

Environmental Protection Agency

FY 2001 Annual Performance Plan and Congressional Justification

Clean and Safe Water

Strategic Goal: All Americans will have drinking water that is clean and safe to drink. Effective protection of America's rivers, lakes, wetlands, aquifers, and coastal and ocean waters will sustain fish, plants, and wildlife, as well as recreational, subsistence, and economic activities. Watersheds and their aquatic ecosystems will be restored and protected to improve public health, enhance water quality, reduce flooding, and provide habitat for wildlife.

Resource Summary (Dollars in thousands)

		FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request	FY 2001 Req. v. FY 2000 Ena.
Goal 2	Clean and Safe Water	\$3,424,511.4	\$3,491,587.3	\$2,754,826.5	(\$736,760.8)
Obj. 1	Safe Drinking Water, Fish and Recreational Waters	\$1,088,104.5	\$1,189,400.4	\$1,099,270.9	(\$90,129.5)
Obj. 2	Conserve and Enhance Nation's Waters	\$355,049.8	\$381,485.2	\$438,783.0	\$57,297.8
Obj. 3	Reduce Loadings and Air Deposition	\$1,981,357.1	\$1,920,701.7	\$1,216,772.6	(\$703,929.1)
	Total Workyears	2,610.3	2,722.8	2,672.7	(50.1)

Background and Context

Safe and clean water is needed for drinking, recreation, fishing, maintaining ecosystem integrity, and commercial uses such as agricultural and industrial production. Our health, economy, and quality of life depend on reliable sources of clean and safe water. Waterfowl, fish, and other aquatic life that live in and on the water, as well as plants, animals, and other life forms in terrestrial ecosystems are dependent on clean water.

Contaminated water can cause illness and even death. Furthermore, exposure to contaminated drinking water poses a special risk to such populations as children, the elderly, and people with compromised immune systems. In 1994, 17 percent of those served by community water systems were supplied drinking water that violated health standards at least once during the year. EPA efforts in subsequent years are targeted to reducing this percentage.

While the Nation has made considerable progress over the past 25 years, serious water pollution problems remain. The National Water Quality Inventory 1996 Report to Congress indicates that 16 percent of assessed rivers and streams and 35 percent of assessed lake acres are not safe for fish consumption; 20 percent of assessed rivers and streams and 25 percent of lake acres are not safe for recreational activities (e.g, swimming); and 16 percent of assessed rivers and streams and 8 percent of lake acres are not meeting drinking water uses. Many of the remaining challenges require a different approach to environmental protection because they are not amenable to traditional end-of-pipe pollution controls. These problems derive from the activities of people in general. The challenge for EPA is to encourage people to consider how their day-to-day decisions can affect the quality of their rivers, streams, lakes, wetlands, and estuaries.

Means and Strategy

To achieve the nation's clean and safe water goals, EPA will implement the watershed approach in carrying out its statutory authorities under the Safe Drinking Water Act Amendments of 1996 and the Clean Water Act. Protecting watersheds involves participation by a wide variety of stakeholders, a comprehensive assessment of the condition of the watershed, and implementation of solutions based on the assessment of conditions and stakeholder input. Full involvement of stakeholders at all levels of government, the regulated community, and the public is fundamental to the watershed approach. The watershed approach helps EPA, its Federal partners, states, tribes, local governments, and other stakeholders to implement tailored solutions and maximize the benefits gained from the use of increasingly scarce resources.

EPA will continue to implement the Safe Drinking Water Act (SDWA) Amendments of 1996 that chart a new and challenging course for EPA, states, tribes, and water suppliers. The central provisions of the Amendments include 1) improving the way that EPA sets drinking water safety standards and develops regulations that are based on good science and data, prioritization of effort, sound risk assessment, and effective risk management; 2) establishing new prevention approaches, including provisions for operator certification, capacity development, and source water protection; 3) providing better information to consumers, including consumer confidence/right-to-know reports; and 4) capitalizing and managing the drinking water state revolving fund (DWSRF) program to assist public water systems in meeting drinking water standards.

EPA has increased efforts to provide states and tribes tools and information to assist them in protecting their residents from health risks associated with contaminated recreational waters and noncommercially-caught fish. These tools will help reduce health risks, including risks to sensitive populations such as children and subsistence and recreational anglers. EPA activities include development of criteria, enhanced fish tissue monitoring, risk assessment, and development of fish and shellfish consumption advisories. EPA will also establish improved safety guidelines and pollution indicators so that local authorities can monitor their recreational waters in a cost-effective way and close them to public use when necessary to protect human health. For beaches, EPA's three-

part strategy is to strengthen beach standards and testing, improve the scientific basis for beach assessment, and develop methods to inform the public about beach conditions.

The President's Clean Water Action Plan (CWAP), announced in February 1998, calls for more than 100 specific key actions by EPA and by many other Federal agencies with either water quality responsibilities or activities that have an impact on water quality. These key actions cover most aspects of the water program at EPA. The Action Plan mobilizes Federal, state, and local agencies to achieve the Nation's clean water goals through the watershed approach, brings a sharp focus to the critical actions that are required, and establishes deadlines for meeting these commitments over the next several years. For FY 2001, EPA requests \$762 million for the CWAP and an additional \$21,525,400 in related funding.

Key to the watershed approach is continuation of EPA-developed scientifically-based water quality standards and criteria under the Clean Water Act. Where water quality standards are not being met, EPA will work with states and tribes to improve implementation of total maximum daily load (TMDL) programs that establish the analytical basis for watershed-based decisions on the need for additional pollution reductions. EPA will continue to develop and revise national effluent guideline limitations and standards, capitalize and manage the Clean Water State Revolving Fund (CWSRF) program and other funding mechanisms, streamline the National Pollutant Discharge Elimination System (NPDES) permit program, and revise the NPDES and water quality standards regulations to achieve progress toward attainment of water quality standards and support implementation of TMDLs in impaired water bodies. The Agency will continue to work on reducing the NPDES permit backlog, in partnership with states, by targeting permitting activities toward those facilities posing the greatest risk to the environment. In addition, the Agency will continue to expand its training and electronic information activities to improve the efficiency and effectiveness of the NPDES program. These strategies and activities are particularly important as the NPDES program faces significant new demands with the implementation of the phase II storm water rule, the strategy for animal feeding operations and coverage of additional wet-weather sources contributing to pollution problems. EPA will also continue reorienting its point source programs towards a watershed focus.

The CWSRF is a significant financial tool for achieving clean and safe water and for helping to meet the significant needs for wastewater infrastructure over the next 20 years. All 50 states and U.S. territories have benefitted from this and other wastewater funding. This budget request includes \$800 million for the Clean Water State Revolving Fund (CWSRF). This investment keeps EPA on track with our commitment to meet the goal for the CWSRF to provide an average of \$2.0 billion in annual financial assistance. Indeed, the President's Budget calls for cumulative additional capitalization of \$3.2 billion in fiscal years 2002-2005, which will enable the program to exceed the Administration commitment. Over \$17 billion has already been provided to capitalize the CWSRF, more than twice the original Clean Water Act authorized level of \$8.4 billion. Total SRF funds available for loans since 1987, reflecting loan repayments, state match dollars, and other sources of funding, are approximately \$30 billion, of which \$26 billion having been provided to communities as financial assistance (\$4.2 billion was available for loans as of June 1999).

To further support the objectives of the Clean Water Action Plan, the Agency proposes for FY 2001 to allow states to reserve up to an amount equal to 19% of their CWSRF capitalization grants to provide grants of no more than 60% of the costs of implementing eligible nonpoint source and estuary management projects. Projects receiving grant assistance must, to the maximum extent practicable, rank highest on the State's list used to prioritize projects eligible for assistance. States may make these grants using either a portion of their capitalization grant itself, or using other funds in their state revolving fund (e.g., state match, repayments, bond proceeds). Grants may also be combined with loans for eligible projects for communities which might otherwise find loans unaffordable.

EPA is assisting states and tribes to characterize risks, rank priorities, and implement a mix of voluntary and regulatory approaches through improved state nonpoint source management programs. Working with EPA, states and tribes are strengthening their nonpoint source programs to ensure that needed nonpoint source (NPS) controls are implemented to achieve and maintain beneficial uses of water. States will continue to implement coastal nonpoint source programs approved by EPA and the National Oceanic and Atmospheric Administration under the Coastal Zone Act Reauthorization Amendments, and to work with the U.S. Department of Agriculture to promote implementation of Farm Bill programs consistent with state nonpoint source management needs and priorities. EPA will also provide tools to states to assess and strengthen controls on air deposition sources of nitrogen, mercury, and other toxics.

With respect to wetlands, EPA will work with Federal, state, tribal, local, and private sector partners on protection and community-based restoration of wetlands, and with its Federal partners to avoid, minimize, and compensate for wetland losses through the Clean Water Act Section 404 and Farm Bill programs.

Through continuing implementation of Clean Water Action Plan priorities, watershed restoration action strategies will be implemented in high priority watersheds across the nation that will enable local leaders to take a stronger role in setting priorities and solving water quality problems that affect the quality of life in their communities. EPA will work with states, tribes, municipalities, and the regulated community to ensure that the Phase II rules for the stormwater program are implemented to solve problems caused by sediment and other pollutants in our waters. EPA will also establish criteria for nutrients (i.e., nitrogen and phosphorus) so that more states can develop water quality standards that protect waters from harmful algal blooms such as *pfisteria*, dead zones, and fish kills, which develop as a result of an excess of these nutrients. EPA will work with States to fund priority watershed projects through the CWSRF to reduce nonpoint and estuary pollution. The Agency will also work to reduce nonpoint source pollution from failing septic systems.

Research

EPA's research efforts will continue to strengthen the scientific basis for drinking water standards through the use of improved methods and new data to better evaluate the risks associated with exposure to chemical and microbial contaminants in drinking water. To support the Safe Drinking Water Act (SDWA) and its 1996 Amendments, the Agency's drinking water research will develop dose-response information on disinfected byproducts) DBPs, waterborne pathogens, arsenic and other drinking water contaminants for characterization of potential exposure risks from consuming tap water, including an increased focus on filling key data gaps and developing methods for chemicals and microbial pathogens on the Contaminant Candidate List (CCL). The Agency will develop and evaluate cost-effective treatment technologies for removing pathogens from water supplies while minimizing DBP formation, and for maintaining the quality of treated water in the distribution system and preventing the intrusion of microbial contamination. By reducing uncertainties and improving methods associated with the assessment and control of risks posed by exposure to microbial contaminants in drinking water, EPA is providing the scientific basis necessary to protect human health and ensure that BY 2005, 95 percent of the population served by community water systems will receive water that meets drinking water standards in place in 1994.

Research to support the development of ecological criteria will improve our understanding of the structure, function and characteristics of aquatic systems, and will evaluate exposures to stressors and their effects on those systems. This research can then be used to improve risk assessment methods to develop aquatic life, habitat, and wildlife criteria. Through the development of a framework for diagnosing adverse effects of chemical pollutants in surface waters, EPA will be able to evaluate the risks posed by chemicals that persist in the environment and accumulate in the food chain, threatening wildlife and potentially human health. This research will facilitate the assessment of ecological health of the nation's waters, providing water resource managers with a tool for determining whether their aquatic resources support healthy aquatic communities. The Agency also will develop cost effective technologies for managing contaminated sediments with an emphasis on identifying innovative in situ solutions. EPA will continue to develop diagnostic tools to evaluate the exposures to toxic constituents of wet weather flows, and develop and validate effective watershed management strategies for controlling wet weather flows, especially when they are high volume and toxic. This research will also develop effective beach evaluation tools necessary to make timely and informed decisions on beach advisories and closures.

Strategic Objectives and FY 2001 Annual Performance Goals

Objective 01: Safe Drinking Water, Fish and Recreational Waters

- Reduce exposure to contaminated recreation waters by increasing the information available to the public and decision-makers. (Supports CWAP)

- Maintain percent of the population served by water systems that will receive drinking water meeting all health-based standards that were in effect as of 1994.

Objective 02: Conserve and Enhance Nation's Waters

- Restore and protect estuaries through the implementation of Comprehensive Conservation and Management Plans (CCMPs).
- Assure that States and Tribes have effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards program priorities.
- Water quality will improve on a watershed basis such that 550 of the Nation's 2,150 watersheds will have greater than 80 percent of assessed waters meeting all water quality standards, up from 500 watersheds in 1998.

Objective 03: Reduce Loadings and Air Deposition

- 500 projects funded by the Clean Water SRF will initiate operations, including 300 projects providing secondary treatment, advanced treatment, CSO correction (treatment), and/or storm water treatment. Cumulatively, 6,200 SRF funded projects will have initiated operations since program inception.
- Industrial discharges of pollutants to the nation's waters will be significantly reduced through implementation of effluent guidelines.
- Current NPDES permits reduce or eliminate discharges into the nation's waters of (1) inadequately treated discharges from municipal and industrial facilities; and (2) pollutants from urban storm water, CSOs, and CAFOs.

Highlights

So that all Americans have water that is safe to drink, EPA will work to ensure that 91 percent of the population will continue to receive drinking water from systems meeting all health-based standards in effect as of 1994. The Agency will also assist states in implementing the requirements of the Stage 1 Disinfection/Disinfection Byproducts (D/DBP) Rule and the Interim Enhanced Surface Water Treatment Rule, as well as various other new rules including radon, Unregulated Contaminant Monitoring (UCMR), and filter backwash rules. EPA will also continue to target resources for drinking water rule-making, as mandated by the 1996 SDWA Amendments, and for risk assessment and improved analytical methods on potential contaminants identified in the 1998 Contaminant Candidate List (CCL) EPA is also using the 1998 CCL for determining drinking water research priorities in addition to rule-making and data collection priorities.

States are facing increasing workloads to expeditiously develop, in many cases consistent with Court-ordered deadlines, critically-needed total daily maximum loads for their impaired water bodies. To assist states in addressing their TMDL needs, a targeted increase in Section 106 grants of \$45 million is requested with a state cost-share requirement of 40% of project costs. These funds, coupled with state flexibility to use up to 20% of their increased Section 319 grants, and other funding sources are intended to provide sufficient resources to allow States to meet their TMDL obligations in 2001 based on the estimated cost of EPA's TMDL regulation proposed in August 1999.

EPA is requesting a significant new investment to restore water quality in the Great Lakes. Under this \$50 million initiative, EPA would competitively award matching grants to state and local governments to clean up contaminated sediments, control stormwater, restore wetlands, acquire greenways and buffers, and control polluted runoff. States or municipalities would use the funds to address existing "areas of concern" (AOCs) that were defined in 1987 by the International Joint Commission -- a joint partnership between the United States and Canada. These funds would support restorative and protective actions in the 31 AOCs that fall wholly or partly in U.S. waters, and represent a dramatic increase in support for Great Lakes states' and communities' efforts to preserve and enhance their waterways.

The Administration's Clean Water Action Plan provides a comprehensive strategy for assessing and restoring the Nation's most impaired watersheds. Fundamental to the Agency's efforts to conserve and enhance the Nation's waters is the management of water quality resources on a watershed basis, with the full involvement of all stakeholders including communities, individuals, businesses, state and local governments, and tribes. A key priority for 2001 will be continued emphasis on development and implementation of Watershed Restoration Action Strategies (WRAS) in those waters identified by the states as most in need of restoration. By the end of 2001, the third year of its availability to states, incremental funding under the Clean Water Act Section 319 grants program will have provided \$350 million in environmental improvement projects in these impaired waters. Starting in FY 2000, these incremental section 319 funds are only available to states with approved upgraded section 319 programs, as specified in the CWAP. EPA will also encourage, using a watershed approach, the establishment of additional planning groups or partnerships to develop local comprehensive plans for managing dredged material in an environmentally sound manner. Furthermore, EPA will be an active participant in the development of these plans.

Habitat restoration and protection is another key component of the Clean Water Action Plan. By 2001, with EPA's support, the National Estuary Program will have preserved, restored, or created an additional 50,000 acres of habitat, including sea grass and shellfish beds. In 2001, EPA will continue implementing the national assessments regarding the causes of, and appropriate management responses to, harmful algal blooms and hypoxia. EPA will also be working with the Invasive Species Council on the national and agency-specific action plan to implement the Invasive Species Executive Order.

A key element of the Agency's effort to achieve its overarching goal of clean and safe water is the reduction of pollutant discharges from point sources and nonpoint sources. The National Pollutant Discharge Elimination System program (which includes NPDES permits, urban wet weather, large animal feeding operations, mining, the pretreatment program for non-domestic wastewater discharges into municipal sanitary sewers, and biosolids management controls) establishes controls on pollutants discharged from point sources into waters of the United States. Key annual performance goals for FY 2001 are to reduce industrial discharges of toxic pollutants by 4 million pounds, nonconventional pollutants by 370 million pounds, and conventional pollutants by 386 million pounds as compared to 1992 reduction levels. To ensure that all point sources are covered by current permits, EPA has developed a backlog reduction strategy under which 89 percent of major permittees and 66 percent of minor permittees will have current permits in place by FY 2001. EPA will also begin evaluating data received from the first round of monitoring from all monitoring sites under the National Marine Debris Monitoring Program. This program monitors marine debris in an effort to determine sources of the debris, much of which enters coastal waters through stormwater runoff.

States report that pollution from nonpoint sources (NPS) is the largest cause of water pollution, with agriculture as a leading cause of impairment in 25 percent of the river miles surveyed. In order to restore and maintain water quality, significant loading reductions from nonpoint sources must be achieved. Because EPA has limited direct NPS authority under the Clean Water Act, state NPS programs are critical to our overall success. To achieve reductions in loadings, it is essential for EPA to work with states to expeditiously implement the nine key program elements in their strengthened nonpoint source programs. EPA will encourage states to make use of Clean Water State Revolving Funds and other Federal resources to finance projects that address polluted runoff.

Research

In 2001, EPA's drinking water research program will conduct research to reduce uncertainties and improve methods associated with the assessment and control of risks posed by exposure to microbial contaminants in drinking water, with a focus on emerging pathogens listed on the Contaminant Candidate List (CCL). As required by the SDWA amendments, the first CCL was published in 1998 and included 9 microbial contaminants in its Research Priorities Category that require more data before a regulatory determination can be made. There are significant data gaps with regard to understanding the occurrence of these microbes in source and distribution system water, linkages between water exposure and infection, and the effectiveness of candidate treatment technologies to remove and inactivate these contaminants. The development of this crucial information will provide the scientific basis necessary to protect human health and ensure that 95 percent of the population served by community water systems will receive water that meets drinking water standards.

As part of EPA's effort to conserve and enhance the nation's waters, the aquatic stressors research program will develop a framework for diagnosing adverse chemical pollutants in surface waters. In 2001, EPA will publish a compendium of case studies illustrating the application of the Stressor Identification Guidelines, as well as reports on risk characterization for watersheds and

sediment toxicity. These tools will enable water resource managers to identify critical stressors to aquatic ecosystems and better focus restoration and watershed management decisions.

Because almost 40% of rivers, lakes, and coastal waters surveyed by states do not meet water quality goals, effective watershed management strategies and guidance for Wet Weather Flow (WWF) dischargers is one of the key priority areas remaining to assure clean water and safe drinking water. In 2001, EPA will continue to develop and validate effective watershed management strategies for controlling WWFs, especially when they are high volume and toxic. This research will also develop and provide effective beach evaluation tools necessary to make timely and informed decisions on beach advisories and closures.

External Factors

Drinking Water and Source Water

The Safe Drinking Water Act Amendments of 1996 is one of the first environmentally-focused statutes to establish not only regulatory, programmatic, enforcement, and management/administration provisions to ensure that safe drinking water is available nationwide, but also an outreach process to involve all stakeholders in the development and implementation of the statutory provisions. To date, this extensive stakeholder involvement has had major benefits on the Agency's efforts in implementing the 1996 SDWA amendments. The complexity of upcoming regulations and the resource intensive process of gaining consensus with stakeholders poses a continuing challenge in implementing the 1996 SDWA amendments.

The adoption of health-based and other programmatic regulations by the states is another critical factor. Since states have primary enforcement authority (primacy) for drinking water regulations, the states must have sufficient staff and resources to work with public water systems to ensure that they are implementing and complying with the new regulations. To help them with these efforts, EPA has increased Public Water Systems Supervision grant funding by approximately 60% since FY 1993. EPA will provide technical assistance and training to the states on the microbial rule and various other new rules including radon, unregulated contaminant monitoring, the Long-Term Enhanced Surface Water Treatment and Filter Backwash rules, and the groundwater and arsenic rules that are being promulgated in 1999-2000. EPA assistance is essential to success because of the emphasis in the new rules on site-specific evaluations and tailored requirements.

Full implementation of the Underground Injection Control (UIC) program depends on state and local participation. EPA, in collaboration with the states, will work with local government managers of source water protection programs to implement the Class V rule, which focuses on two types of shallow injection wells, i.e., large capacity cesspools and motor vehicle disposal wells. Furthermore, EPA will continue to work directly with the states to implement the changes necessary for maintaining primacy for the Class V program. Because of the sheer number of Class V wells -- over 600,000 -- and the threat they pose to ground water sources of drinking water, implementation of the overall UIC program could be impacted by resource constraints at the state level. In addition,

the Agency has full or partial direct implementation responsibility for 17 states, the District of Columbia and all tribes.

