quality impairments. Until recently, there had been little implementation of the TMDL provision (Section 303(d)), which Congress enacted in 1972. Since the early 1990s, environmental groups have filed lawsuits in 38 states to pressure EPA and states to meet the law's requirements. Of the suits tried or settled to date, more than half have resulted in court orders requiring

¹⁸ For additional information and discussion of similar legislation in the 108th Congress, see CRS Report RL33483, *Wetlands: An Overview of Issues*.

expeditious development of TMDLs, thus driving the program that had previously received little attention. At issue today are controversies over implementation of the existing TMDL program and regulatory revisions that EPA issued in July 2000; the 2000 revisions were issued partly in response to the lawsuits and were intended to strengthen the program. That rule was highly controversial (and never went into effect) because of issues such as potential burdens on states, industries, cities, and others to implement a revised TMDL program and potential impacts on some agriculture and forestry sources, which are not now directly subject to CWA regulations. Because of those controversies, the Clinton Administration delayed the effective date of the 2000 rule until October 2001.

In the FY2001 appropriations act funding EPA, P.L. 106-377, Congress requested a study by the National Academy of Sciences (NAS) on the scientific basis of the TMDL program. The NAS report was issued in June 2001.¹⁹ 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. In addition, the General Accounting Office (now the Government Accountability Office) concluded in a report that inconsistent monitoring, data collection, and listing procedures used by states to identify impaired waters have hindered efforts to develop effective TMDL programs.²⁰

In October 2001, the Bush Administration announced that it would delay the rule for 18 months (until May 2003) to allow EPA officials time to review the rule and the NAS report. This action came after a federal court approved the Administration's request for a similar suspension of litigation that is challenging the regulation (nearly a dozen interest groups have sued EPA over various parts of the TMDL rule). In the interim and continuing for the present time, existing rules and requirements and court-sanctioned TMDL schedules (affecting approximately 22 states) remain in place.²¹

On March 19, 2003, EPA withdrew the July 2000 TMDL rule. EPA officials said that implementation of the existing TMDL program will continue in the meantime, but that additional time is needed to decide whether and how to revise the current program. EPA is considering initiating an entirely new rule or other options, but no further timeframe or proposal has been announced. Recent congressional attention to these issues has been limited to oversight hearings held by the House

¹⁹ National Research Council, National Academy of Sciences, *Assessing the TMDL Approach to Water Quality Management*. National Academy Press, Washington, DC, June 2001, 82 p.

²⁰ U.S. Government Accountability Office, *Water Quality: Inconsistent State Approaches Complicate Nation's Efforts to Identify Its Most Polluted Waters*, GAO-02-186, January 2002, 41 p.

²¹ For additional information, see CRS Report 97-831, *Clean Water Act and Total Maximum Daily Loads (TMDLs) of Pollutants*, by Claudia Copeland.

Transportation and Infrastructure Subcommittee on Water Resources in June and November 2001. Implementation of existing TMDL requirements and possible regulatory changes, if issued, could be of interest to Congress in view of continuing disagreement among states, cities, industry, and environmental advocates about program effectiveness and efficiency.

“Good Samaritan” Legislation. In the 109th Congress, bills were introduced to address the legacy of pollution from inactive and abandoned hardrock mines (IAMs) that degrades the environment throughout the United States, particularly in the West. EPA has estimated that 40% of headwaters in the West have been adversely impacted by acidic and other types of drainage from abandoned sites where gold, silver, copper, lead, and iron ore were mined. The core concept underlying the bills is that, in order to address the problem of pollution from IAM sites, it is appropriate to encourage cleanup by so-called “Good Samaritan” entities. To do so, the bills (H.R. 1266, S. 1848, and an Administration proposal, H.R. 5404 and S. 2780) proposed to establish a process for issuing permits to Good Samaritans and to provide incentives in the form of reduced liability from environmental laws and less stringent environmental cleanup standards. Proponents, who include mining companies and industry associations, maintain that any degree of cleanup is better than inaction or the status quo, and they argue that, if not addressed in this legislation, the issues of liability exposure under environmental law and strict regulatory standards could stymie voluntary cleanups. Opponents, especially many environmental and conservation advocates, acknowledge that cleanup would benefit the environment, but they expressed concern that exemptions and relief such as these bills proposed might be the first step in dismantling key environmental legislation, because the bills were vague about standards that would apply to a Good Samaritan cleanup.²²