A key element of the Clean Water Action Plan is the integration of public health goals with aquatic ecosystem goals when identifying watershed priorities. To help facilitate a comprehensive framework, Federal agencies involved in water quality initiatives are asked to direct "program authorities, technical assistance, data and enforcement resources to help states, tribes, and local communities design and implement their drinking water source water assessment and protection programs within the unified watershed protection and restoration efforts..." (Clean Water Action Plan, page 29). EPA has concluded an agreement with participating Federal agencies for this aspect of the CWAP and will work to ensure that these agencies work aggressively to promote source water assessment and protection activities.

Fish and Recreational Waters

The Agency's success in protecting human health from consumption of contaminated fish or exposure to contaminated recreational waters could be compromised by several major constraints, including lack of regulatory authority, inability to measure behavior, and lack of state and local resources.

The Clean Water Act does not require that states or tribes operate fish advisory or beach protection programs. The Agency's role is primarily to support them through guidance, scientific information, and technical assistance. EPA can not take regulatory action to assure that states and tribes conform to guidance; therefore, success depends on state/tribal/local commitment to achieving these goals.

One way of determining whether we have reduced the consumption of contaminated fish and shellfish is to find out if people eat the fish they catch from waters where fish advisories have been issued. In order to determine whether we have reduced exposure to contaminated recreational waters, we also need to know if people comply with beach closure notices when they are issued. Acquiring statistical evidence for such determinations is difficult.

Without comprehensive, consistent monitoring of all the Nation's waters, we do not know how many waters should be under advisory or how many beaches should be closed. This expensive and time-consuming task is beyond the resources of most states.

Watersheds and Wetlands

EPA's efforts to meet our watershed protection objective are predicated on the continuation and improvement of relationships with our Federal, state, tribal, and local partners. Because of the vast geographic scope of water quality and wetlands impairments and the large number of partners upon whose efforts we depend, we must continue to build strong and lasting relationships with all levels of government, the private sector, research community, and interest groups. Success in

meeting our wetlands objectives is particularly dependent on the continuing and enhanced cooperation with the Army Corps of Engineers, who has lead responsibility for wetland permitting Fish and Wildlife Service, National Marine Fisheries Service, Federal Emergency Management Agency, and the Natural Resources Conservation Service.

The Clean Water Action Plan development process underscored the interrelations of the Federal government's environmental protection and stewardship agencies and programs, and the critical importance of working together to maximize achievements. Without continued government-wide coordination and commitment to the Plan's implementation, we may not meet our water quality objectives. This is particularly true for successful enhancement of state nonpoint source management programs. The states will also need to continue efforts to overcome historical institutional barriers to achieve full implementation of their coastal nonpoint pollution control programs as required under the Coastal Zone Act Reauthorization Amendments.

Fundamental to all of the Agency's efforts to meet this objective is managing water quality resources on a watershed basis, with full involvement of all stakeholders including communities, individuals, business, state and local governments and tribes. EPA's ability to meet this objective will depend on the success of regulatory and non-regulatory programs and nationwide efforts to provide and use a broad range of policy, planning, and scientific tools to establish local goals and assess progress.

In addition, we must continue to improve our understanding of the environmental baseline and our ability to track progress against goals, which also depends on external parties. While the Index of Watershed Indicators and state 305(b) reporting provide some assessments of water quality, we will continue to depend upon and provide support to our partners and stakeholders in their efforts to improve measurement tools and capabilities. EPA recognizes that better performance goals are needed to measure nonpoint source loadings. The Agency will continue to work with Federal and state agencies to develop both near-term and long-term environmental outcome measures for nonpoint source loadings reductions.

Point and Nonpoint Sources

States and localities are assumed to be able to continue to raise sufficient funds for construction of necessary wastewater treatment and control facilities to accompany Federal financial assistance. This is especially critical for new regulated sources like storm water and combined sewer overflows (CSOs). In addition they must be able to maintain sufficient programmatic funds to continue to effectively manage point source programs.

Clean water goals associated with reduction of pollutant discharges from point sources through the NPDES permitting program rely heavily on EPA's partnership with States as 44 States are currently authorized to carry out the NPDES program. EPA will also work with States to reduce pollution from the approximately 11 million failing U.S. septic systems.

It is assumed that states will effectively strengthen and implement improved nonpoint source programs consistent with their commitments in this area. The CWAP specified that starting in FY 2000, the incremental section 319 grant funds over \$100 million would only go to states with approved upgraded section 319 programs as an incentive for states to upgrade these programs. Federal agencies must work together and fulfill their mutual commitments under their Strategic Plans and the Clean Water Action Plan if we are to succeed in addressing nonpoint source needs. No one Agency can succeed in NPS management without the partnership efforts of a wide range of Federal, state, local and private sector interests.

Environmental Protection Agency

FY 2001 Annual Performance Plan and Congressional Justification

Clean and Safe Water

Objective # 1: Safe Drinking Water, Fish and Recreational Water

By 2005, protect public health so that 95% of the population served by community water systems will receive water that meets drinking water standards, consumption of contaminated fish and shellfish will be reduced, and exposure to microbial and other forms of contamination in waters used for recreation will be reduced.

Resource Summary (Dollars in thousands)

	FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request	FY 2001 Req. v. FY 2000 Ena.
Safe Drinking Water, Fish and Recreational Waters	\$1,088,104.5	\$1,189,400.4	\$1,099,270.9	(\$90,129.5)
Environmental Program & Management	\$107,541.5	\$120,537.3	\$116,506.0	(\$4,031.3)
Science & Technology	\$47,853.5	\$50,175.7	\$53,484.4	\$3,308.7
State and Tribal Assistance Grants	\$932,709.5	\$1,018,687.4	\$929,280.5	(\$89,406.9)
Total Workyears	845.4	878.4	869.4	(9.0)

Key Programs Summary (Dollars in thousands)

	FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request
Drinking Water Regulations	\$33,926.7	\$33,230.5	\$37,809.8
Drinking Water Implementation	\$28,134.2	\$29,668.5	\$32,234.5
UIC Program	\$9,412.2	\$9,594.9	\$10,687.6
Rural Water Technical Assistance	\$9,955.0	\$10,401.3	\$232.0

State PWSS Grants	\$93,780.5	\$93,305.5	\$93,305.5
State Underground Injection Control Grants	\$10,500.0	\$10,975.0	\$10,975.0
Source Water Protection (CWAP - related)	\$10,741.3	\$10,302.3	\$11,631.1
Water Infrastructure:Drinking Water State Revolving Fund (DW-SRF)	\$775,000.0	\$820,000.0	\$825,000.0
Safe Drinking Water Research	\$45,734.6	\$47,367.6	\$48,872.5
EMPACT	\$1,319.0	\$0.0	\$937.6
Project XL	\$390.5	\$0.0	\$0.0
Civil Enforcement	\$1.3	\$0.0	\$0.0
Rent, Utilities and Security	\$0.0	\$12,229.7	\$13,432.4
Administrative Services	\$281.2	\$2,285.6	\$2,422.9
Regional Management	\$0.0	\$211.6	\$221.9

FY 2001 Request

The Safe Drinking Water Act (SDWA) is one of the key environmental statutes that protects public health for all Americans. The four major areas of emphasis in the 1996 SDWA Amendments are: 1) improving the way that EPA sets drinking water safety standards and develops regulations based on good science and data, prioritization of effort, identification of relatively high-risk subpopulations, sound risk assessment, and effective risk management; 2) establishing new prevention approaches, including provisions for operator certification, capacity development, and source water protection; 3) providing better information to consumers, including consumer confidence/"right-to-know" reports (see Goal 7); and, 4) providing funding for infrastructure investments for communities through the Drinking Water State Revolving Fund (DWSRF). In addition, the 1996 Amendments increase the states' flexibility to focus on public health-based priorities and to make better use of resources; recognize the problems facing small systems and establish appropriate cost-effective approaches for such systems; and emphasize the role of stakeholders and partnerships as a key aspect of an effective national drinking water program.

In 2001, EPA, states/tribes, and water suppliers will continue to implement the 1996 SDWA Amendments with the principal purpose of improving and maintaining drinking water safety for the 240 million Americans who get their drinking water from public water systems. Under SDWA, EPA and the states/tribes are responsible for ensuring that consistently safe drinking water is provided to all persons served by public water systems. EPA meets that responsibility by setting drinking water safety standards and providing technical assistance and other support to states that have primary

enforcement authority (primacy) of drinking water regulations. EPA will be directly implementing programs in states, territories, and on Indian lands that do not have primacy for some or all drinking water regulations. The State of Wyoming, the District of Columbia and all Indian tribes fall into this category.

In 2001, the Agency is continuing its efforts on the development of high priority drinking water regulations for arsenic and radionuclides (other than radon). With regard to arsenic, there are numerous national and international reports on the various health effects attributable to arsenic that are being considered in the development of this rule. In addition, EPA is performing analyses and conducting consultations to help determine small system treatment options because arsenic removal is likely to be relatively expensive and have a disproportionate impact on small systems. The Agency is also charged (in accordance with a Court stipulation) with making final decisions on regulatory levels for all of the non-radon radionuclides (alpha emitters, beta emitters, radium, and uranium). EPA expects to promulgate the final rule by the November 2000 judicial deadline.

Activities will continue on the final three rules that comprise the Microbial/Disinfection Byproducts (M/DBP) rule cluster. They are, the Ground Water Rule (GWR), the Long-Term Enhanced Surface Water Treatment (LTESWT) rules, and Stage 2 Disinfection/Disinfection Byproducts (Stage 2 D/DBP). Work on these rules is proceeding according to the plans and milestones established to meet statutory deadlines. EPA expects that the GWR will be promulgated in the first quarter of fiscal year 2001. The LTESWT rule is being developed in two parts: the first will extend the Interim Enhanced Surface Water Treatment Rule to apply to small systems and will be promulgated in November 2000; the second is being developed in conjunction with the Stage 2 D/DBP rule and will apply to all public water systems. The Agency's work on these two rules will include an expanded focus on risk analysis to determine the most significant risks and the acceptable balance among competing risks. For instance, while disinfectants are effective in reducing microbial risk, they react with natural organic matter in the water to form DBPs. Several of the DBPs have been shown to cause adverse health effects in laboratory animals. The optimal balance will adequately control risks from pathogens, simultaneously control DBPs to acceptable levels, and ensure that costs of water treatment are commensurate with public health benefits. Proposal of these two rules is expected in February of 2001.

Occurrence and treatment data collection activities for "new" contaminants, i.e., those not specifically identified in the 1996 SDWA Amendments, but rather, cited through the Contaminant Candidate List (CCL), will continue in 2001. Additional resources in this area will provide fundamental support for rule development activities which will include analyses of data on: 1) source water occurrence of chemical and microbiological contaminants; 2) outbreaks of disease/illnesses for microbiological occurrence; 3) dose-response relationships for contaminants of concern, including projected impacts on sensitive subpopulations; 4) water consumption to predict risks and to improve comparative risk modeling; 5) efficacy of various treatment technologies for removing contaminants of concern; and 6) analytical methods to ascertain the presence (at levels of interest) of these contaminants. These data collection and analyses are critical for the selection of contaminants from the CCL for which standards and regulations are to be developed, as required by the 1996 SDWA

Amendments. The CCL, issued in 1998, is composed of 60 contaminants. Based on the most recent analysis of these contaminants, 12 are Regulatory Determination Priorities and the balance -- 48 -- are Research Priorities. The Agency must make decisions on whether or not to regulate at least five contaminants from the CCL by August 6, 2001. Given that much of the work for selecting contaminants to be regulated will be completed prior to 2001, requested funding levels in this fiscal year will be for directed to expanding data on occurrence, risk analysis and assessment, and possible treatment technologies for those contaminants in the Research Priorities category. Since the statutory deadline for proposing regulations on selected contaminants is August 2003, the Agency must work diligently and expeditiously to make regulatory determination decisions. Requested increases for research and development (see below) will also support this effort.

The Agency will also continue to seek improvements in risk management, e.g., economics, industry characterization, and areas of special emphases. The 1996 Amendments require a more comprehensive analysis of the costs and benefits of drinking water regulations than was done in the past. These new approaches will take several years to complete, particularly in the area of benefits analyses, where groundbreaking research and analysis have begun and will be ongoing. Efforts to update the Community Water System survey (the Agency's baseline information on the numbers and characteristics of systems in various size categories) will also occur in 2001. In addition, the Agency will continue to explore treatment approaches for various contaminants of interest that have particular applicability to small public water systems. One area of emphasis in the risk management context will be special populations such as children and the elderly, while another will focus on vulnerable public water systems, especially small systems serving less than 10,000 people.

The funding of activities related to the implementation of drinking water regulations is an important component of this request. The Stage 1 D/DBP and Interim Enhanced Surface Water Treatment Rules, promulgated in late 1998, address the greatest risk reduction efforts for drinking water protection by regulating microbiological contaminants, such as *cryptosporidium*, and controlling byproducts from disinfectants. EPA resources have been redirected to assist states/tribes in adopting and implementing these important rules as well as the Consumer Confidence Report and Public Notification rules. During 2001, the Agency expects to provide training and technical assistance on all of these rules. EPA assistance is essential to success because of the emphasis in new regulations for site-specific evaluations and tailoring of requirements. The Agency will directly implement these rules in those states and on Indian lands that do not have primacy for some or all drinking water regulations. The Agency will also be carrying out activities related to the Unregulated Contaminant Monitoring Rule.¹

¹In 1998-2000 and continuing in 2001, the Agency has set aside \$2,000,000 from the Drinking Water State Revolving Fund (DWSRF) for the purpose of reimbursing small systems for monitoring under the Unregulated Contaminants Monitoring Rule (UCMR).

In addition, states will be implementing the guidelines for operator certification² and recertification to ensure that owners and operators of public water systems are fully implementing existing and new SDWA requirements. Also, there will be significant activity related to implementation of the capacity development provisions of the SDWA. States' focus will be on both new and existing public systems. States will continue to implement their programs for new systems to ensure that they demonstrate technical, managerial, and financial capacity. States will begin to implement their capacity development strategies for existing systems. Through capacity development strategies, states will assist existing water systems in acquiring and maintaining the technical, financial, and managerial capacity needed for compliance with SDWA. EPA support for the states' implementation of these programs directly affects public health outcomes as these activities provide a framework to help systems comply with drinking water standards. EPA is reducing technical assistance and support to the states for these capacity building programs in 2001, because states' success in adhering to the requirements in 1999 was greater than expected. One reason for the states' success in these areas is the incentives built into the Drinking Water State Revolving Fund program. EPA is required to withhold up to 20 percent of a state's allocation if the state does not meet the requirements of either capacity development or operator certification/recertification guidelines. Regarding capacity development, all states met the October 1999 deadline for submitting capacity development plans for new water systems, and thus avoid withholding of DWSRF resources. We also expect that all states will meet the deadline for operator certification requirements (September 30, 2001 for states submitting substantially equivalent programs) and avoid DWSRF withholding.

The Agency established the Safe Drinking Water Information System (SDWIS) to serve as the central repository for data on both the states' implementation of and compliance with existing and new drinking water regulations. SDWIS is the nation's best source of national compliance information on all SDWA requirements and provides the critical data base for such documents as Annual Compliance Reports, Drinking Water Consumer Confidence Reports, development of regulations, trends analyses and public information. Currently, the Agency is implementing a data reliability action plan that was developed in 1999 as a multi-step approach to improve the quality and reliability of data in SDWIS. Two important steps were completed by the end of 1999, i.e., 1) an industry survey analysis in which water utilities examined and compared data in SDWIS with their own data, and 2) a study of the variety of ways that states are organized to carry out their drinking water program responsibilities and the effects of those organization on the way in which data are collected. Those two steps laid a foundation on which to develop and implement state-specific, on-site training for data entry into SDWIS, which will be carried out in 2000 and 2001, and will significantly enhance and improve the completeness, accuracy, and timeliness of the data in SDWIS.

Another of the Agency's major priorities is preventing contamination of our Nation's drinking water sources. This is a vital aspect of comprehensive protection of public health and a high priority

²As was the case in 1999 (\$15M) and 2000 (\$30M), the Agency will set aside resources from the DWSRF in 2001 (\$30M) for grants to states to be used for reimbursing small system operators for the costs of training and certification, as authorized in section 1419(d)(4) of SDWA.

activity authorized and enhanced in the 1996 SDWA Amendments. In 2001, we expect that all 50 states, the District of Columbia, and Puerto Rico will be conducting source water assessments based on their EPA-approved source water assessment plans. Data from these assessments will help determine the vulnerability to contamination of each states's sources of drinking water and the consequent risk to human health. Source water protection efforts will continue to be integrated with activities under the Clean Water Action Plan (CWAP) to expand the parameters of drinking water protection efforts. This integration is an example of how two water-related statutes -- the Safe Drinking Water Act and the Clean Water Act (CWA) -- can be implemented to bring together source water protection efforts with watershed restoration efforts. Sources of drinking water that are identified through unified watershed assessments as high priority watersheds will receive expedited assistance in coordinating source water protection activities with watershed restoration action strategies. To emphasize the importance of this effort, since 1999 EPA has redirected workyears and expanded its Regional staff who will work in collaboration with states, tribes, and the Regional and field offices of other Federal agencies to implement source water protection programs and activities in high priority watersheds.

Increasing protective measures for source water is the principal focus of the rule on shallow (Class V) underground injection wells that was promulgated in 1999. Through a multi-partnered effort, EPA will work with local government managers of source water protection programs to implement the Class V rule. Furthermore, EPA will continue to work directly with the states to implement the changes necessary for maintaining primacy for the Class V program. EPA will also continue to implement, in full or in part, the UIC program for 17 states, the District of Columbia, and all Tribes.

The Agency will also continue support for the Drinking Water State Revolving Fund . The DWSRF was established to provide assistance to public water systems in order to finance the cost of infrastructure improvements as well as enhance water system management. All states will continue to administer their DWSRF in 2001. At least 1,800 community and non-community drinking water systems will have entered into DWSRF loans since the inception of the program in fiscal year 1997. With loans from the DWSRF, as many as 450 drinking water systems will be initiating operations after completing work to improve and upgrade their pipes, treatment plants, and other components of their drinking water infrastructure.

Also, through partnerships with the American Metropolitan Water Agencies and the American Water Works Association, EPA will work with water utilities undertaking measures to safeguard water supplies from terrorist and seditious acts. This is part of a coordinated government-wide effort to combat terrorism and is consistent with Presidential Decision Directive 63 issued in May of 1998. In support of this effort, the Agency will also implement an assessment of the vulnerability, and the methods to reduce vulnerability, of the drinking water supply to terrorist actions.

Reducing exposure to contaminants in fish and shellfish and through contact in recreational waters is a top priority for the National Water Program. In 2001, the Agency will continue to work

with its state partners to ensure that they adopt into their standards a suite of scientifically-based criteria to protect recreational, fish consumption, drinking water, human health, and aquatic life uses.

Approximately 75% of the Nation's population lives, works, or plays on or near our coastal waters. Use of water for recreation is divided into primary contact recreation (swimming) and secondary contact recreation (activities such as boating). Studies indicate that some recreational waters (inland rivers, lakes, and coastal waters) expose swimmers to unacceptable levels of infectious disease. Susceptible populations (e.g., children) are the most likely to develop illnesses or infections after swimming in polluted water. The Agency strives to establish improved safety guidelines and pollution indicators so that local authorities can monitor their recreational waters in a cost-effective way and close them to public use when necessary to protect human health. For beaches, our three-part goal is to strengthen beach standards and testing, to improve the scientific basis for beach assessment, including accurately determining causes of beach closures, and to develop methods to inform the public about beach conditions.

Monitoring and risk assessment procedures used by states in their fish and shellfish and beach contamination advisory programs vary widely. In 2001, the Agency will assess the consistency in state fish consumption programs and begin developing fish advisories for state programs that are not consistent with the Federal guidance. In support of this effort, the Agency will continue a nationwide survey of toxic residues in fish and complete epidemiological studies in the Great Lakes, in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), on health effects of exposure to selected bioaccumulative toxics. The Agency will support monitoring/modeling pilot programs that improve states' ability to predict and address contamination events at beaches. In 2001, we will work with states, tribes, and other stakeholders to develop a stratified monitoring strategy to enable states to use statistical sampling methods to assess fish contamination and recreational waters. The Agency will also evaluate the health risks in seafood harvested from the Gulf of Mexico and continue to work on alternative risk-based indicators and methods for skin, respiratory, eye, ear, throat, and gastrointestinal diseases most commonly resulting from exposure to contaminants at beaches. EPA will also issue up to three human health criteria for bioaccumulative pollutants.

To assure that the public has timely information on the quality of specific local beaches, the Agency will continue to expand an Internet-based Federal information source called Beach Watch on beach advisories and closings across the United States as well as on beaches that are and are not monitored. Working with states, tribes, and local governments, EPA will expand the database to include information on high-use fresh water beaches and on the location of combined sewer overflow (CSO) outfalls near beaches. We will also begin to add digitized maps of coastal and inland high-use beaches to the Internet database. The Agency will publish model water quality standards for beaches that states and tribes can incorporate into their own water quality standards programs and will conduct workshops on monitoring techniques for states and tribes.

In addition, the Agency will continue to work with stakeholders, encouraging full involvement at all levels of government, to expand the total proportion of surface waters assessed for possible fish and beach contamination and to implement fish consumption and beach contamination advisory programs that are consistent with published national guidance. The Agency will also strive to develop and provide improved tools, such as scientifically-based models and methods, that will enable environmental managers to better predict, assess, and take appropriate actions to protect the public. The Agency will work with its state and local partners to assess and document beach health conditions, identify major priorities and scientific concerns, and improve public notification practices so that individuals can make better decisions about when and where to recreate. These efforts will be supported by the Agency's Beaches Environmental Assessment, Closure and Health (BEACH) research program which is developing better tools for determining when beach closures and advisories are warranted and is developing better mechanisms for detecting and measuring microbial contamination.

Research

The continued occurrence of waterborne disease outbreaks demonstrates that contamination of drinking water with pathogenic bacteria, viruses, and parasites still poses a serious health risk when treatment is inadequate or when contamination occurs in the distribution system. Microbial contaminants may cause infection, disease, and mortality in susceptible populations. To combat waterborne microbial diseases, public water systems disinfect drinking water with chlorine or alternative disinfectants such as ozone in combination with chlorine or chloramine. However, unwanted chemical by-products are produced during the disinfection process when the disinfectants react with organic material during the treatment process. After long-term ingestion, these disinfection by-products (DBPs) have been shown to cause harmful health effects in experimental animals, including cancer and adverse reproductive outcomes. In addition, some human studies have suggested that consumption of chlorinated DBPs may be associated with elevated cancer rates and adverse reproductive outcomes. The magnitude and severity of the risks from known contaminants are of current concern. However, less is known about the risks from emerging pathogens, unidentified or poorly characterized DBPs, and other emerging chemical contaminants. Because these contaminants are relatively unknown and understudied, tens of millions of people are potentially at risk from exposure to DBP, emerging pathogens, or chemical contaminants.

In FY 2001, EPA's drinking water research will focus on filling key data gaps and developing analytical detection methods for measuring the occurrence of chemical and microbial contaminants on the Contaminant Candidate List (CCL). Research will also continue to support the Safe Drinking Water Act Amendments (SDWAA) priorities, emphasizing research and assessment on sensitive subpopulations, adverse reproductive effects of drinking water contaminants, research on selected issues such as DBPs and waterborne disease occurrence studies, as well as treatment and maintenance of water quality in the distribution system.

The ability to detect and measure contaminants, particularly microbes, in drinking water is hampered by the lack of available methods. Information on contaminant occurrence in drinking water

and potential human exposure is needed for setting research priorities, and measurement methods are needed to conduct well-designed toxicity and treatability studies. In FY 2001, EPA's drinking water research will include the development of analytical detection methods for chemical and microbial contaminants with potential public health significance. Research will be conducted to identify DBPs resulting from various disinfection processes, and develop improved analytical methods to detect and measure DBPs and CCL-listed chemicals. EPA will apply and evaluate newly developed measurement methods in occurrence and exposure studies for viruses, bacteria and parasites in drinking water. In FY 2001, EPA will produce a report on the occurrence of CCL-related pathogens, such as *Mycobacterium* and *Aeromonas*, in source and drinking water.

Many uncertainties exist with respect to our ability to adequately assess the health effects associated with exposure to pathogenic bacteria, viruses and parasites in drinking water. In FY 2001, epidemiology research will be conducted to characterize the nature of infection and disease associated with exposure to priority waterborne pathogens on the CCL. Studies will also continue to evaluate the influence of source water quality, treatment technology and demographic characteristics on waterborne disease in selected communities in the U.S. This research will lead to a better understanding of the impacts of various factors such as pathogen virulence and host immune status on disease outcome in exposed individuals.

Health effects research on chemicals in FY 2001 will continue to focus on laboratory and field studies of selected high priority DBPs, arsenic and contaminants on the CCL. Studies on priority chemical contaminants on the CCL will provide toxicity information to support screening level and/or detailed CCL determinations. Specific data needs will depend upon the contaminant of interest, and may include an evaluation of carcinogenicity, reproductive effects, or other studies. Research on DBPs will focus on adverse reproductive outcomes, cancer, and to the extent necessary, neurotoxic and immunotoxic effects. Further research and risk assessment studies can help define potential risks related to these health effects. Therefore, efforts will continue to focus on evaluating the adequacy and application of exposure and health effects data for characterizing risks. All drinking water health effects research funding is requested in the S&T account. EPA does not plan to use the health effects research set-aside from the Drinking Water SRF.

Drinking water assessment research in FY 2001 will continue to characterize the magnitude and severity of health risks associated with exposures to DBPs as complex mixtures, as well as to individual CCL contaminants. Data gaps and research needs for chemicals on the CCL will be identified through the screening and prioritization of untested contaminants and preliminary assessments of chemicals with limited or incomplete information. Research will be conducted to improve cancer and non-cancer risk assessments/characterizations for the Stage 2 D/DBPs rule, CCL and other regulatory decisions using health effects and exposure information and improved dose-response modeling, where appropriate, for both single chemicals and complex mixtures. The results of this work will be used to establish Maximum Contaminant Level Goals (MCLGs); provide information needed for characterization of risk for disinfectants, DBPs and other drinking water contaminants; and provide information for conducting cost and benefit analyses. In FY 2001, EPA will also conduct research to characterize the risks of pathogenic microorganisms that may be

transmitted through drinking water; develop quantitative risk assessment models based upon human dose-response data for a key group of waterborne pathogens; and address factors such as infectious dose, host immunity, and mortality rates. Particular emphasis will be placed on the development of disease transmission models for human disease occurrence following exposure to pathogens in drinking water.

One of the challenges in providing safe drinking water lies in minimizing the risks associated with DBPs while controlling microbial pathogenic risks. Researchers will continue to focus on developing and evaluating cost-effective treatment and management approaches that simultaneously reduce the risk of waterborne diseases and exposures to DBPs. Work will continue in FY 2001 to address emerging pathogens and chemicals on the CCL. The microbial portion of this research will focus on determining the treatability of helicobacter pylori, aeromonas and adenovirus. In FY 2001, EPA will complete screening treatability studies for at least two microbes on the CCL to determine whether these contaminants are effectively inactivated by conventional treatment. The chemical portion of this research will focus on investigating the treatability of methyl tertiary butyl ether (MTBE) and perchlorate and the use of membranes to effectively remove CCL chemicals from drinking water. In addition, efforts will continue to develop and evaluate tools for determining when it is necessary to disinfect ground water supplies. These studies will reduce uncertainties and improve methods associated with the control of risks posed by exposure to microbial and chemical contaminants in drinking water. This research will also be used to establish treatment options for MCLs under the SDWAA.

To effectively protect the health of the consumer there must be assurance that the transmission and delivery of water from the treatment plant to the tap is done in a way that guaranties the water quality has not degraded to unacceptable levels. There is substantial evidence that many factors can cause the quality of water to deteriorate after treatment. Research will focus on the two main management options for addressing this risk: 1) improving distribution system integrity to prevent contaminant intrusion, backflow and cross-connections from contaminated sources and 2) improving control of distribution system conditions (e.g. treatment residuals, disinfectant residual, residence time, mixing, piping materials, corrosion inhibitors) to minimize formation and release of undesirable pathogens and chemicals.

In FY 2001, research will be conducted to improve analytical techniques for inorganic arsenic species in drinking water and to develop and refine arsenic speciation methods for biological matrices and foods. Studies on arsenic will also be conducted in humans and animals to evaluate the important health effects and dose-response relationships for effects such as cancer, cardiovascular disease, and other toxic endpoints that may be of concern. Arsenic research in FY 2001 also includes a comprehensive evaluation and integration of the health effects (cancer and non-cancer) induced by arsenic; the evaluation of dose-response data; and the identification of strengths and uncertainties. EPA will continue to investigate strategies for the acceptable control of water treatment residuals enriched by arsenic.

The Safe Drinking Water Act Amendments of 1996 required the EPA to publish a list of unregulated contaminants to aid in priority setting for the Agency's drinking water program. The existing Contaminant Candidate List (CCL) categorizes 60 chemicals and microbes where additional research in the areas of health effects, analytical methods and /or treatment are necessary to provide a sound scientific basis for regulatory decision making. Additional funding will focus on increasing support for research on the contaminants identified in the Contaminant Candidate List (CCL) that was issued in February 1998, as well as other drinking water research priorities, consistent with currently developed research plans and the CCL Research Plan being developed in FY 2000.

This research program is also supported through the Agency's Postdoctoral Initiative. The FY 2001 request is the third year of the effort to enhance our intramural research program by supporting 4.0 additional postdoctoral positions under this objective. This enhancement continues to build upon the positive response by the academic community to EPA's announcement of 50 postdoctoral positions for FY 1999.

FY 2001 Change from FY 2000 Enacted

EPM

- (+\$800,000) Technical support and oversight to states for DWSRF implementation.
- (-\$263,200) Reductions to technical support for Operator Certification and Small Systems. Reductions are possible in these areas due to early state progress in achieving compliance with new requirements.
- (+\$467,700) Technical assistance to states and tribes for implementation of existing and new drinking water regulations.
- (+\$339,000) Resources to provide basic support for the development of the Contaminant Candidate List (CCL) 2, which is required in the 1996 SDWA Amendments to be issued in 2003
- (+\$2,376,200) Resources to provide fundamental support for all rule-making activities, including expanding data on occurrence, risk analysis and assessment, and possible treatment technologies for those contaminants in the Research Priorities category. Cross-cutting regulatory infrastructure includes: 1) developing methods and models for health risk assessment (i.e., sensitive population considerations), 2) analytical methods and laboratory certification, 3) economic and cost/benefit methods and data, 4) small system treatment technologies, and 5) treatment plant optimization approaches.
- (+\$1,294,100) The Agency will conduct major risk assessments to support regulatory determinations for the CCL, complete risk assessments for sensitive subpopulations in support of other drinking water standards, and implement risk communication responsibilities.

- (+\$383,000) Resources are for technical support for implementation of source water assessment programs.
- (+\$300,000) Under a coordinated government-wide effort to combat terrorism, EPA will work with water utilities undertaking measures to safeguard water supplies from terrorist acts.
- (+\$675,000) Increased resources are for technical support to states for UIC Class V program implementation.
- (+\$397,400) Increased resources will support continued implementation of a nationwide survey of fish tissue contamination.
- The 2001 Request is \$16,842,800 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.
- (-3.8 total workyears) Reflects a workyear decrease in accordance with fiscal year 2000 Appropriations language.
- (+\$3,733,300) Reflects payroll cost of living increases and enrichment and increased working capital fund requirements.

S&T

- (+\$2,000,000) Resources to undertake an assessment of the vulnerability, and the methods to reduce the vulnerability, of the public water supply to possible terrorist actions.
- (+\$108,600) Reflects payroll cost of living increases and enrichment.

STAG

- (+5,000,000) This increase is to the DWSRF for continuing to expand the base of funding available to states for replacing and improving the nations aging drinking water infrastructure.
- The 2001 Request is \$94,406,900 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.

Research

S&T

- (+\$5,000,000) The Safe Drinking Water Act Amendments of 1996 required the EPA to publish a list of unregulated contaminants to aid in priority setting for the Agency's drinking water program. The existing Contaminant Candidate List (CCL) categorizes 60 chemicals and microbes where additional research in the areas of health effects, analytical methods and /or treatment is necessary to provide a sound scientific basis for regulatory decision making. These funds will increase support for research on the contaminants identified in the CCL, as well as other drinking water research priorities, consistent with existing research plans and the CCL Research Plan being developed in FY 2000.
- (-\$6,252,100) The 2001 request is \$6,252,100 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process that are not part of the 2001 President's Request.
- (+\$2,418,000) The R&D program, including infrastructure support costs, is spread across eight of the ten goals in the Agency's GPRA/budget structure. Based on a review of actual infrastructure utilization under each goal (i.e., utilization of workyears and associated PC&B, travel, operating expenses, and working capital fund), adjustments are being made across goals to more accurately reflect expectations for use in FY 2001.

Annual Performance Goals and Performance Measures

1994 Drinking Water Health Standards

- In 2001 Maintain percent of the population served by water systems that will receive drinking water meeting all health-based standards that were in effect as of 1994.
- In 2000 Increase the percent of the population served by non-community, non-transient drinking water systems will receive drinking water for which no violations of any federally-enforceable health-based standards have occurred during the year.
- In 2000 91% of the population served by community drinking water systems will receive drinking water meeting all health-based standards that were in effect as of 1994, up from 83% in 1994.
- In 1999 91% of the population served by community water systems received drinking water meeting all health-based standards in effect as of 1994, up from 83% in 1994.

Performance Measures:	FY 1999	FY 2000	FY 2001
	Actuals	Estimate	Request

Population served by non-community, non-transient drinking water systems with no violations during the year

of any federally enforceable health-based standards that were in place by 1994.	96	96	% Population
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Population served by community drinking water systems with no violations during the year of any federally enforceable health-based standards that were in place by 1994.	91	91	% Population
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Population served by CWSs that will receive drinking water for which there have been no violations during the year of any federally-enforceable health-based standards that were in place by 1994.	91		% Population
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Baseline: In 1998, 85% of the population that was served by community water systems and 96% of the population served by non-community, non-transient drinking water systems received drinking water for which no violations of Federally enforceable health standards had occurred during the year.

Drinking Water Systems Operations

In 2001 Protect human health and ensure compliance with health-based drinking water standards through use of the Drinking Water State Revolving Fund (DWSRF).

In 2001 60% of tribal community and non-transient non-community water systems will have a certified operator.

In 2000 At least 100 eligible drinking water systems will have initiated operations that will protect human health and ensure compliance with health-based drinking water standards through use of the Drinking Water State Revolving Fund (DWSRF).

In 1999 792 community drinking water systems received DWSRF funds that helped ensure that these systems provide drinking water that meets all health-based standards.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
DWSRF assistance agreements to community and non-community drinking water systems (cumulative).		1200	1800	Agreements
Tribal community and non-transient non-community water systems with a certified operator.			60%	Water systems
CWSs receiving DW SRF funds to help ensure that they provide drinking water that meets all health-based standards	792			CWSs
DWSRF projects that have initiated operations (cumulative).		100	450	Projects

Baseline: In FY99, there were 792 DWSRF assistance agreements to community and non-community drinking water systems. DWSRF projects will begin to initiate operations in 2000. As of 1999, 56% of tribal community and non-transient non-community water systems had certified operators.

New Drinking Water Health Standards

In 2001 Protect public health by implementing rules promulgated in FY 1999 and FY 2000 and increasing information to consumers through public notification (PN).

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
States that have adopted the IESWTR/Stage 1 DBP.			35	States
States that have adopted the CCR.			35	States
States that have adopted the PN.			25	States
Baseline:	Estimates for the end of 2000 are: 17 states have adopted the IESWTR/Stage 1 DBP, 17 states have adopted the CCR, and 10 states have adopted the PN.			

Rules for High-Risk Contaminants

In 2001 Expand public health protection through: 1) promulgation of new regulations -- the Long-term 1 Enhanced Surface Water Treatment Rule, arsenic, ground water, radionuclides, filter backwash, and 2) making determinations whether or not to regulate potentially harmful contaminants from the CCL.

In 2000 2 regulations - radon & arsenic - will be promulgated/proposed respectively, & 5 rules (Stage 1 Disinfection Byproduct, Interim Enhanced Surface Water Treatment, Variances & Exemptions, Consumer Confidence Rpt & primacy revisions) will be implemented to ensure protection from high-risk contaminants.

In 1999 EPA promulgated the monitoring of unregulated contaminants rule ensuring that the highest risk contaminants are identified and managed.

In 1999 EPA issued and began implementing two protective drinking water standards for high- risk contaminants, including disease-causing micro-organisms (Stage I Disinfection/Disinfection Byproducts and Interim Enhanced Surface Water Treatment Rules).

In 1999 EPA developed major risk analyses for microbial and chemical contaminants to support selection of contaminants to be regulated.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Risk analyses completed in support of new regulations.			4	Analyses
Regulatory determinations for potentially harmful contaminants.			5	Determinations
States, including DC and PR, that have received training and technical assistance on 4 of the rules that are being implemented.		52		States, DC, PR
States submitting primacy revisions and number with				

signed extension agreements for primacy.		30/20		States
Risk analyses for microbial/chemical contaminants	1			List
Regulations promulgated that establish protective levels for high-risk contaminants	2			Rules
Availability of monitoring of unregulated contaminants rule.	1			Regulation
Regulations promulgated/proposed.		2	5	Regulations

Baseline: By the end of 2000 an estimated 5 rules will have been promulgated.

Source Water Protection

- In 2001 States and community water systems increase efforts and programs to protect their source water resources, including ground water.
- In 2000 States and community water systems increase efforts and programs to protect their source water resources including ground water.
- In 1999 11,011 community water systems are implementing programs to protect their source water.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Population served by community water systems that are implementing efforts to protect their source water resources.		20 million	36 million	People
CWSs implementing efforts to protect their source water resources.		4,500	6,500	CWSs
CWSs with ground or surface water protection programs in place	11,011			CWSs
States that are implementing their EPA-approved source water protection assessment programs.		40		States

Baseline: Currently, there is no baseline because the first full year of implementation of source water assessments is not until 2000. EPA has defined implementation as undertaking 4 or more of 5 stages of source water protection.

Underground Injection Well Management

- In 2001 Through the UIC program, EPA will contribute to the protection of ground water sources of drinking water from potential endangerment.
- In 2000 Increase protection of ground water resources by managing underground injection wells.

In 1999 The draft regulation for UIC Class V wells that will protect groundwater sources of drinking water from potential endangerment was completed and made available for public comment in fiscal year 1999. The final rule was published in the Federal Register on December 7, 1999.

In 1999 Data for underground injection wells tested and passed for mechanical integrity is expected to be available in March 2000.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
States that have formally adopted the Class V rule.			34	States
Class IV/V wells (by well type) brought under specific controls through permits or closures.		500	500	Wells
Issue proposed Phase 2 UIC Class V regulatory action.			1	Action
Availability of UIC Class V Regulation	0	1		Final Reg
Underground Injection wells tested and passed for mechanical integrity	TBD			% Wells
States, including DC and PR, that have received training and technical assistance on the Class V Rule.		52		States, DC, PR
UIC wells plugged as a direct action by the UIC program or indirectly by another program working in partnership with UIC to protect ground water sources of drinking water.		725	1,500	Wells
Baseline:	As of January 2000, no states had adopted the Class V Rule as the Rule was just finalized in December 1999.			

River/Lake Assessments for Fish Consumption

In 2001 12% of the nation's river miles and 17% of nation's lake acres will have been assessed to determine if they contain fish and shellfish that should not be eaten or should be eaten in only limited quantities. (supports CWAP)

In 2000 10% of the nation's river miles and 16% of the nation's lake acres will have been assessed to determine if they contain fish and shellfish that should not be eaten or should be eaten in only limited quantities. (supports CWAP)

In 1999 7% of river miles and 15% of lake acres were assessed for the need for fish advisories.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Lake acres assessed for the need for fish advisories and compilation of state-issued fish consumption advisory methodologies (cumulative).	15	16	17	% lake acres

Assessed river miles, lake acres, and estuary square miles that have water quality supporting designated beneficial uses, where applicable, for fish and shellfish consumption.		no target	no target	
States/Tribes monitoring and conducting assessments based on the national guidance to establish nationally consistent fish advisories.	25	40	40	States
River miles assessed for the need for fish consumption advisories & compilation of state-issued fish consumption advisory methodologies (cumulative).	7	10	12	% River miles

Baseline: In 1999, 7% of the Nation's rivers and 15% of the Nation's lakes were assessed to determine if they contained fish that should not be eaten or should be eaten in only limited quantities. In September 1999, 25 states/tribes are monitoring and conducting assessments based on the national guidance to establish nationally consistent fish advisories. As of the 1996 Report to Congress on the National Water Quality Inventory, 85% of assessed river and stream miles; 65% of assessed lake, reservoir, and pond acres; and 76% of assessed estuaries square miles supported their designated use for fish consumption. For shell fish consumption, 73% of assessed estuaries met this designated use.

Increase Information on Beaches

- In 2001 Reduce exposure to contaminated recreation waters by increasing the information available to the public and decision-makers. (Supports CWAP)
- In 2000 Reduce exposure to contaminated recreational waters by increasing information available to the public and decision-makers. (Supports CWAP)
- In 1999 Data entered for 26 states into the public right-to-know database on beach monitoring and closure.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Beaches for which monitoring and closure data is available at http://www.epa.gov/OST/beaches/ (cumulative).		1,403	1,800	2,200Beaches

Assessed river miles, lake acres, and estuary square miles that have water quality supporting designated beneficial uses, where applicable, for recreation.		no target	no target	
States for which data is entered into the public right-to-know database on beach monitoring and closures.	26			States

Baseline: By the end of FY1999, 33 states had responded to EPA's first annual survey on state and local beach monitoring and closure practices, and EPA made available to the public via the Internet information on conditions at 1,403 specific beaches. As of the 1996 Report to Congress on the National Water Quality Inventory, 79% of assessed river and stream miles; 75% of assessed lake, reservoir, and pond acres; and 76% of assessed estuaries square miles met their designated uses for recreation.