In the 109th Congress, three House and Senate committees held hearings on issues raised by the Good Samaritan legislation. Testimony was heard from witnesses representing EPA, states, hardrock mining industry companies and associations, and environmental groups. On September 13, 2006, the Senate Environment and Public Works Committee approved S. 1848 (S.Rept. 109-351), a bill that would have allowed Good Samaritans to apply for an EPA permit that relieves the cleanup party of liability and regulatory requirements under several environmental laws, including the Clean Water Act, Superfund, the Toxic Substances Control Act, the Solid Waste Disposal Act, and the National Environmental Policy Act. It was a free-standing bill and would not have amended any of these laws. The legislation would have relieved a potential Good Samaritan of the need to obtain CWA permits and of any requirement that discharges from the cleanup site must attain water quality standards. No further action occurred on the Good Samaritan legislation.

Other Implementation Issues. Also of legislative interest were the impacts of recent court rulings in several cases concerning implementation of existing provisions of the law and involving questions of whether certain activities require a

²² For additional information, see CRS Report RL33575, *Cleanup at Abandoned Hardrock Mines: Issues Raised by “Good Samaritan” Legislation in the 109th Congress*, by Claudia Copeland and Robert Meltz.

Clean Water Act discharge permit. A fundamental element of the act is the requirement that the “discharge of a pollutant” from a point source shall be carried out pursuant to a permit authorized by the National Pollutant Discharge Elimination System (NPDES) program under Section 402 of the law. In 2004, the Supreme Court held that the transfer of polluted water from one waterbody to another requires a permit, notwithstanding that no new pollutant is added in the process of transfer (*South Florida Water Management District v. Miccosukee Tribe of Indians*, 124 S. Ct. 1537 (2004)).²³ The decision raised concerns in agricultural areas where such transfers often occur in supplying irrigation water, presently without a permit. Congress did not hold oversight hearings on impacts of the Court’s decision, and legislation that might have addressed the ruling was not introduced.

Decisions of federal courts in two cases have held that aerial application of a pesticide over and into U.S. waters requires a CWA permit, even when the pesticide use meets other requirements of federal law, including the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). These and related decisions drew the attention of many pesticide applicators, including public health entities such as mosquito control districts, concerned with how the rulings might affect their need to control pests associated with diseases such as the West Nile virus. In November 2006, EPA finalized a rulemaking seeking to resolve the conflict over the regulatory scope of the CWA and FIFRA related to pesticide use, in light of the recent litigation, by promulgating regulations to clarify circumstances under which a CWA permit is or is not required for activities carried out pursuant to FIFRA. Congress examined these issues in oversight hearings, one by a House Transportation and Infrastructure subcommittee in October 2002 and another by a House Government Reform subcommittee in October 2004. Legislation intended to affirm that a CWA permit is not required for use of FIFRA-approved pesticides was introduced in the 109th Congress, the Pest Management and Fire Suppression Flexibility Act (H.R. 1749, S. 1269). A House Transportation and Infrastructure subcommittee held a hearing on H.R. 1749 on September 29, 2005, but no further action occurred.²⁴

For Additional Reading

National Research Council, National Academy of Sciences. *Assessing the TMDL Approach to Water Quality Management*. National Academy Press, Washington, DC. June 2001. 82 p.

U.S. Congressional Budget Office. *Future Investment in Drinking Water and Wastewater Infrastructure*. Washington, November 2002. 58 p.

U.S. Environmental Protection Agency. *The National Water Quality Inventory: 2000 Report*. Washington, September 2002. “EPA-841-R-2-001.” 207 p.

²³ For information, see CRS Report RL32569, *The Supreme Court Revisits the Environment: Seven Cases Decided or Accepted in the 2003-2004 Term*, by Robert Meltz.

²⁴ For background, see CRS Report RL32884, *Pesticide Use and Water Quality: Are the Laws Complementary or In Conflict?* by Claudia Copeland.

- . *The Clean Water and Drinking Water Infrastructure Gap Analysis*. Washington, September 2002. “EPA-816-R-02-020.” 50 p.
- . *Clean Watersheds Needs Survey 2000, Report to Congress*. Washington, August 2003. “EPA-832-R-03-001.” 1 vol.
- U.S. Government Accountability 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.