Drinking Water Designated Use

In 2001 Assess river miles, lake acres, and estuary square miles that have water quality supporting designated uses, where applicable, for drinking water supply.

In 2000 Assess river miles, lake acres, and estuary square miles that have water quality supporting designated uses, where applicable, for drinking water supply.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Assessed river miles/lake acres/estuary square miles that have water quality supporting designated beneficial uses, where applicable, for drinking water supply.		no target	no target	Rivers, etc.

Baseline: As of the 1996 Report to Congress on the National Water Quality Inventory, 84% of assessed river and stream miles and 75% of assessed lake, reservoir, and pond acres have water quality supporting designated uses for drinking water supply.

Research

Safe Drinking Water Research (Microbial)

In 2001 Reduce uncertainties and improve methods associated with the assessment and control of risks posed by exposure to microbial contaminants in drinking water with a focus on the emerging pathogens on the CCL.

In 2000 Reduce uncertainties and improve methods associated with the evaluation and control of risks posed by exposure to microbial contaminants in drinking water

In 2000 An interim report on modeling methods for estimating the vulnerability of ground water to viral contamination has been delayed until FY 2000.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Interim report on modeling methods for estimating the vulnerability of ground water to viral contamination.				
Report on waterborne disease outbreaks in the U.S.		1		report
Evaluation of Method 1622 for Cryptosporidium for use in the Information Collection Rule.		1		evaluation
Describe different technologies for cost/effective control of Cryptosporidium oocysts and DBPs.		09/30/2000		description
Report on occurrence of CCL-related pathogens in source and drinking water, such as mycobacterium and Aeromonas			1	report

Publish screening treatability studies for at least two microbes on the Candidate Contaminant List (CCL) to determine if these contaminants are effectively inactivated by conventional treatment. 2 studies

Baseline: Provide methods to assess the vulnerability of ground water supplies to viral contamination to support decisions on the necessity to disinfect these supplies.

Safe Drinking Water Research (DBPs)

In 2000 Reduce uncertainties and improve methods associated with the evaluation and control of risks posed by exposure to disinfection by-products in drinking water.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Report assessing the feasibility of attaining/constructing refined DBP exposure information for extant epidemiologic drinking water studies.		1		report
Report on the identification of new DBPs in drinking water formed by alternative disinfectants.		1		report
Complete a peer-reviewed report on the impacts of mixtures of selected DBPs on cancer and various noncancer endpoints, including reproduction and developmental effects, from animal studies.		1		report

Baseline: It has been recently discovered that minute concentrations of halogenated disinfection by-products (DBPs) are produced with chlorine disinfection reactions. These DBP compounds might have long term health effects. Alternative disinfection technologies like ozone and chlorine dioxide produce fewer or no chlorinated DBPs and have been proposed as chlorine alternatives. However, these alternatives will also produce potentially, undesirable chemical by-products that need characterization and identification so that informed risk management decisions are made. For example, disinfection with ozone produces various aldehydes, ketones, and most notably an increase in brominated by-product compounds. The bromated compounds are currently suspected of having carcinogenic and reproductive health risks. The numbers and variety of aldehydes and ketones are largely unidentified and therefore risks are also unknown.

Verification and Validation of Performance Measures

Goal 2 Objective 1

Performance Measure: Population served by community water systems with no violations during the year of any federally-enforceable health-based standards that were in place by 1994.

Performance Database: Safe Drinking Water Information System (SDWIS)

Data Source: States, Regions for Direct Implementation (DI) states

QA/QC Procedures: SDWIS has numerous edit checks built into the software to reject erroneous data. There are quality assurance manuals for states and regions to follow to ensure data quality. EPA offers training to states on data entry and data retrieval. EPA also provides tools, such as a trouble shooters guide and an error code database, for states to use when they have questions on how to enter or correct data.

Data Quality Review: Quality assurance audits of OGWDW's QA/QC processes, including those for SDWIS, are carried out every three years. This effort is coordinated by the QA division. Most recent was completed July 1999.

Data Limitations: SDWIS data quality has been problematic. It has been demonstrated that there are discrepancies between SDWIS data and state databases. In addition, utilities have pointed out specific data quality problems.

New/Improved Data or Systems: The Data Reliability Action Plan was created and is being implemented to address data quality problems.

Performance Measure: High-use beaches for which data is entered into the public right-to-know database on beach monitoring and closure

Performance Database: National Health Protection Survey of Beaches Information Management System

Data Source: State and local governments

QA/QC Procedures: Data are entered as reported by state/local governments.

Data Quality Review: n/a

Data Limitations: Not all government entities report data for their beaches. Possible lack of consistency between jurisdictions.

New/Improved Data or Systems: n/a

Performance Measure: Number of digitized maps entered into the public right-to-know database on beach monitoring and closure

Performance Database: National Health Protection Survey of Beaches Information Management System

Data Source: State and local governments

QA/QC Procedures: Data are entered as reported by state/local governments.

Data Quality Review: n/a

Data Limitations: Not all government entities report data for their beaches. Possible lack of consistency between jurisdictions.

New/Improved Data or Systems: n/a

Coordination with Other Agencies

The 1996 SDWA amendments include a provision that mandates a joint EPA/CDC study of waterborne diseases and occurrence studies in public water supplies. CDC is involved in assisting EPA in training health care providers (doctors, nurses, public health officials, etc.) on public health issues related to drinking water contamination and there is close CDC/EPA coordination on research on microbial contaminants in drinking water. EPA has in place a Memorandum of Understanding (MOU) and Interagency Agreement (IAG) with the Centers for Disease Control and Prevention (CDC) in the Department of Health and Human Services (DHHS) to implement this provision.

In implementing its source water assessment and protection efforts, the Agency coordinates many of its activities with other Federal agencies. There are three major areas of relationships with other agencies concerning source water assessments and protection.

- Land management involves coordinating with the Department of Agriculture's (USDA's) Forest Service; the Department of Interior's (DOI) National Park Service, and Bureaus of Land Management and Reclamation; the Department of Defense's (DOD's) facilities management and operations units; and the U.S. Postal Service (USPS) to address unified policy on federal land management within source water areas.

- Public Water Systems (PWSs). Some federal agencies, i.e., USDA (Forest Service), DOD, Department of Energy, DOI (National Park Service), and USPS, own and operate public water systems. EPA's coordination with these agencies focuses primarily on ensuring that they cooperate with the states in which their systems are located, and that they are accounted for in the states' source water assessment programs as mandated in the 1996 amendments to the Safe Drinking Water Act.
- Data Availability, Outreach and Technical Assistance. EPA coordinates with USGS (US Geological Survey), USDA (Forest Service, National Resource Conservation Service, Cooperative State Research, Education, and Extension Service (CSREES), Rural Utilities Service); DOT, DOD, DOE, DOI (National Park Service, and Bureaus of Indian Affairs, Land Management, and Reclamation); DHHS (Indian Health Service) and the Tennessee Valley Authority.
- Collaboration with USGS. EPA and USGS have identified the need to engage in joint, collaborative field activities, research and testing, data exchange, and analyses, such as the occurrence of unregulated contaminants, the environmental relationships affecting contaminant occurrence, evaluation of currently regulated contaminants, improved protection area delineation methods, laboratory methods, and test methods evaluation. EPA has an IAG with USGS to accomplish such activities.

The Agency also has in place an “umbrella” IAG that serves as the framework for coordinating the various source water- related activities in these many federal departments and agencies.

The Agency works closely with other federal and state agencies to assure the protection of human health from contaminated fish and shellfish and contaminated recreational waters. EPA works with the Agency for Toxic Substances and Disease Registry (ATSDR) and CDC to learn more about health effects of these types of exposure. The Agency works with ATSDR, National Academy of Sciences (NAS), National Oceanic and Atmospheric Administration, and Endocrine Disruptor Screening and Testing Advisory Committee to identify and characterize hazardous pollutants, including endocrine disruptors, and develop criteria for states to use in establishing water quality standards and developing Total Maximum Daily Loads. EPA cooperates with the Departments of the Army, Interior, Agriculture and the National Oceanic and Atmospheric Administration to manage the risks associated with contaminated sediments, which are the major sources of contamination of fish.

Research

While EPA is the federal agency with the mandate to assure the safety of drinking water, other federal and non-federal entities are conducting research that compliments EPA's research program on priority contaminants in drinking water. For example, health effects and exposure research is being conducted by the Centers for Disease Control and Prevention (CDC), the National Cancer

Institute (NCI), and the National Institute of Environmental Health Sciences (NIEHS). Research related to children's risk and assessing exposures to children is also being conducted in the Food and Drug Administration (FDA). Many of these research activities are being conducted in collaboration with EPA scientists. The private sector, particularly the water treatment industry, is conducting research in such areas as analytical methods, treatment technologies, and the development and maintenance of water resources. A Microbial/Disinfection By-Product Research Council was established several years ago with the American Water Works Association Research Foundation (AWWARF) and other stakeholder groups to coordinate research on microbial pathogens and DBPs. Research on arsenic is coordinated through joint participation of EPA, AWWARF and the Association of California Water Agencies on a technical advisory group and project advisory committees.

In addition to research on contaminants of current regulatory concern such as DBPs, arsenic and *Cryptosporidium*, outside entities are also conducting research on potential candidates for future regulation. In March 1998, EPA published a list of these contaminants called the Contaminant Candidate List (CCL). Research at EPA to address priority needs in health effects, exposure, risk assessment and analytical methods for chemicals and microbial pathogens on the CCL is being coordinated with research efforts in CDC, NIEHS, Department of Defense (DOD), and FDA. Interactions with external stakeholder groups have also been initiated which will help determine EPA's future regulatory priorities and research needs for drinking water. Interactions with the Science Advisory Board's Drinking Water Committee and the National Drinking Water Advisory Committee will also help EPA to formulate its drinking water research agenda for the contaminants found on the CCL. EPA is also working with USGS to evaluate in the field newly developed methods for measuring microbes in potential sources of drinking water.

Statutory Authorities

Safe Drinking Water Act

Clean Water Act

Toxic Substances Control Act

Environmental Protection Agency

FY 2001 Annual Performance Plan and Congressional Justification

Clean and Safe Water

Objective # 2: Conserve and Enhance Nation's Waters

By 2005, conserve and enhance the ecological health of the nation's (state, interstate, and tribal) waters and aquatic ecosystems -- rivers and streams, lakes, wetlands, estuaries, coastal areas, oceans, and ground waters-- so that 75 % of waters will support healthy aquatic communities.

Resource Summary (Dollars in thousands)

	FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request	FY 2001 Req. v. FY 2000 Ena.
Conserve and Enhance Nation's Waters	\$355,049.8	\$381,485.2	\$438,783.0	\$57,297.8
Environmental Program & Management	\$181,667.6	\$179,189.5	\$163,681.3	(\$15,508.2)
Science & Technology	\$19,852.9	\$30,601.9	\$30,572.4	(\$29.5)
State and Tribal Assistance Grants	\$153,529.3	\$171,693.8	\$244,529.3	\$72,835.5
Total Workyears	901.8	965.4	948.9	(16.5)

Key Programs (Dollars in thousands)

	FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request
Water Quality Criteria and Standards (CWAP)	\$19,110.9	\$18,545.1	\$22,765.0
Wetlands (CWAP)	\$15,694.9	\$15,730.0	\$17,315.2
National Estuaries Program/Coastal Watersheds (CWAP)	\$16,528.3	\$18,029.2	\$16,135.0
South Florida/Everglades (CWAP)	\$2,869.3	\$2,923.0	\$2,938.4
Chesapeake Bay (CWAP)	\$20,361.5	\$20,308.9	\$19,517.4

Great Lakes (CWAP)	\$5,395.3	\$3,263.7	\$4,111.1
Gulf of Mexico (CWAP)	\$3,798.9	\$4,196.0	\$4,019.5
Long Island Sound (CWAP)	\$900.0	\$975.0	\$500.0
Pfiesteria (CWAP)	\$2,500.0	\$100.0	\$250.0
Pacific Northwest (CWAP)	\$1,022.5	\$1,043.2	\$1,064.8
Lake Champlain (CWAP)	\$2,000.0	\$2,187.3	\$1,000.0
State Pollution Control Grants (Section 106) (CWAP)	\$115,529.3	\$115,529.3	\$160,529.3
State Water Quality Cooperative Agreements (CWAP)	\$19,000.0	\$19,000.0	\$19,000.0
State Wetlands Program Grants (CWAP)	\$15,000.0	\$15,000.0	\$15,000.0
CWAP - Related Research	\$0.0	\$2,646.9	\$2,611.2
EMPACT	\$653.9	\$125.0	\$0.0
Marine Pollution (CWAP)	\$0.0	\$7,580.0	\$8,059.8
Water Quality Monitoring and Assessment (CWAP)	\$0.0	\$9,762.6	\$11,778.7
Rent, Utilities and Security	\$0.0	\$16,579.0	\$18,456.7
Administrative Services	\$511.4	\$2,510.7	\$2,644.4
Regional Management	\$0.0	\$315.8	\$482.1

FY 2001 Request

The Administration's Clean Water Action Plan (CWAP) provides a comprehensive strategy for assessing and restoring the Nation's most impaired watersheds to achieve healthy aquatic communities and attain clean water and public health goals. Fundamental to the Agency's efforts to meet this objective is the management of water quality resources on a watershed basis, with the full involvement of all stakeholders including communities, individuals, businesses, state and local governments, and tribes. EPA's ability to meet this objective depends on the success of regulatory and non-regulatory programs and nationwide efforts to implement a broad range of policy, planning, and scientific tools to establish local goals and assess progress. To that end, the Agency will continue to work with states and tribes to implement Total Maximum Daily Load (TMDL) programs to establish the analytic underpinning for watershed decisions. In addition to providing \$45 million in additional grants to states to develop TMDLs, EPA will provide up-to-date scientific tools (such as

easy-to-use, geographically-based models), training, and technical assistance to support state and tribal TMDL programs. These TMDLs will meet the requirements of Clean Water Act Section 303(d). This Section also requires that approvable lists of impaired waters be submitted in a timely manner and EPA will work to ensure that TMDLs are developed at an appropriate pace.



* This map is a representation of threatened and impaired streams, rivers, coastlines, estuaries and lakes. The shading show the miles impaired/threatened within an 8-digit Hydrologic Unit Code (HUC), divided by the total number of water miles within the HUC.

The Agency will continue to support comprehensive water quality assessments that establish baselines against which to gauge progress toward objectives and goals and support decision-making necessary to implement watershed restoration activities on a priority basis. The Agency will continue to work with its state and tribal partners to establish and maintain water quality standards and monitoring and assessment programs appropriate to their identified goals and needs, including addressing the elements outlined in EPA's monitoring guidance and Clean Water Act Section 303(d) requirements. EPA will assemble and report state water quality assessments under Clean Water Act (CWA) Section 305(b). EPA ensures that states and tribes are entering relevant water quality and related data into EPA's modernized national data Storage and Retrieval System (STORET). An important use of state comprehensive water quality assessment programs and other data is the Index of Watershed Indicators (IWI), a collaborative exercise with EPA stakeholders to clearly characterize the condition and vulnerability of all of the Nation's watersheds and coastal waters. IWI data will be updated on a continuous basis and additional data layers developed to refine the system. In addition,

the Agency will continue its mapping (Geographic Information System) efforts to make information more accessible to the public. This work will continue to be integrated into IWI.

As part of the Clean Water Action Plan, EPA, in concert with the U.S. Department of Agriculture (USDA), Department of Interior (DOI) and other Federal agencies, will work with the states, tribes and territories to implement watershed restoration projects. The Agency will continue the development of a tracking system to document the success of programs to reduce nutrient runoff to America's waters. Working through the National Water Quality Monitoring Council, EPA is cooperating on a comprehensive assessment of the effectiveness of nutrient reduction programs which is scheduled to be completed in 2001.

Critical to improving water quality is our refinement of water quality standards and sediment quality standards. The Agency will continue to support states and tribes in incorporating risk characterization analyses, priority setting, risk management decisions, and state/tribal adoption and implementation of water quality standards based on revised criteria. The Agency will continue to enhance Better Assessment Science Integrating Point and Nonpoint Sources (BASINS), a powerful geographic information system which links projected nonpoint source runoff with point source discharges, to include more geographic and hydrological detail so that TMDL and National Pollutant Discharge Elimination System (NPDES) permit writers can better address site-specific conditions.

EPA will work with its state partners to ensure that they adopt into their standards a suite of criteria to protect designated uses. In 2001, the Agency will continue to develop and publish scientifically defensible criteria for a broad range of stressors and assist states and tribes in adopting these criteria to protect public health, attain and maintain aquatic life and other designated uses, and improve the chemical, physical, and biological integrity of the Nation's waters. EPA will develop guidance materials for biological criteria and expand the number of Regional Office centers of expertise. The Agency will also develop and enhance PC-based modeling software to support site-specific metals criteria. By providing training and workshops, EPA will expand its work with tribes to implement "Treatment in a Similar Manner as a State" provisions and establish final water quality standards approved by EPA for waters under tribal jurisdiction. In July 1997, the U.S. District Court issued a ruling whereby state water quality standards do not go into effect under the CWA until approved by EPA. The Agency is devoting significant effort to reduce the backlog of approval actions taken on states' proposed water quality standards. In 2001, EPA will assure that actions are taken within the statutory deadlines. In support of this effort, the Agency will continue to refine a comprehensive database on state water quality standards that will help ensure nationwide consistency in state programs and timely action on states' proposed water quality standards.

In watersheds where sediment contamination is determined to be widespread, especially in the Great Lakes region, the Agency will assist states and tribes in addressing sediment contamination by making available the sediment quality criteria modeling package for desktop applications. EPA will also make its work on toxicity testing available. States need toxicity testing to evaluate sediment quality, make decisions about appropriate control measures, and implement new methodologies that address a wider range of pollutants. The Agency, in cooperation with the Departments of Interior and

Agriculture, will conduct place-based contaminated sediment recovery demonstration projects. The Agency will develop guidance on how to interpret bioaccumulation data in 2001.

The Agency will continue to implement its Nutrient Strategy, employ states and tribes in filling data gaps, and address implementation issues related to controlling eutrophication, including such harmful algal blooms as *pfiesteria*. Since the process for assessing and controlling eutrophication is considered site-specific in nature, the best assistance will allow state and tribes to choose the tools that best fit their conditions (waterbody-specific guidance). The Agency will address the last group of ecosystems by establishing numeric criteria for nutrients (i.e., nitrogen and phosphorus) that are tailored to reflect those waterbody types and geographical regions. EPA will distribute and provide guidance and technical assistance for specific waterbody types (e.g., lakes, rivers, and estuaries).

The Agency will participate in a multi-media effort to identify contaminants that may disrupt endocrine functions in fish, wildlife, and humans. The endocrine system plays an essential role in human differentiation and growth - developing fetuses, and children may be the most sensitive populations at risk for endocrine disruption. The Food Quality Protection Act (FQPA) and the Safe Drinking Water Act (SDWA) authorize screening and testing of pesticides, commodity chemicals, and drinking water source contaminants for endocrine disrupting potential. The Office of Water supports the work of the Endocrine Disruptor Screening and Testing Advisory Committee's (EDSTAC) to advise the Agency on a screening and testing strategy.

In support of the Agency's Tribal Partnership initiative, the Agency will continue to support the development, modification, and delivery of EPA training materials and workshops for tribes on nonpoint source, watershed management, water quality monitoring, quality assurance and water quality standards and criteria. The Agency will support the distribution of a National Tribal Watershed Assessment Framework to support defensible, reproducible Tribal assessments of the conditions of their watersheds and the sources of watershed impairments.

As part of the Clean Water Action Plan, EPA will continue to direct technical and program assistance to states to help them integrate their new Unified Watershed Assessments and Watershed Restoration Action Strategies with their ongoing development and implementation of the TMDL program. Unified Watershed Assessments are state-led efforts that integrate a variety of assessment tools to identify those watersheds where aquatic systems do not meet clean water and other natural resource goals. Restoration Action Strategies will provide comprehensive plans for actions necessary to restore the health of the most impaired watersheds. With EPA assistance, states will continue to accelerate the pace of development and implementation of TMDLs for impaired waters in high priority watersheds. EPA will continue to support the Watershed Academy and its course offerings and technical transfer efforts to better train state, tribal and local agencies in addressing these watersheds.

The Agency will continue to build on successes and improvements achieved through watershed and ecological restoration projects undertaken in 2000. Based on these experiences, additional tools and technical information will be provided to states, tribes, local governments, and local watershed organizations in 2001 to address their priority water pollution and resource

degradation problems. These techniques will assist in determining actions needed to solve problems and assist in setting milestones for evaluating progress toward environmental improvement. This approach will contribute toward integrating EPA's various programs and activities into the watershed management approach. These programs include: TMDLs, water quality standards and criteria, nonpoint source controls, permitting, enforcement, wetlands, coastal and marine, source water protection, and management of contaminated sediments. The Agency will continue to work closely with other Federal agencies and partners to integrate relevant programs to ensure a comprehensive approach to the protection and restoration of rivers, lakes, and coastal waters.

EPA will reduce its targeted efforts through the National Estuary Program, as all 28 Comprehensive Conservation and Management Plans (CCMPs) will be approved by 2001. EPA will continue to work with states and others to implement CCMPs and watershed management plans for coastal ecosystems in order to restore and maintain the health of degraded and threatened coastal aquatic communities and recreational waters. EPA will continue to emphasize and support coastal partnerships to assist local decision makers in developing and implementing protection programs for coastal watersheds, and will also continue to support, at a slightly reduced level, the application of biological criteria, development of research plans and monitoring programs, implementation of such plans pertaining to harmful algal blooms and other coastal and marine problems, coral reef protection, invasive species efforts, and management and remediation of contaminated sediments.

For coastal ports, EPA will work with federal and state partners and other stakeholders to establish local planning groups to help ensure that comprehensive dredged material management plans, including provisions for the beneficial re-use of dredged material, are developed to maintain, restore, and improve the health of coastal ecosystems. While the Agency will continue to manage pollution sources subject to the Marine Protection, Research, and Sanctuaries Act; Clean Water Act; Marine Plastic Pollution Research and Control Act, and other related programs in such a way as to further protect and enhance our Nation's coastal and ocean waters, the level of support provided to the permitting and monitoring activities involved will decrease, resulting in a slower pace for completion of these activities and potentially less monitoring, site designation, or other activities undertaken. Progress in these areas will depend on sound science derived from improved research and monitoring efforts in coastal and marine waters.

As part of the Clean Water Action Plan, EPA will continue providing small grants to non-profit organizations to support development of watershed partnerships and to advance watershed restoration efforts. Priority in allocation of grant assistance will be given to organizations that have the capacity to bring diverse interests together to find creative ways to restore and sustain the health of aquatic systems on a watershed basis. EPA, in concert with the USDA and the National Oceanographic and Atmospheric Administration (NOAA), will also work with other Federal agencies and states to dramatically increase the number of people involved in local organizations that have "adopted" their watersheds and to encourage new efforts where none currently exist. A major focus will be to engage students, seniors, business owners and employees and others not traditionally involved in water resource issues to participate in ongoing community watershed efforts.

Section 106 grants to states, tribes, and interstate agencies are a primary funding source for the prevention, reduction, and elimination of surface and ground water pollution from point and nonpoint sources and for enhancing the ecological health of the Nation's waters. Within this objective, \$160,529,300 is requested for this grant program. Activities within the section 106 program include permitting, water quality planning and standard setting, pollution control studies, assessment and monitoring, and training and public information. State efforts funded by section 106 grants will include developing TMDLs, implementing integrated wet weather strategies in coordination with nonpoint source programs, and developing source water protection programs. Tribes will continue to conduct watershed assessments and will maintain and improve their capacity to implement water quality programs through monitoring, assessments, planning, and standards development.

States are facing rapidly increasing workloads to expeditiously develop, in many cases consistent with Court-ordered deadlines, critically-needed total daily maximum loads TMDLs for their impaired water bodies. To assist states in addressing their TMDL needs, a targeted increase in Section 106 grants of \$45 million is requested with a cost-share requirement that the state provide 40 percent of the costs to develop TMDL allocations and implementation plans. These funds, coupled with the state flexibility to use up to 20% of their increased Section 319 grants, and other available funding sources are intended to provide sufficient resources to allow States to meet their TMDL obligations in 2001 based on EPA's estimated costs for the new TMDL regulation proposed in August 1999.

Water Quality Cooperative Agreements (WQCA) will support the creation of unique and innovative approaches to address requirements of the NPDES program, with special emphasis on wet weather activities, i.e., storm water, combined sewer overflows, sanitary sewer overflows and animal feeding operations. In the wet weather area, these grants have been invaluable in enabling demonstrations of unique technical, as well as managerial and funding techniques for addressing wet weather problems. Specifically these funds will be used to conduct special studies, demonstrations, outreach and training efforts which will enhance the ability of the regulated community to deal with non-traditional pollution problems in priority watersheds. Within this objective, \$19,000,000 is requested for this program.

Geographic Initiatives

EPA is requesting a significant new investment to restore water quality in the Great Lakes. Under this \$50 million initiative, EPA would provide matching grants to state and local governments to clean up contaminated sediments, control stormwater, restore wetlands, acquire greenways and buffers, and control polluted runoff. These grants would be competitively awarded by EPA and would require states and/or local governments to provide at least 40 percent of total project costs from non-Federal sources. States or municipalities would use the funds to address existing "areas of concern" (AOCs) that were defined in 1987 by the International Joint Commission -- a joint partnership between the United States and Canada. These funds would support restorative and protective actions in the 31 AOCs that fall wholly or partly in U.S. waters, and represent a dramatic

increase in support for Great Lakes states' and communities' efforts to preserve and enhance their waterways. These targeted Great Lakes resources would supplement existing funds to develop plans and projects to identify and remediate pollution problems in the region (including development and implementation of Lakewide Management Plans), and would be managed in conjunction with the efforts of the Great Lakes National Program Office as described in Goal 6, Objective 1.

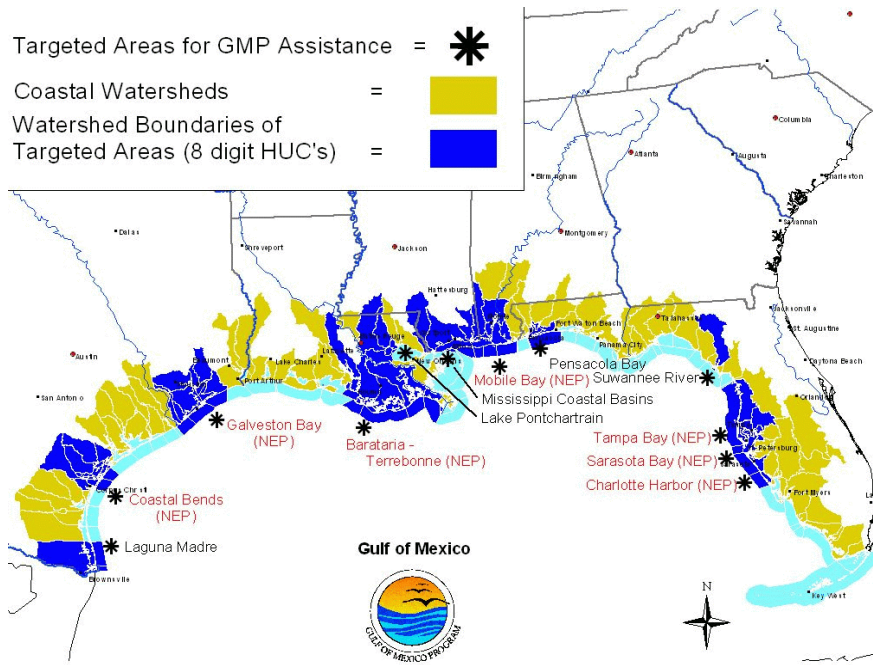
EPA will continue to support targeted geographic watershed initiatives of national importance, including the National Estuary Program, the Chesapeake Bay Program, Gulf of Mexico Program, South Florida/Everglades, and the Pacific Northwest Forest Plan. Special emphasis in these varied regions provides the opportunity not only to have necessary heightened Federal involvement in critical watersheds, but to develop and implement water quality control practices and other management tools whose successes can be transferred to other watersheds nationwide. EPA is also committed to supporting the implementation of the Interior Columbia Basin Ecosystem Management Project, the Long Island Sound Office, and the Lake Champlain Management Conference.

The Gulf of Mexico

The Gulf of Mexico Program's goals are to protect human health and the food supply; to protect, restore and enhance Gulf coastal and marine waters and its habitats that support living resources; and to ensure the long-term use of the Gulf shores, beaches and waters. To accomplish these goals, the Gulf of Mexico Program has adopted a strategic assessment framework. The process includes identifying: (1) the priority issues and annual performance goals to be addressed (i.e., public health, nutrient enrichment, habitat protection and restoration, and control of invasive species); (2) the priority watersheds and corresponding waterbodies/ segments/communities for focus; and (3) the specific project needs in coordination with the Gulf States' Watershed Restoration Action Strategies. Twelve coastal areas which include 30 of the 95 coastal watersheds are identified for focus in 2001. Within these priority areas, the Gulf of Mexico Program will provide technical and financial assistance to the Gulf States to implement voluntary, incentive-based measures to remedy their priority coastal environmental issues within 14 impaired Gulf coastal river and estuary segments, and will maintain that target each year to address 20 percent or 71 impaired segments to reinforce Gulf State efforts to implement 5-year basin rotation schedules.

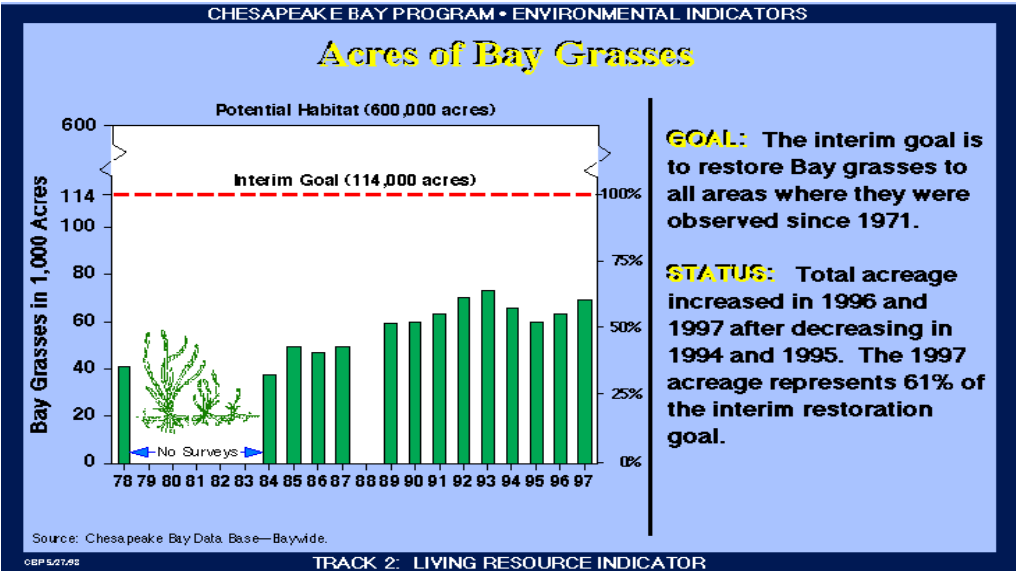
The Chesapeake Bay

The Chesapeake Bay Program is a partnership between Maryland, Virginia, Pennsylvania, the District of Columbia, the Chesapeake Bay Commission (a tri-state legislative body), and the EPA, which represents the Federal government. The Bay Program was formed in 1983, and operates in a consensus fashion. The Bay Program has nine subcommittees which focus on specific issue areas



(e.g., toxics, nutrients, communications, etc), and all of the state jurisdictions and EPA are represented on all of these subcommittees, which generally meet every six weeks.

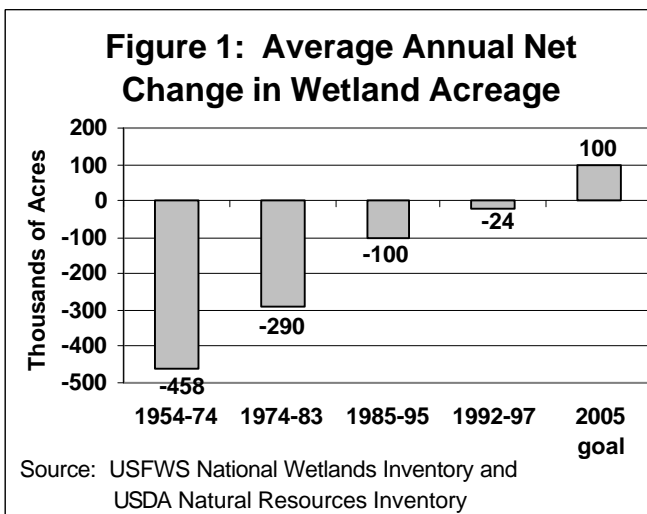
The Chesapeake Bay Program also has a Federal Agencies Committee, which was formed in 1984 and has met regularly ever since. There are currently over 20 different Federal agencies actively involved with the Bay Program through the Federal Agencies Committee. The Federal agencies have operated over the past few years to implement the 1994 Agreement of Federal Agencies on Ecosystem



Management in the Chesapeake Bay, which set specific goals and commitments for Federally-owned lands and activities. In November 1998, EPA and over 20 other Federal agencies signed a new Federal Agencies Chesapeake Ecosystem Unified Plan. The Unified Plan contains 50 new commitments which implement the President’s Clean Water Action Plan in the Chesapeake Region. Two of those new commitments related to the American Heritage Rivers Program have already been met.

Wetlands

EPA with other federal agencies supported the establishment of a goal of an annual net gain of wetlands of 100,000 acres by 2005. This will reverse historic trends of wetland losses (see Figure 1). EPA will contribute to this wetlands quantity goal through a number of programs, and will also take steps to advance the national goal of an increase in the *quality* of wetlands.



Working with other federal agencies, EPA and the Corps of Engineers will implement Section 404 of the Clean Water Act to protect wetlands, free-flowing streams, and shallow waters in a fair, flexible,

and effective manner. Program improvements will be implemented to ensure program activities are effectively and consistently applied to the extent authorized by the Clean Water Act. EPA and the Corps will advance the regulatory program goal of no overall net loss of wetlands by improving the environmental success rate of mitigation projects to offset unavoidable losses of wetlands.

EPA will encourage communities to restore wetlands and river corridors through projects that involve citizen groups, corporations, youth, landowners and local governments. The Five Star Restoration Program funds these projects to restore environmental resources that have been lost or degraded and provide community education on wetlands and river corridors.

Building upon successful projects in a number of States, (see Figure 2) , EPA will help States and Tribes develop programs to monitor the extent and condition of their wetlands. Biological indicators will be used to evaluate the relative health of wetlands to determine the extent and causes of disturbance. EPA will provide assistance in low-cost monitoring techniques, including volunteer monitoring and satellite imagery. The information collected will guide management decisions to evaluate restoration success and to improve the quality of wetlands, addressing stressors including polluted run-off, changes in hydrology, invasive species, and habitat fragmentation.

A total of \$15 million from the State and Tribal Assistance Grants appropriation is requested to enable States and Tribes to develop and strengthen their programs to conserve, manage and restore

wetlands, and to support watershed-based wetland initiatives. This will support regulatory approaches such as permitting and water quality standards, as well as incentive-based programs, training, and monitoring.

Research

The loss of ecosystems goes hand in hand with the loss of valuable renewable resources and services such as wood for construction, water storage and flood control, biodegradation and removal of contaminants from air and water, and pest and disease control. Thus it is critical that we understand the health of our ecosystems and identify the stressors that are contributing to forest decline, widespread epidemics of toxic microorganisms in estuaries, reproductive failure of wildlife, and the destruction of critical habitat. Many of the problems of concern at the regional scale are either a result of regionally distributed stressors such as acidic deposition or a cumulative result of many small local problems such as local habitat alteration or nutrient enrichment.

Under the Clean Water Act, states are required to develop designated uses for their waters. This research will provide an improved scientific basis for determining designated uses, necessary for improving existing water quality across the country. Research in this objective will increase understanding of landscape characteristics and ecosystem structure and function, as well as reduce uncertainty surrounding the effects of chemical, biological and physical stressors on aquatic ecosystems and the integration of information for managing aquatic ecosystems. Research will focus on identifying and assessing critical stressors in aquatic ecosystems and understanding the relationships between stressors such as habitat alteration, nutrient loadings, or chemical pollutants and their impact on aquatic ecosystems. This information will be useful in managing these ecosystems and prioritizing restoration decisions.

By 2001, EPA will develop the framework for diagnosing adverse impacts of chemical pollutants in surface waters. This framework will develop methods for diagnosing chemical stressors such as pesticides, nutrients, and industrial chemicals, and guide future research efforts to determine their significance in the context of other stressors to aquatic ecosystems. This research will be particularly useful in evaluating the risks posed by chemicals that persist in the environment and accumulate in the food chain, threatening wildlife and potentially human health. This research will facilitate the assessment of ecological health of the nation's waters, providing water resource managers with a tool for determining whether their aquatic resources support healthy aquatic communities.

Key elements of this research will focus on the development of diagnostic methods, models for determining total maximum daily loads (TMDLs), risks posed by chemical pollutants to wildlife, contaminated sediments, and eutrophication and nutrient loadings.

The research on diagnostic methods in this objective will provide an integrated approach to developing stressor-response profiles for chemical, biological and physical stressors and development

of watershed diagnostics to identify critical stressors in an aquatic ecosystem. This work will be useful in deriving protective criteria, strengthening the biological basis for designated uses in state and Tribal water quality standards, improving the scientific foundation for point and non-point source TMDLs, and determining appropriate and effective watershed management alternatives.

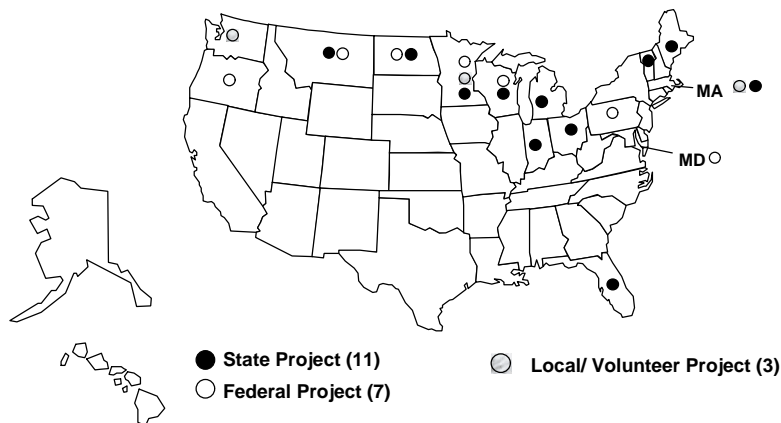
Modeling and landscape characterization research will improve the development of TMDLs and permits for point and non-point source discharges. Efficient methods for developing TMDLs are greatly needed because of the increasing number of lawsuits that require timely TMDL development. Modeling research will develop advanced predictive mathematical models to more accurately characterize stressor sources, such as temperature, oxygen-demanding wastes, pathogens, sediments, nutrients, metals, pesticides and other hazardous chemicals, particularly those associated with sediment loads and aerial transport and deposition. Landscape characterization research investigates methods for characterizing aquatic stressors at multiple scales. Impairments (e.g., sediment loading) identified in one watershed can be inferred to potentially exist in another watershed with similar landscape characteristics (e.g., agriculture on steep slopes). This approach provides a more efficient method for setting TMDLs, compared to using conventional monitoring and modeling.

Research in this objective will also address bioaccumulation and biomagnification of chemical contaminants. Chemicals that bioaccumulate are frequently deposited in sediments, where they can adversely affect sediment biota and the organisms dependent upon the benthic communities. They can also move into the food chain where they may impact both human health and wildlife. Sediment contamination can result from point and non-point sources of pollution such as industrial discharges and stormwater runoff, respectively, and increased loadings of nutrients (e.g., nitrogen, phosphorus). Research will be conducted to evaluate exposure to contaminated sediments at the population, community, and ecosystem scale. Research will also include the development of methods and approaches for assessing sediment and wildlife toxicity. EPA will also develop and evaluate more cost-effective technologies and approaches for managing contaminated sediments, emphasizing the identification of innovative *in situ* solutions.

In addition to these areas, research will be conducted to understand the dynamics of ecosystem response to eutrophication (the rapid growth of plant life in a water body resulting from high nutrient levels) that frequently includes hypoxia (a low oxygen condition) and increases in harmful algal blooms. An area of approximately 7,000 square miles in the Gulf of Mexico is hypoxic, and the incidence of algal blooms is increasing in coastal waters world-wide. These stresses may be related to increased nutrient loadings and eutrophication. They threaten ecosystem integrity, sustained use, and productivity. EPA will develop stressor response models to understand and predict the relationship between stressors such as nutrients, eutrophication and hypoxia on aquatic ecosystems including wetlands, riparian zones, sediments, and freshwater and marine ecosystems.

This research program is also supported through the Agency's Postdoctoral Initiative. The FY 2001 request is the third year of the effort to enhance our intramural research program by supporting 5 additional postdoctoral positions under this objective. This enhancement continues to build upon the positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999.

Figure 2: Biological Monitoring Projects



FY 2001 Change from FY 2000 Enacted

EPM

- (+\$1,156,400) The Agency will begin the contaminated sediment demonstration projects outlined in the Clean Water Action Plan and publish the national sediment inventory database on the Internet, making the information available to the public. We will also provide technical assistance and support to the Great Lakes states in implementing their remedial action plans and to states and tribes in developing TMDLs that address contaminated sediments.
- (+\$1,867,100) EPA will support the development and implementation of state water quality standards and criteria programs, especially where we can enhance state development and implementation of TMDLs.
- (+\$660,000) The Agency will increase grant awards to states for data collection and field validation studies supporting state adoption of nutrient criteria.
- (+\$2,059,300) For national monitoring efforts, including support for integrated data assessment tools to consolidate and coordinate various water quality data and activities, and

support for citizen, state, and tribal access to historical and current environmental information (via modernized STORET).

- (+\$2,885,600) Reflecting investment in watershed activities, including technical support to states for development of watershed restoration action strategies. Increases will also support continued development of Remedial Action Plans for Areas of Concern in the Great Lakes Basin.
- (+\$150,000) For *pfiesteria* activities, reflecting states' need to establish rapid response programs for *pfiesteria* outbreaks, including development of monitoring protocols and public outreach mechanisms.
- (-\$1,250,000) From coastal watershed protection and the National Estuary Program, reducing support for development of management plans for coastal ecosystems because by 2001, all 28 NEPs will have approved comprehensive conservation and management plans (CCMPs).
- (+\$472,300) To support protection of ocean waters through programs to permit, monitor, and designate/manage sites for the disposal of materials into ocean waters and to evaluate discharges of wastewater into ocean waters.
- (+\$600,000) For the Five Star Grant program to restore wetlands and river corridors. It will allow for 50 restoration projects involving hundreds of other partners, and, projected upon experience, a total match of over \$2.5 million.
- (+\$345,000) Provides for increases that will enable EPA to develop wetlands monitoring protocols, work with the Corps and other partners to improve the success rate of wetlands restoration, and identify geographic areas of special emphasis for targeting EPA's wetlands resources.
- (+\$500,000) For the Watershed Assistance Grants program, supporting community-based watershed protection efforts through small, leveraged grants.
- (-7.6 total workyears) Reflects a workyear decrease in accordance with fiscal year 2000 Appropriations language.
- (+\$1,315,300) Reflects payroll cost of living increases and enrichment and increased working capital fund requirements.
- The 2001 Request is \$26,232,800 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.

STAG

- (+\$45,000,000) To assist states in addressing their TMDL development needs via a targeted increase in CWA Section 106 grants. This increase, coupled with the required state contributions for this 106 increase, state flexibility to use up to 20% of their also increased Section 319 grant, and other financial assistance would provide sufficient resources to allow States to substantially meet their TMDL obligations in 2001 based on the estimated cost of the new TMDL regulation proposed in August 1999.
- (+\$50,000,000) For competitively awarded grants to state and local governments to implement Remedial Action Plans (RAPs) in identified Great Lakes areas of concern (AOCs), including implementation of stormwater pollution control, wetlands restoration, greenway land acquisition, and contaminated sediment remediation.
- The 2001 Request is \$22,164,500 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.

S&T

- (+\$1,200,000) Resources supporting Requests for Applications (RFA's) for Science to Achieve Results (STAR) grants addressing the ecology and oceanography of Harmful Algal Blooms are realigned from Goal 8, Objective 1, Ecosystems Research to Goal 2, Objective 2 in order to reflect a more direct relationship to programmatic needs.
- (-\$509,400) The 2001 request is \$509,400 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process that are not part of the 2001 President's Request.
- (-\$1,055,300) The R&D program, including infrastructure support costs, is spread across eight of the ten goals in the Agency's GPRA/budget structure. Based on a review of actual infrastructure utilization under each goal (i.e., utilization of workyears and associated PC&B, travel, operating expenses, and working capital fund), adjustments are being made to more accurately reflect expectations for use in FY 2001.

Annual Performance Goals and Performance Measures

Clean Water Action Plan Implementation

- In 2001 Water quality will improve on a watershed basis such that 550 of the Nation's 2,150 watersheds will have greater than 80 percent of assessed waters meeting all water quality standards, up from 500 watersheds in 1998.
- In 2001 Restore and protect watersheds through implementation of Clean Water Action Plan (CWAP) strategies.
- In 2000 Restore and protect watersheds through implementation of CWAP strategies.
- In 2000 Environmental improvement projects will be underway in 350 high priority watersheds as a result of implementing activities under the CWAP.
- In 1999 As part of the Clean Water Action Plan, 56 states and territories and 84 tribes are conducting or have completed unified watershed assessments, with support from EPA, which identified aquatic resources in greatest need of restoration or prevention activities.
- In 1999 23 States submitted implementation plans to EPA (either as separate plans or as part of water quality management plans or other watershed planning process) that describe the processes for implementing TMDLs developed for waters impaired solely or primarily by nonpoint sources.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Watersheds that have greater than 80% of assessed waters meeting all water quality standards.			550	8-digit HUCs
TMDLs established by EPA (cumulative).		157	251	TMDLs
TMDLs scheduled to be completed by the end of 2001 (cumulative).		2,075	3,319	TMDLs
TMDLs submitted by the state (cumulative).		1,369	2,189	TMDLs
State-established TMDLs approved (cumulative).		1,369	2,189	TMDLs
Impaired, assessed river miles, lake acres, & estuary square miles that a) are covered under WRAS and b) were restored to their designated uses during the reporting period.		no target	no target	
Assessed river miles, lake acres, and estuary square miles that have water quality supporting designated beneficial uses, where applicable, for aquatic life support.		no target	no target	
States submitting implementation plans for TMDLs for waters impaired solely or primarily by NPS	23			States

States that are conducting or have completed unified watershed assessments	56	States
Submission, with Nat'l Watershed Forum, of a Watershed Rest. Progress Report to the President, etc. eval. progress & recommend. any actions needed to improve progress toward meeting clean water goals.	1	Report
High priority watersheds in which environmental improvement projects are underway as a result of implementing activities under the CWAP.	350	Watersheds
<p>Baseline: The state submitted 1998 303(d) lists identify the TMDLs that need to be established. Thus, the baseline against these 1998 lists is zero. The baseline for waters covered under Watershed Restoration Action Strategies (WRAS) will not be available until the FY2000 reporting cycle. As of the 1996 Report to Congress on the National Water Quality Inventory, 68% of assessed river and stream miles; 69% of assessed lake, reservoir, and pond acres; and 69% of assessed estuary square miles have water quality supporting designated beneficial uses for aquatic life support. As of 1998 state reports, 500 watershed had met the criteria for water quality improving on a watershed basis. For a watershed to be counted toward this goal, at least 25% of the segments in the watershed must be assessed within the past 4 years consistent with assessment guidelines developed pursuant to section 305(b) of the Clean Water Act.</p>		

Dredged Material/Ocean Disposal

- In 2001 Encourage comprehensive planning for the management of dredged material, and assure environmentally sound disposal of dredged material.
- In 2000 Appropriate action taken with regard to dredged material ocean disposal site designation in one additional case.
- In 1999 Appropriate action taken with regard to dredged material ocean disposal site designation in one additional case. (Base of 77)

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Facilitate establishment of Local Planning Groups to develop comprehensive plans for dredged material management.			3	Local Plan Grps
Participate in the development of local comprehensive plans for dredged material management (cumulative).			3	Plans
Appropriate actions taken re: dredged material ocean disposal	1			Action
Additional appropriate actions taken (e.g., site designation, designations, or Site Management and Monitoring Plan development).		1		Actions

Baseline: As of January 2000, there are 4 existing Local Planning Groups and 4 existing local comprehensive plans for dredged material management.

State/Tribal Water Quality Standards

- In 2001 Assure that States and Tribes have effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards program priorities.
- In 2001 16% of Tribes will have water quality monitoring and assessment programs appropriate for their circumstances and will be entering water quality data into EPA's national data systems.
- In 2000 Assure that States and Tribes have effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards program priorities.
- In 1999 Provided to States and Tribes tools for risk characterization of and decision making regarding surface water contaminants, including PBTs and nutrients, that allow them to set and meet their own water quality standards.
- In 1999 One additional Tribe established an effective water quality standards program for a cumulative total of 15 Tribes with effective water quality standards programs. In addition, 7 more tribal submissions are currently under review.
- In 1999 EPA reviewed and approved 17 revised water quality standards for 17 states that reflect current guidance, regulation, and public input and promulgated replacement Federal standards for 1 additional state.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
States with new or revised water quality standards that EPA has reviewed and approved or disapproved and promulgated federal replacement standards.	18	15	30	States
Tribes with monitoring and assessment programs (cumulative).			16	% Tribes
Pilot STORET/305(b) reporting projects with Tribes.			9	Pilot projects
Models, methods, criteria developed/available for risk characterization of surface water contaminants.	1			List
Tribes with water quality standards adopted and approved (cumulative).	15	22	27	Tribes

Baseline: As of 1999, less than 5% of tribes have water quality monitoring and assessment programs appropriate for their circumstances and are entering water quality data into EPA's national data systems. State water quality standards program reviews are under a 3-year cycle as mandated by the Clean Water Act under which all states maintain updated water quality programs; therefore, the Agency will review approximately one-third of all state/tribal programs each year. EPA must review and approve or disapprove state revisions to water quality standards within 60-90 days after receiving the state's package.

In FY99, there was a backlog of 70 submissions from 32 states for which EPA had not taken the appropriate action. At the end of FY 1999, 15 tribes had adopted and approved water quality standards.

Protecting and Enhancing Estuaries

- In 2001 Restore and protect estuaries through the implementation of Comprehensive Conservation and Management Plans (CCMPs).
- In 2000 All Tier I-V National Estuary Programs have completed Comprehensive Conservation and Management Plans (CCMPs) - blueprints for protecting and enhancing the estuaries.
- In 1999 Completed Comprehensive Conservation and Management Plans (CCMPs) for 4 of the National Estuary Programs for a cumulative total of 21 out of 28.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Priority actions or commitments initiated nationwide as part of the National Estuary Program since approval of the first CCMP in 1991 (cumulative).			82%	Actions
Acres of habitat preserved, restored and/or created nationwide as part of the National Estuary Program (cumulative).			50,000	Acres
Completed CCMPs	21	28		CCMPs
Baseline:	As of January 2000, estimated that 65% of priority actions initiated and 400,000 habitat acres preserved, restored, and/or created.			

Gulf of Mexico

- In 2001 Assist the Gulf States in implementing watershed restoration action strategies (WRAS) or their equivalent in 14 priority coastal river and estuary segments.
- In 2000 Assist the Gulf states in implementing watershed restoration action strategies (WRAS) or their equivalent in 14 priority impaired coastal river and estuary segments.
- In 1999 Reduced the number of nonpoint sources contributing to the total load of fecal contamination and nutrients in Gulf waters, in three priority Gulf coastal watersheds.
- In 1999 Initiated the development of marine conservation plans for Gulf Coast seagrasses in 3 Gulf States.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Impaired Gulf coastal river and estuary segments implementing WRAS or equivalent.		14	14	Segments
TMDLs (1) scheduled to be completed; (2) submitted by Gulf States for segments in the coastal watershed; and (3) established by EPA and Gulf State				

established TMDLs approved.		no target	no target	TMDLs
Assessed river miles, lake acres, and estuary square miles that a) are covered under WRAS and b) were restored to their designated uses during the reporting period.		no target	no target	Miles, etc.
Gulf states with marine conservation plans for seagrasses.	3			States
Gulf watersheds with State actions to reduce NPS loads to Gulf growing waters.	3			Watersheds
<p>Baseline: There are currently 95 coastal watersheds at the 8-digit hydrologic unit code (HUC) scale on the Gulf coast. The Gulf of Mexico Program has identified 12 priority coastal areas for assistance. These 12 areas include 30 of the 95 coastal watersheds. Within the 30 priority watersheds, the Gulf States have identified 354 segments that are impaired and not meeting full designated uses under the States' water quality standards. 71 or 20% is the target proposed to reinforce Gulf State efforts to implement 5-year basin rotation schedules. The target of 71 is divided by 5 to achieve the goal for assistance provided in at least 14 impaired segments each year for the next 5 years.</p>				

Great Lakes Implementation Actions

In 2001 Funds will be awarded for 20-25 projects to assist with restoring water quality in the Great Lakes Areas of Concern. These projects may include cleaning up contaminated sediments, controlling polluted runoff and stormwater, restoring wetlands, and acquiring greenways and buffers.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Projects funded to improve water quality in Great Lakes Areas of Concern.			20-25	Projects

Baseline: These projects will be the first under a new initiative to restore water quality in the Great Lakes.

Chesapeake Bay Habitat

In 2001 Improve habitat in the Chesapeake Bay.

In 2000 Improve habitat in the Chesapeake Bay.

In 1999 Submerged aquatic vegetation acres increased to 63,500; 11,000 acres designated for aquatic reef habitat; 32% of wastewater flow treated by Biological Nutrient Removal; 79% of lands have voluntary integrated pest management practices; and 534 stream miles of migratory fish habitat have reopened.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Pounds reduction, from 1985 levels, of nitrogen and phosphorus loads entering Chesapeake Bay (cumulative).			71/7 million Pounds	

Wastewater flow to the Chesapeake Bay treated by

Biological Nutrient Removal (cumulative).	32	40	49	% WW flow
Acres of submerged aquatic vegetation (SAV) present in the Chesapeake Bay (cumulative).	63,500	71,500	78,000	Acres
Acres of aquatic reef habitat designated, with construction and restoration of oyster reef habitat to occur within those areas.	11,000	11,000		Acres
Agricultural, recreational and public lands that have voluntary integrated pest management (IPM) practice established in the Chesapeake Bay watershed (cumulative).	79	70	75	% lands
Stream miles of migratory fish habitat reopened through provision of fish passages (cumulative).	524	877	1,172	Miles

"Baseline: In 1985, 0% of wastewater flow had been treated by Biological Nutrient Removal. In 1989, 49 miles of migratory fish habitat was reopened. In 1984, there were 37,000 acres of submerged aquatic vegetation in the Chesapeake Bay. In 1988, voluntary IPM practices had been established on 2% of the lands in the Chesapeake Bay watershed.

Tribal Environmental Water Presence

In 2001 40% of Tribes will have a "water program environmental presence" (i.e., one or more persons, as appropriate, with environmental capability to advise Tribal governments on developing and implementing programs).

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Tribes with a water program presence (cumulative).			40	% Tribes

Baseline: As of 1999, approximately 20% of Tribes have a "water program environmental presence."

Wetland and River Corridor Projects

In 2001 Support wetlands and stream corridor restoration and management and assessment/monitoring of overall wetland health.

In 2000 Support wetlands and stream corridor restoration and management and assessment/monitoring of overall wetland health.

In 1999 EPA provided funding to restore wetlands and river corridors in 46 watersheds that met specific "Five Star Project" criteria relating to diverse community partnerships (for a cumulative total of 57 watersheds).

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
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Watershed-based wetland restoration projects to which EPA has provided financial support (other than 5-Star Projects) and/or has contributed significant technical

assistance (cumulative).		65	99	Projects
Watershed-/community-based wetlands/river corridor restoration projects funded by EPA's Five Star Program (cumulative).	57	57	107	Projects
States/tribes develop. wetlands assess./monitoring tools & making significant progress towards est. formal programs to assess & monitor overall wetland cond., improve., deterior., & restor. (inc.).	5	4	4	States/tribes
Baseline:	As of September 1998, EPA cooperated on and supported 11 wetland and river corridor projects through the Five Star Program. Going into FY99, 11 states/tribes had met the criteria for establishing formal assessment/monitoring programs.			

Research

Scientific Rationale for Surface Water Criteria

- In 2001 Develop the framework for diagnosing adverse chemical pollutants in surface waters.
- In 2000 Develop the scientific rationale for numerical criteria for surface waters.
- In 2000 Develop a conceptual framework for the diagnosis and assessment of water quality impairment in U.S. watersheds.
- In 2000 Identify the primary life support functions of surface waters that contribute to the management of sustainability of watersheds.
- In 1999 Completed research strategy for integrating economic assessment with ecological risk assessment of aquatic stressors. Produced three publications on knowledge based approaches to watershed assessments, and a fourth on ecosystem classification and mapping.
- In 1999 Completed reports on the requirements of submerged vegetation in coastal environments, and on predicting metal toxicity in sediments. In addition, developed a research strategy on the scientific gaps in the areas of developing and implementing biocriteria.

Performance Measures:	FY 1999	FY 2000	FY 2001
	Actuals	Estimate	Request

Report on the requirements of submerged aquatic vegetation in coastal environments.

Develop and provide a research strategy for integrating economic assessment with ecological risk assessment of multiple aquatic stressors applied at two locations.

Complete Big Darby Watershed Risk Assessment. 1 assessment

Develop a research strategy for development of numerical criteria for surface waters. 09/30/2000 requirements

Complete guidance document on acquiring data for conducting watershed analyses for multiple stressors and receptors.	1	guidance doc
Complete report on an assessment of the viability of natural attenuation as an option for the risk management of contaminated sediments.	1	assessment
Research strategy document to determine the impact of landscape changes on wetland structure and function.	1 strategy	
Complete and publish a compendium of case studies illustrating the application of the Stressor Identification Guidelines.	1	compendium
Decision-support tools and guidance for watershed scale assessments; report on risk characterization for watersheds.		09/30/01
Report on Sediment Toxicity.	1	report
Baseline: Development of diagnostic tools and methods enable water resource managers to identify critical stressors to aquatic ecosystems and focus restoration and watershed management decisions. Toxicity identification evaluation (TIE) methods currently exist for whole chemical effluents. The science is maturing regarding the development of TIEs for sediments. In 2001 the goal of this research will be to merge the whole effluent and sediment TIE methods into a consistent framework that can be used to identify ecologically important thresholds for use in watershed management.		

Coordination with Other Agencies

Involvement of many federal agencies is critical to the success of efforts to protect and restore watersheds not meeting clean water, natural resource and public health goals. These successes will depend largely on the direct involvement of many federal, state, tribal and local governments who manage the multitude of programs necessary to address water quality issues on a watershed basis. Federal agency involvement will include USDA (Natural Resources Conservation Service, Forest Service, Agriculture Research Service), Department of the Interior (Bureau of Land Management, Office of Surface Mining, United States Geological Survey (USGS), Fish and Wildlife, and the Bureau of Indian Affairs), National Oceanographic and Atmospheric Administration (NOAA), Department of Transportation, and the Army Corps of Engineers. At the state level, agencies involved in watershed management typically include departments of natural resources or the environment, public health agencies, and forestry and recreation agencies. Locally, numerous agencies are involved, including regional planning entities such as councils of governments, as well as local departments of environment, health and recreation who frequently have strong interests in watershed projects.

Government-wide, federal agencies share the Administration's goal of achieving a net increase of 100,000 acres of wetlands per year by 2005, increasing wetlands functions and values, and

implementing a fair and flexible approach to wetlands regulations. Working closely with federal partners, including the U.S. Army Corps of Engineers (ACE), an interagency group on wetlands will issue a final plan for developing a single, improved wetlands status and trends report.

Implementing successful comprehensive management plans for the estuaries in the National Estuary Program depends on the cooperation, involvement, and commitment of federal and state agency partners that have some role in protecting and/or managing those estuaries. Other agencies routinely involved include the Corps of Engineers, NOAA, the Fish and Wildlife Service, state departments of environmental protection or natural resources, and governors' offices.

Federal agencies, Gulf states, non-governmental organizations, and private citizens serve as members of the Gulf of Mexico Program's Federal Advisory Committee Act (FACA)-chartered Gulf of Mexico Policy Review Board, subcommittees, and workgroups to provide advice and recommendations for development of performance goals and measures for protection and restoration of the Gulf of Mexico. Federal partners include: EPA, USDA (Natural Resources Conservation Service, Cooperative State Research, Education, and Extension Service, the Department Of Defense (Corps of Engineers, Department of the Navy, Department of the Air Force), the Department of the Interior (USGS, Fish and Wildlife Service, National Park Service), NOAA, the Food and Drug Administration, and the Department of Transportation. Gulf State partners include: Gulf State environmental agencies, natural resource agencies, departments of health and agriculture, marine fisheries commissions, and port authorities. Non-government partners include: American Farm Bureau - Gulf of Mexico Committee, Gulf of Mexico Business Coalition, Gulf Restoration Network, and 5 citizens from each Gulf State appointed by the governors.

The Chesapeake Bay Program is a partnership between Maryland, Virginia, Pennsylvania, the District of Columbia, the Chesapeake Bay Commission (a tri-state legislative body), and EPA, which represents the federal government. The Bay Program was formed in 1983, and operates in a consensus fashion among the states, EPA and other federal agencies. The Bay Program has 9 subcommittees which focus on specific issue areas (e.g., toxics, nutrients, communications, etc.), and all of the state jurisdictions and EPA are represented on all of these subcommittees, which generally meet every six weeks.

The Chesapeake Bay Program also has a Federal Agencies Committee, which was formed in 1984 and has met regularly ever since. There are currently over 20 different federal agencies actively involved with the Bay Program through the Federal Agencies Committee. The federal agencies have operated over the past few years to implement the 1994 Agreement of Federal Agencies on Ecosystem Management in the Chesapeake Bay, which set specific goals and commitments for federally-owned lands and activities. In November 1998, EPA and over 20 other federal agencies signed the new Federal Agencies Chesapeake Ecosystem Unified Plan. The Unified Plan contains 50 new commitments which implement the President's Clean Water Action Plan in the Chesapeake Region.

Research

The National Research Council has recommended that EPA and the U.S. Army Corps of Engineers (USACE) develop joint research projects concerning contaminated sediments. EPA and the USACE have already initiated actions to begin formulating compatible and interactive programs to respond to these recommendations. EPA and USACE have initiated three projects beginning in 1999 for the investigation of capping and treated sediments utilization. In addition, pilot-scale studies of land treatment conducted under Goal 2 have led to the start of a cooperative project with USACE for land treatment of sediments in the Milwaukee Harbor. USACE is an active participant in EPA's Contaminated Aquatic Sediments Remedial Guidance Workgroup and Remediation Technology Development Forum's sediments action team. EPA has also developed joint research initiatives with the National Oceanic Atmospheric Administration (NOAA) and the United States Geological Survey (USGS) for linking monitoring data and field studies information with available toxicity data and assessment models for developing sediment criteria.

In addition, under the Endangered Species Act, EPA is required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) on actions that may affect endangered species. EPA has developed a draft strategy for research and development of criteria for endangered species that is now going through the review process. As part of the implementation of this strategy, EPA is coordinating its research with the Biological Research Division of the USGS.

The issue of eutrophication, hypoxia, and harmful algal blooms (HABs) is a priority with the Committee on Environment and Natural Resources (CENR). An interagency research strategy for *Pfiesteria* and other harmful algal species was developed in 1998, and EPA is now working to implement that strategy. EPA is working closely with NOAA on the issue of nutrients and risks posed by HABs. This CENR committee is also coordinating the research efforts among federal agencies to assess the impacts of nutrients and hypoxia in the Gulf of Mexico.

Statutory Authorities

Clean Water Act (CWA)
Safe Drinking Water Act (SDWA)
Marine Protection, Research and Sanctuaries Act (MPRSA)
Ocean Dumping Ban Act of 1988
Shore Protection Act of 1988
Clean Vessel Act
Water Resource Development Act (WRDA)
Marine Plastic Pollution, Research and Control Act (MPPRCA) of 1987
National Invasive Species Act of 1996
Coastal Wetlands Planning, Protection, and Restoration Act of 1990
North American Wetlands Conservation Act
Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
Toxic Substances Control Act (TSCA)

Resource Conservation and Recovery Act (RCRA)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Clean Air Act Amendments (CAA)

Pollution Prevention Act (PPA)

Environmental Protection Agency

FY 2001 Annual Performance Plan and Congressional Justification

Clean and Safe Water

Objective # 3: Reduce Loadings and Air Deposition

By 2005, pollutant discharges from key point sources and nonpoint source runoff, will be reduced by at least 20% from 1992 levels. Air deposition of key pollutants impacting water bodies will be reduced.

Resource Summary

(Dollars in thousands)

	FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request	FY 2001 Req. v. FY 2000 Ena.
Reduce Loadings and Air Deposition	\$1,981,357.1	\$1,920,701.7	\$1,216,772.6	(\$703,929.1)
Environmental Program & Management	\$124,463.6	\$138,646.0	\$132,374.3	(\$6,271.7)
Science & Technology	\$11,272.5	\$7,861.8	\$6,398.3	(\$1,463.5)
State and Tribal Assistance Grants	\$1,845,621.0	\$1,774,193.9	\$1,078,000.0	(\$696,193.9)
Total Workyears	863.1	879.0	854.4	(24.6)

Key Programs

(Dollars in thousands)

	FY 1999 Enacted	FY 2000 Enacted	FY 2001 Request
Rural Water Technical Assistance	\$3,095.0	\$3,586.1	\$456.0
Effluent Guidelines (CWAP)	\$22,372.2	\$21,116.9	\$23,610.1
NPDES Program (CWAP)	\$30,862.6	\$36,274.9	\$41,592.0
State Nonpoint Source Grants (CWAP)	\$200,000.0	\$200,000.0	\$250,000.0
National Nonpoint Source Program Implementation (CWAP)	\$16,033.7	\$15,401.1	\$16,944.3

Water Infrastructure:Clean Water State Revolving Fund (CW-SRF)	\$1,350,000.0	\$1,345,421.3	\$800,000.0
Water Infrastructure: Alaska Native Villages	\$30,000.0	\$30,000.0	\$15,000.0
Water Infrastructure:Boston Harbor	\$50,000.0	\$0.0	\$0.0
Water Infrastructure:Bristol County	\$2,610.0	\$2,000.0	\$3,000.0
Water Infrastructure:New Orleans	\$6,525.0	\$3,800.0	\$10,000.0
Watershed Research	\$10,297.5	\$7,481.8	\$6,398.3
Project XL	\$211.3	\$220.5	\$232.7
Rent, Utilities and Security	\$0.0	\$12,038.3	\$13,415.7
Administrative Services	\$541.1	\$2,327.0	\$2,482.1
Regional Management	\$0.0	\$438.2	\$413.2

FY 2001 Request

A key element of the Agency's effort to achieve its overarching goal of clean and safe water is the reduction of pollutant discharges from point sources and nonpoint sources. Under the National Pollutant Discharge Elimination System (NPDES) program (which includes NPDES permits, urban wet weather issues, the pretreatment program for non-domestic wastewater discharges into municipal sanitary sewers, and biosolids management controls), specific limits are set for pollutants discharged from point sources into waters of the United States. These limits are designed to ensure that national technology based standards (effluent limitations and guidelines) and water quality based requirements are adequate to meet water quality standards throughout the country. Financial assistance to states, interstate organizations, and tribes for many of these programs is provided through the Section 106 grant program included under Objective 2 of the Clean and Safe Water Goal: Conserve and Enhance Nation's Waters. EPA also provides financial assistance through the Clean Water State Revolving Fund (CWSRF) program to states for the construction of wastewater treatment facilities and implementation of other water quality management projects. The program is also fostering the use of CWSRF loans to finance the highest priority traditional and nontraditional projects on a watershed or statewide basis. This includes the Agency's legislative proposal to allow states to reserve up to an amount equal to 19% of their CWSRF capitalization grants to provide grants of no more than 60% of the costs of implementing nonpoint source and estuary management projects. Additionally, the program provides grants for Alaska Native Villages, Indian Tribes, and communities with special needs.

These base programs have been largely responsible for the substantial progress made to date in reducing water pollution. Providing states with continuing support is essential to achieving this objective and the overall goal of clean and safe water. EPA, in partnership with the states, will continue to ensure that all facilities required to have a permit have one that is effective and includes all conditions needed to ensure water quality protection. The Agency will continue its efforts to streamline the implementation of the NPDES and pretreatment programs. In addition, the Agency will continue to reorient both the NPDES and CWSRF programs to a watershed focus.

The Agency will propose effluent limitations guidelines for three major industrial sectors: iron and steel, metal products and machinery, and feedlots, which includes the Beef and Dairy Rule and the Pork and Poultry Rule. EPA will promulgate final effluent guidelines for the oil extracting industry and some sectors of the pulp and paper industry. These guidelines will then be incorporated into NPDES permits as they are issued or reissued by the NPDES permitting authority. The Agency will also continue to work on an effluent limitations guideline as part of a larger cluster rule addressing air, water, and waste impacts in urban areas of an industrial category as yet to be determined.

Over the next five to ten years, the Agency will place much greater emphasis on controlling wet weather sources of pollution from combined sewer overflows (CSOs), sanitary sewer overflows and storm water and will focus greater attention on the impacts of contaminated sediment. Nationally, urban runoff is a leading cause of impairment in estuaries, lakes, and rivers surveyed by states. This runoff has significant negative economic as well as environmental impacts. Implementing cost-effective wet weather programs will pose new challenges for EPA, states, cities, and industry -- both technologically and financially. However, by having these programs in place, we will be able to implement basic wet weather pollution controls for all major point sources. During 2001, the Agency expects to continue implementing the regulations to control storm water from municipalities and construction sources, to have approximately 900 CSO communities covered by NPDES permits and implementing controls based on EPA's CSO policy, and to propose modifications to the NPDES regulations to clarify capacity, management, operation and maintenance, and reporting requirements on unauthorized sanitary sewer overflows discharging into U.S. waters..

EPA will continue efforts to deliver decision support tools and alternative, less costly wet weather flow control technologies for use by local decision makers involved in community-based watershed management. Wet weather flow discharges can pose significant risk to both human health and downstream ecosystems. Effective watershed management strategies and guidance for wet weather flow dischargers are key priority areas remaining to assure clean water and safe drinking water.

In support of the Clean Water Action Plan, EPA will place emphasis on updating regulatory programs related to animal waste management in order to reduce environmental and public health problems caused by animal feeding operations (AFOs). Agricultural practices in the United States were estimated to contribute to the impairment of over 25 percent of the Nation's surveyed rivers and streams; 19 percent of the Nation's surveyed lakes, ponds, and reservoirs; and 10 percent of the Nation's surveyed estuaries in the 1996 National Water Quality Inventory. Intensive animal

operations alone, not including the potential runoff from farms using manure as fertilizer, are estimated to adversely impact 20 percent of waters impaired by agricultural practices. Twenty-two states reported this detailed information. The Agency is implementing a multi-year strategy to address how it will minimize environmental and public health impacts from AFOs over the next decade and beyond. Permits for all concentrated animal feeding operations (CAFOs) greater than 1,000 animal units are expected to be issued in 2000, and all remaining CAFO permits are expected to be issued by the end of 2002. These permits are issued by EPA and the states. In addition, EPA will work with states to assist all AFO facilities in developing comprehensive nutrient management plans by working with the United States Department of Agriculture to develop guidance.

Also as part of the Clean Water Action Plan, EPA will work with other federal land managers, state agencies, tribes, and private parties to accelerate the cleanup of watersheds affected by mines. In some areas, streams and ground water have been seriously affected by abandoned mines, in particular, abandoned coal mines in the eastern United States. Cooperation between EPA and its partners will help remediate these problems. In addition, EPA will continue to implement its Hardrock Mining Framework (finalized on September 12, 1997), by ensuring that permits are issued for newly proposed hardrock mines.

In 1998, the Office of Inspector General identified the NPDES permit backlog as a candidate for material weakness under FMFIA. The backlog in EPA-issued permits had tripled over the past 10 years; and the backlog in state-issued permits had doubled over this time. The goals and targets cited for NPDES are contingent upon the timely issuance of quality permits. To ensure that this occurs, a multi-year backlog reduction plan has been developed and is being implemented. The plan calls for better defining the backlog, streamlining the program, and providing technical support and training to Regions and states. In 2001, EPA anticipates that the backlog of current permits for major point sources will be 11%, which is an improvement from 28% in May 1999.

EPA provides financial assistance through the CWSRF program for the construction of wastewater treatment facilities and implementation of nonpoint source and estuarine management plans. The agency also provides technical assistance to support community needs. These efforts include dissemination of information on wastewater technologies, enhancement of community awareness of financing programs and assistance with program development activities, and, with the Office of Research and Development (ORD) support, the establishment of an Environmental Technology Verification Center to address control technologies for nonpoint source urban wet weather flows, and wastewater treatment systems for small communities. Federal capitalization funds are a critical component of financing for point and nonpoint source programs aimed at reducing pollutant discharge levels. In 2001, the Agency is requesting \$800,000,000 for the Clean Water State Revolving Fund. Combined with the Drinking Water State Revolving Fund request of \$825 million and outyear capitalization, this level enables both SRFs to meet the Administration's long-term goal of providing \$2.5 billion per year in average assistance to communities. The CWSRF is expected to provide about \$2 billion of this amount. The operation of state programs are critical to the success of the national SRF programs. The Agency expects that 35 state CWSRF programs will meet or exceed threshold measures for the appropriate pace of program implementation including loan issuance, construction progress, and loan repayments.

The CWSRF investment keeps EPA on track with our commitment to meet the goal for the CWSRF to provide an average of \$2.0 billion in annual financial assistance. Indeed, the President's Budget calls for cumulative additional capitalization of \$3.2 billion in fiscal years 2002-2005, which will enable the program to exceed the Administration commitment. Over \$17 billion has already been provided to capitalize the CWSRF, more than twice the original Clean Water Act authorized level of \$8.4 billion. Total SRF funds available for loans since 1987, reflecting loan repayments, state match dollars, and other sources of funding, are approximately \$30 billion, of which \$26 billion having been provided to communities as financial assistance (\$4.2 billion was available for loans as of June 1999).

To further support the objectives of the Clean Water Action Plan, the Agency is requesting to increase the flexibility of the states in operating their Clean Water State Revolving Funds, and provide them with the tools they need to address their most significant water quality problems, the Agency proposes to allow states to reserve up to an amount equal to 19% of their CWSRF capitalization grants to provide grants of no more than 60% of the costs of implementing nonpoint source and estuary management projects. Projects receiving grant assistance would be required, to the maximum extent practicable, to rank highest on the state's list used to prioritize projects eligible for assistance. States would be permitted to make these grants using either a portion of their capitalization grant itself, or using other funds in their state revolving fund (e.g, state match, repayments, bond proceeds). Grants may also be combined with loans for eligible projects for communities which might otherwise find loans unaffordable.

To increase public health and water quality in Indian Country, the Agency proposes to increase for Fiscal Year 2001 and beyond the percentage of funds appropriated for the Clean Water State Revolving Fund that is reserved for wastewater grants to tribes. The change from 0.5 percent to 1.5 percent will substantially increase the amount of funds available to tribes for wastewater treatment project grants. Over 70,000 homes in Indian country have inadequate or nonexistent wastewater treatment service. EPA and the Indian Health Service estimate tribal wastewater infrastructure needs exceed \$650 million.

In addition to the CWSRF program, the water program is responsible for managing Water Quality Cooperative Agreements and the Section 106 grants which directly support state and tribal efforts to reduce point source loadings. The Agency continues to manage the construction grants close-out process and expects by the end of 2000 to have achieved success in closing out all but 123 pre-1992 projects totaling \$2.6 billion. The program also provides grant assistance for environmental protection for Alaska Native Villages and Indian Tribes, and the program manages grant assistance for wastewater treatment projects as requested by the President and as identified by Congress.

EPA does not regulate septic systems. However, properly managed septic systems are an important part of the nation's wastewater treatment infrastructure, but poorly-sited and maintained systems threaten the health and safety of two million people yearly by contaminating wells and surface water drinking water supplies, leaking septage into yards where children play, backing up into homes, closing beaches, contaminating shellfish, and damaging aquatic life and the supporting ecosystem. The water program is addressing these challenges through publication of voluntary management

standards that municipalities may implement and guidance on impediments, and through substantial outreach to state and municipal authorities.

According to states, pollution from nonpoint sources remains the single largest cause of water pollution, with agriculture identified as a leading cause of impairment in 25% of the river miles surveyed. In order to meet this objective and restore and maintain water quality, significant loading reductions from nonpoint sources (NPS) must be achieved. Because EPA has limited authority to regulate NPS under the Clean Water Act, state NPS programs are critical to our overall success. The EPA will continue to encourage states to provide CWSRF funding for high priority projects that address nonpoint source and estuary projects. States will need to make revisions to their existing nonpoint source programs and fully and expeditiously implement all of the nine key program elements agreed to with EPA. Starting in 2000, EPA will award NPS monies exceeding the first \$100,000,000 of the \$250,000,000 total request only to those states and tribes that have incorporated all nine key elements into an approved section 319 Nonpoint Source Management Plan. In addition, coastal states will need to complete development of their coastal nonpoint pollution control programs that were conditionally approved by EPA/National Oceanographic and Atmospheric Administration (NOAA) in 1998 and to begin implementation of these programs.

EPA's nonpoint source program provides program, technical, and financial assistance to help states and tribes implement programs to control various forms of runoff. While agricultural sources are the most significant category of nonpoint source runoff, state NPS programs address all categories of NPS runoff with a mix of voluntary and state regulatory approaches. These state programs are the primary means for implementing nonpoint source Total Maximum Daily Load (TMDL) allocations and for achieving water quality standards. EPA's nonpoint source program works closely with a number of other Federal agencies to help reduce runoff and encourage private sector partnerships to spur voluntary adoption of NPS controls. As the program moves forward, new tools, best management practices, and NPS and contaminated sediment control strategies will need to be developed in cooperation with states, tribes, other Federal agencies and the private sector. State implementation plans for nonpoint sources will be required to provide reasonable assurances that load allocations within an approved TMDL are met for waters impaired solely or primarily from nonpoint sources. Lastly, EPA will work in FY 2001 to reduce pollution from the estimated 11 million U.S. septic systems that represent a real risk to water quality and public health.

Tribal participation in the Nonpoint Source Control Program under CWA section 319(h) has been limited by section 518(f) which authorizes EPA to grant up to one-third of one percent of national 319(h) program funds for tribes. Tribes applying for and receiving section 319(h) grants have steadily increased from two in 1991 to 11 in 1999. Twenty-two tribes have met the eligibility requirements to receive section 319(h) program grants. This number is expected to increase annually as more of the 554 federally recognized tribes become eligible to participate in the 319(h) program (over 20 tribes are working to become program eligible). Due to this increasing demand on the severely limited pool of tribal grant funds, EPA again proposes to permanently eliminate the current statutory ceiling on the percentage of Section 319 grant funds that may be awarded to tribes/tribal consortia for nonpoint source activities.

EPA (in coastal areas working with NOAA) will increase efforts to promote the establishment of state authorities needed to assure the implementation of nonpoint source controls to achieve water quality standards, with particular emphasis on nutrients and other NPS pollutants of concern in specific priority watersheds. EPA will continue to work with states on upgrading their polluted runoff programs to better ensure NPS implementation. EPA (in concert with NOAA) will work with states to ensure that all states have developed fully-approvable programs to reduce polluted runoff in coastal areas.

As part of the Clean Water Action Plan, CWA Section 319 grants will be targeted to support implementation of priority NPS and watershed protection activities called for in state Watershed Restoration Action Strategies, including those implementation actions necessary to support NPS management and controls specified in TMDLs developed for NPS-impaired priority waters. In recognition of the increasing NPS management needs reflected in TMDLs, Section 319 grants will be increased by \$50 million to help states implement specific NPS controls including reductions identified in TMDLs, and to provide additional funds, at state discretion, for TMDL development (limited to 20% of the total grant amount by guidance)..

Additional Clean Water Action Plan support through the Clean Water State Revolving Fund program provides financial assistance for implementation of watershed restoration projects; and agency technical assistance helps communities and rural areas plan and invest in decentralized wastewater treatment facilities, so that they are properly installed and maintained. This Clean Water Action Plan “Key Action” aims to keep malfunctioning systems from producing nonpoint source pollution.

The Clean Water Action Plan furthers the efforts of the Federal government in assessing the risks associated with and reducing atmospheric deposition of pollutants, particularly nitrogen, using both Clean Water Act and Clean Air Act authorities. To address air deposition, the Agency has established a cross-media team to plan and implement strategies to reduce air deposition. As a result, water quality protection has taken a prominent place in regulatory development under the Clean Air Act, in air research, and in the focus of partnerships with local communities. Air deposition is being addressed Agency-wide as an ecosystem problem with health, environmental, and economic impacts. EPA will continue to encourage greater air deposition monitoring, as well as continue to support state TMDLs and other tools that address impacts to water quality.

Research

Effective watershed management strategies and guidance for Wet Weather Flow (WWF) dischargers is one of the key priority areas remaining to assure clean water and safe drinking water. Pollution from non-point sources during and after rainfalls is now the single largest cause of water pollution. This degradation of water quality poses significant risks to human and ecological health through the uncontrolled release of pathogenic bacteria, protozoans and viruses as well as a number of potentially toxic, bioaccumulative contaminants. Storm-generated high flowrates exacerbate ecological upsets and cause significant physical damage to streams. EPA will continue to develop and validate effective watershed management strategies for controlling WWFs, especially when they are high volume and toxic. This research will also develop and provide effective beach evaluation tools necessary to make timely and informed decisions on beach advisories and closures.

Due to the prohibitively high cost of employing currently available technology, solutions to WWF control are difficult to implement. Research will emphasize pollution prevention strategies, primarily through the investigation of best management practices (BMPs), to avoid or minimize the generation of WWF contaminations. EPA will also conduct research to develop decision support tools to evaluate and verify improved watershed management strategies. Watershed management research will investigate techniques to reuse and reclaim stormwater for beneficial purposes, defining the conditions when secondary uses are both desirable and economically possible. This program is designed to promote “community-based” decisions by developing decision support tools and alternative WWF control technologies for use by local decision makers involved in community-based watershed management and pollution control. In 2001, EPA will develop decision-support statistical tools for the watershed assessment guidance in the Watershed Restoration Strategy.

Another area of research will focus on growing evidence of the risk of infectious diseases resulting from exposure to microbes in recreational waters. Exposure to these diseases is of particular concern after major rainfall events which cause discharges from both point sources (e.g., sanitary sewer overflows, combined sewer overflows, and stormwater) and non-point sources (e.g., animal feedlots and malfunctioning septic tanks). In 2001, the beaches research program will continue to develop and provide the tools necessary to make timely and informed decisions on beach advisories and closures, develop models that can be used to predict when beach closures or warnings are needed, and develop faster, cheaper test methods and indicators for detection and measurement of human pathogenic microbes. This research will work to develop better and faster analytical methods for detecting risk before exposure takes place. Better information will also help local communities to adopt the appropriate control technologies to mitigate the problem. These efforts will complement work being done under Objective 1 of the Clean and Safe Water Goal.

This research program is also supported through the Agency’s Postdoctoral Initiative. The FY 2001 request is the third year of the effort to enhance our intramural research program by supporting 0.5 additional postdoctoral positions under this objective. This enhancement continues to build upon the positive response by the academic community to EPA’s announcement of 50 postdoctoral positions for 1999.

FY 2001 Change from FY 2000 Enacted

EPM

- (+\$1,225,000) To support a mining initiative aimed at characterizing and remediating surface and ground water contamination resulting from mineral extraction.
- (+\$1,405,500) Continued support for CAFO activities related to strategy implementation and permit issuance.
- (-\$450,000) Reductions have been made against the 2000 level due to anticipated progress made in meeting the court-ordered deadline for developing a cooling water intake regulation..
- (+\$500,000) This increase will support a pilot permit project to study effectiveness of permit and non-permit approaches to implementing best management practices (BMPs) for silviculture.
- (+\$272,300) This increase will provide continued support to the Agency's efforts to develop voluntary management standards for on-site wastewater treatment systems.
- (+\$1,604,600) This increase will allow the Agency to complete effluent limitations guidelines and standards for the remaining sectors of the pulp and paper industry and develop analytical methods for specific chemical pollutants. The Agency will also provide permitting assistance for high-profile industrial permits.
- (+\$800,000) Will provide increased technical support for development and dissemination of improved practices and techniques for controlling nonpoint source pollution.
- (-4.2 total workyears) Reflects a workyear decrease in accordance with fiscal year 2000 Appropriations language.
- (+\$5,933,300) Reflects payroll cost of living increases and enrichment and increased working capital fund requirements.
- The 2001 Request is \$18,733,300 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.

S&T

- The 2001 Request is \$380,000 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.

STAG

- (+\$1,000,000) The increase supports the Administration's commitment to addressing the special wastewater requirements of Bristol County, Massachusetts.
- (-\$15,000,000) from Alaska Native villages, which is consistent with the FY 2000 request. The Agency believes this to be the level of funding which can be most effectively utilized by the State of Alaska.
- (+\$6,200,000) for the City of New Orleans to support planning, design, construction and other activities related to unique problems in the city's sewer system.
- (-\$545,421,300) from the Clean Water SRF. The request is consistent with achieving the Administration's goals for the CWSRF to revolve at \$2.0 billion per year after Federal capitalization grants end. To date, more than \$17 billion has been appropriated in capitalization grants. This amount, combined with state matching and leveraging, has allowed the SRFs to provide more than \$26 billion in financial assistance to date.
- (+\$50,000,000) This increase of the CWA Section 319 nonpoint source grants program supports increasing state nonpoint source implementation needs reflected in state-established TMDLs and state Watershed Restoration Action Strategies.
- The 2001 Request is \$192,972,600 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2001 President's Request.

Research

S&T

- (-\$1,389,300) The 2001 request is \$1,389,300 below the 2000 Enacted budget level due to Congressional earmarks received during the appropriations process that are not part of the 2001 President's Request.
- (+\$255,900, -6.0 workyears) The R&D program, including infrastructure support costs, is spread across eight of the ten goals in the Agency's GPRA/budget structure. Based on a review of actual infrastructure utilization under each goal (i.e., operating expenses and

working capital fund), adjustments are being made to more accurately reflect expectations for use in FY 2001.

Annual Performance Goals and Performance Measures

Biosolids and Beneficial Reuse

In 2001 Increase the beneficial use of the approximately 7 million dry weight tons of biosolids produced each year.

In 2000 54% of biosolids are beneficially reused.

In 1999 50% of biosolids are beneficially reused.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
POTWs beneficially reusing all or a part of their biosolids and, where data exists, the percent of biosolids generated that are beneficially reused.	50	54	55	% biosolids

Baseline: An estimated 50% of biosolids are being beneficially reused.

Reducing Industrial Pollutant Discharge

In 2001 Industrial discharges of pollutants to the nation's waters will be significantly reduced through implementation of effluent guidelines.

In 2000 Industrial discharges of pollutants to the nation's waters will be significantly reduced through implementation of effluent guidelines.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Reduction in loadings for toxic pollutants for facilities subject to effluent guidelines promulgated between 1992 & 1999, as compared to 1992 levels as predicted by model projections.		4 million	4 million	Pounds
Reduction in loadings for conventional pollutants for facilities subject to effluent guidelines promulgated between 1992 & 1999, as compared to 1992 levels as predicted by model projections.		385 million	386 million	Pounds
Reduction in loadings for non-conventional pollutants for facilities subject to effluent guidelines promulgated between 1992 and 1999, as compared to 1992 levels as predicted by model projections.		260 million	370 million	Pounds

Baseline: Flow data is not available for some point sources in PCS. EPA will model loadings from permits issued based on effluent guidelines promulgated between 1992 and 1999.

NPDES Permit Requirements

- In 2001 Current NPDES permits reduce or eliminate discharges into the nation's waters of (1) inadequately treated discharges from municipal and industrial facilities; and (2) pollutants from urban storm water, CSOs, and CAFOs.
- In 2000 Current NPDES permits reduce or eliminate discharges into the nation's waters of (1) inadequately treated discharges from municipal and industrial facilities; and (2) pollutants from urban storm water, combined sewer overflows (CSOs), and concentrated animal feeding operations (CAFOs).
- In 1999 Quantified the number of AFOs that were permitted by EPA and states and the extent the permits included manure management requirements.
- In 1999 It was determined that developing a national inventory of AFOs and estimates of pollutant loadings was not feasible since there are as many as 450,000 AFOs and rapid changes are occurring in a number of facilities.
- In 1999 For all industrial activities operating in the state, 92% of states and territories and for construction sites over 5 acres, 88% of states and territories have current permits.
- In 1999 An assessment of necessary elements of a comprehensive general permit has been developed to aid Regions and States in issuing permits to concentrated animal feeding operations.
- In 1999 830 CSO communities (92%) are covered by permits or other enforceable mechanisms consistent with the 1994 CSO policy. (Note: this result may reflect overcounting and implementation of only portions of the CSO Policy.)
- In 1999 71% of major point sources are covered by current NPDES permits.
- In 1999 513 communities implemented requirements in Stormwater Phase I permits (MS4s) and / or CSO Long Term Control Plans (LTCPs) that are anticipated to contribute to improvements in their local watersheds.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Major point sources are covered by current permits.	71%	84%	89%	Point Sources
States with current permits for construction sites over 5 acres.	88	100	100	% States
States with general NPDES permits for CAFOs > 1,000 animal units or with individual NPDES permits for all CAFOs > 1,000 animal units consistent with the AFO Strategy and guidance.		72	100	% States
Comprehensive methodology developed for documenting pollutants removed through increased SSO, CSO and storm water treatment, and increased wastewater				

treatment to secondary or better standards.			1	Methodology
Permittees (among the approximately 900 CSO communities nationwide) that are covered by NPDES permits or other enforceable mechanisms consistent with the 1994 CSO policy.	92	100	100	% permittees
Minor point sources are covered by current permits.	62%	60%	66%	Point Sources
States with current permits for all industrial activities operating in the state.	92	100	100	% States
Completion of AFO documents	1			Document
Inventory of Animal Feeding Operations/ estimate loadings	0			Inventory
Quantity of AFOs which are permitted	1			List
Communities that will have local watersheds improved by controls on CSOs and stormwater	513			Communities
Facilities w. a discharge requiring an indiv. permit that a) are covered by a curr. indiv. NPDES perm.; b) have expir. perm.; c) have applied but not been issued a perm.; & d) have perm. under appeal			no target	

Baseline: As of May 1999, 72% of major point sources and 54% of minor point sources were covered by a current NPDES permit. At the end of FY99, 53 of 57 states/territories had current storm water permits for all industrial activities, and 50 of 57 had current permits for construction sites over 5 acres. In June 1999, 74% of approximately 900 CSO communities were covered by permits or other enforceable mechanisms consistent with the 1994 CSO Policy. As of December 1999, approximately 14 states had current NPDES general permits for CAFOs and at least another 13 had issued one or more individual NPDES permits for CAFOs.

Construction Grant and Special Project Closeout

- In 2001 Reduce point source loadings by expediting completion of projects funded under Clean Water Act Title II (construction grants) and special project STAG grants.
- In 2000 Reduce point source loadings by expediting completion of projects funded under Clean Water Act Title II (construction grants) projects and special project State and Tribal Assistance Grants (STAG).
- In 1999 340 construction grants projects remain to be closed out.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Construction grants projects awarded after FY91 closed out within 7 years of grant award.		90	90	% grants

Construction grants projects awarded before FY92 remaining to be closed out.	260	123	45	Projects
Construction grants projects (both those awarded before FY92 and after FY91) remaining to be closed out.	340			Projects
Special project STAG grants closed out within 7 years of grant award.			90	% Grants

Baseline: As of September 1998, 439 construction grants projects remained to be closed out, according to biannual reports from the Regions. As of September 1998, three special project STAG grants had been closed out according to biannual reports submitted by the EPA Regions to EPA Headquarters. Special project STAG grants were first established in 1994.

Effluent Guidelines

- In 2001 Take final action on 2 and propose 2 effluent guidelines limitations for industrial categories that contribute significantly to pollution of surface waters.
- In 2000 Take final action on 4 and propose 1 effluent guidelines limitations for industrial categories that contribute significantly to pollution of surface waters.
- In 1999 Took final action on one and proposed two effluent guidelines limitations for industrial categories that contribute significantly to pollution of surface waters.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Effluent guidelines proposed or promulgated	2/1	1/4	2/2	Rules

Baseline: Baseline is not applicable since these are new effluent guidelines.

Pretreatment Program Audits

- In 2001 Prevent pass through of pollutants to sludge and the nation's waters and protect POTW operations by auditing all approved pretreatment programs over a 5-year period to ensure that 1500 effective pretreatment programs control over 30,000 significant industrial dischargers.
- In 2000 Prevent pass through of pollutants to sludge and the nation's waters and protect POTW operations by auditing all approved pretreatment programs over a five year period to ensure that 1,500 effective pretreatment programs control over 30,000 significant industrial dischargers.
- In 1999 20.5% of approved pretreatment programs were audited in FY99 and approximately 80% of pretreatment programs were audited over the previous 5 years.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
Approved pretreatment programs audited in the last 5 years.	approx. 80			% programs

Approved pretreatment programs audited in the reporting year. Of those, the number of audits finding significant shortcomings and the number of local programs upgraded to achieve compliance.

100% over 5 yrs 100% over 5 yrs

Programs

Baseline: At the end of FY99, 1,360 audits had been conducted since October 1, 1994. There are 1,369 pretreatment programs; however, some of the programs were audited more than once.

Clean Water State Revolving Fund: Annual Assistance

In 2001 Reduce point and nonpoint source loadings by managing the \$30 billion in CWSRF assets to encourage use of state funds for state high-priority projects.

In 2000 Effectively implement the Clean Water State Revolving Fund (CW SRF) program to ensure annual assistance of approximately \$2 billion.

In 1999 41 states and Puerto Rico conducted separate annual audits of their SRFs.

In 1999 30 states met "pace of the program" measures for loan issuance and pace of construction.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
States that are using integrated planning and priority systems to make CW SRF funding decisions (cumulative).			17	States
States that meet or exceed "pace of the program" measures for loan issuance and construction (cumulative).	30	30	35	States
States and Puerto Rico that conduct separate annual audits of their CW SRFs	41	42	45	States
EPA will report to Congress on the pace of the Clean Water State Revolving Fund Program.		1	1	Report

Baseline: The Agency's National Information Management System (NIMS) shows, as of July 1998, 39 states/territories were conducting separate annual audits of their SRFs and utilizing fund management principles. NIMS shows, as of June 1998, 25 states were meeting the "pace of the program" measures for loan issuance, pace of construction, and use of repayments. As of September 1998, 8 states were using integrated planning and priority systems to make SFR funding decisions.

Improving Wastewater Sanitation in Indian Country

In 2001 Increase protection of human health in Indian Country by providing adequate wastewater sanitation to more of the 71,028 homes in Indian Country with inadequate wastewater sanitation systems.

In 2000 Increase protection of human health in Indian Country by providing adequate wastewater sanitation to the 71,028 homes in Indian Country with inadequate wastewater sanitation systems.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
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Homes in Indian Country whose residents are provided with adequate wastewater sanitation systems through funding from the CW SRF Tribal Set Aside Program (cumulative).	6	9	% Homes	
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Baseline: Annual reporting established in FY 1998 by EPA and the Indian Health Service shows 71,028 homes in Indian Country without adequate treatment.

Wastewater Treatment Facility Compliance

In 2001 Protect human health and avoid increased point source loadings by helping the approximately 17,000 small U.S. wastewater treatment systems to maintain permitted performance levels.

In 2000 Protect human health and avoid increased point source loadings by helping the approximately 17,000 small U.S. wastewater treatment systems to maintain permitted performance levels.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
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Wastewater treatment facilities maintaining permitted performance levels through assistance under Section 104(g) of the CWA.	699	744	Facilities	
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Baseline: In 1998, 890 facilities were assisted to improve, maintain, or achieve compliance.

Wastewater Treatment

In 2001 500 projects funded by the Clean Water SRF will initiate operations, including 300 projects providing secondary treatment, advanced treatment, CSO correction (treatment), and/or storm water treatment. Cumulatively, 6,200 SRF funded projects will have initiated operations since program inception.

In 2001 Reduce human health risks and nonpoint source loadings from the approximately 11 million failing septic systems that pollute drinking water supplies, playgrounds and beaches, back up into homes and damage shellfish and other aquatic life.

In 2000 Another two million people will receive the benefits of secondary treatment of wastewater, for a total of 181 million people.

In 1999 Another 3.4 million people received the benefits of secondary treatment of wastewater, for a total of 179 million.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
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States which adopt the Voluntary Management Standards Program for On-site Wastewater Treatment Systems.			10	States
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CW SRF projects that have initiated operations (cumulative).	5,200	5,700	6,200	SRF projects
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Additional people who will receive the benefits of secondary or better treatment of wastewater	3.4	2		M People
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Baseline: The Agency's National Information Management System shows 3,909 SRF projects initiated as of June 1998.

Reducing Nonpoint Source Pollution

- In 2001 Reduce nonpoint source sediment and nutrient loads to rivers and streams.
- In 2000 In support of the Clean Water Action Plan, 45 states upgrade their nonpoint source programs, to ensure that they are implementing dynamic and effective nonpoint source programs that are designed to achieve and maintain beneficial uses of water.
- In 1999 In support of the Clean Water Action Plan, 11 additional states have upgraded their nonpoint source programs, to ensure that they are implementing dynamic and effective nonpoint source programs that are designed to achieve and maintain beneficial uses of water.

Performance Measures:	FY 1999 Actuals	FY 2000 Estimate	FY 2001 Request	
AFOs for which Comprehensive Nutrient Management Plans (CNMPs) are developed (cumulative).			5%	AFOs
Clean Water SRF loaned for projects to prevent polluted runoff.	6	6	10	% CW SRF
EPA approvals of state submitted upgraded nonpoint source programs (incorporating the 9 key elements outlined in national Nonpoint Source Program and Grants Guidance for FY97 and Future Years).	11	45		States

Baseline: No CNMPs have yet been developed. As of September 1998, 24 states were funding nonpoint and estuary projects with their SRFs.

Verification and Validation of Performance Measures

Goal 2 Objective 3

Performance Measure: Major Point sources are covered by current permits; Minor Point Sources are covered by current permits

Performance Database: The Permits Compliance System (PCS) will be used to determine which permits have not exceeded their expiration dates.

Data Source: Regions and States will enter data into PCS.

QA/QC Procedures: HQ will review data submitted by States from State databases and ensure that this data is used to update PCS.

Data Quality Review: OIG audits 8100076 (3/13/98) and 8100089 (3/31/98) discussed need for current data in PCS.

Data Limitations: There are significant data gaps for minor facilities and discrepancies between State databases and PCS.

New/Improved Data or Systems: EPA Headquarters is providing contractor assistance to improve PCS data quality. By 2003, PCS is scheduled to be modernized to make it easier to use and to ensure that it includes all needed data to manage NPDES programs.

Performance Measure: Clean Water State Revolving Fund (CWSRF) projects that have initiated operations

Performance Database: National Clean Water State Revolving Fund Information Management System

Data Source: Reporting by municipal and other facility operators. Entry by state regulatory agency personnel and EPA Regional staff. Collection and reporting once yearly.

QA/QC Procedures: Headquarters is responsible for collecting and compiling the data, and querying Regions as needed. Regions are responsible for collecting the data from their client states and reporting the data to HQ once yearly.

Data Quality Review: EPA Headquarters and Regions annually review the data submitted by states.

Data Limitations: None

New/Improved Data or Systems: This system was new as of 1996. It is updated on a continuous basis, and database fields are changed or added as needed.

Performance Measure: Reduction in Loadings for toxic pollutants for facilities subject to effluent guidelines promulgated between 1992 & 1999, as compared to 1992 levels as predicted by model projections; Reduction in loadings for conventional pollutants for facilities subject to effluent guidelines promulgated between 1992 & 1999, as compared to 1992 levels as predicted by model projections; Reduction in loadings for non-conventional pollutants for facilities subject to effluent guidelines promulgated between 1992 & 1999, as compared to 1992 levels as predicted by model projections

Performance Database: Permits Compliance System (PCS) will be used to determine which permits are issued in FY2001; Loading reductions will be determined for the permits issued in '01 from Effluent Guidelines development data

Data Source:

QA/QC Procedures: Regions are responsible for determining which of the permits issued fall into the appropriate industrial effluent guideline categories.; Headquarters will calculate the loadings for the permits issued based on the Effluent Guidelines development data.

Data Quality Review: OIG audits 8100076 (3/13/98) and 8100089 (3/31/98) mentioned the need for current data in PCS.

Data Limitations: Flow data in PCS is not complete, so it must be supplemented with Effluent Guidelines development data.

New/Improved Data or Systems: EPA Headquarters is providing contractor assistance to improve PCS data quality. By 2003, PCS is scheduled to be modernized to make it easier to use and to ensure that it includes needed data.

Coordination with Other Agencies

National Pollutant Discharge Elimination System Program (NPDES)

Since inception of the NPDES program under Section 402 of the Clean Water Act, EPA and the authorized states have developed expanded relationships with various federal agencies to implement pollution controls for point sources. EPA works closely with the Fish and Wildlife Service on consultation for protection of endangered species and with the Advisory Council on Historic Preservation on National Historic Preservation Act implementation. EPA and the states rely on monitoring data from the U.S. Geological Survey (USGS) to help confirm pollution control decisions. The Agency also works closely with the Small Business Administration and the Office of Management and Budget to ensure that regulatory programs are fair and reasonable. The Agency coordinates with the National Oceanic and Atmospheric Administration (NOAA) on efforts to ensure that NPDES programs support coastal and national estuary efforts; and with the Department of Interior on mining issues.

Joint Strategy of Animal Feeding Operations

The Agency is working closely with the Department of Agriculture (USDA) to implement the Unified National Strategy for Animal Feeding Operations finalized on March 9, 1999. This joint strategy is among the key actions in the Clean Water Action Plan. The Strategy sets forth a framework of actions that USDA and EPA plan to take, under existing legal and regulatory authority,

to minimize water quality and public health impacts from improperly managed animal wastes in a manner designed to preserve and enhance the long-term sustainability of livestock production.

Clean Water State Revolving Fund (CWSRF)

Representatives from EPA's SRF program, Housing and Urban Development's (HUD's) Community Development Block Grant program, and USDA's Rural Utility Service have signed a Memorandum of Understanding committing to assisting state or federal implementers in: (1) coordination of the funding cycles of the three federal agencies; (2) consolidation of plans of action (operating plans, intended use plans, strategic plans, etc.); and (3) preparation of one environmental review document, when possible, to satisfy the requirements of all participating federal agencies. A coordination group at the federal level has been formed to further these efforts and maintain lines of communication. In many states, coordination committees have been established with representatives from the three programs.

Clean Water SRF Indian Set Aside - Indian Health Service and Rural Utilities Service

In implementation of the Indian set-aside grant program under Title VI of the Clean Water Act, EPA works closely with the Indian Health Service to administer grant funds to the various Indian Tribes, including determination of the priority ranking system for the various wastewater needs in Indian Country.

In 1998, EPA and the Rural Utilities Service of the Department of Agriculture formalized a partnership between the two agencies to provide coordinated financial and technical assistance to Indian Tribes.

Construction Grants Program - US Army Corps of Engineers

Throughout the history of the construction grants program under Title II of the Clean Water Act, EPA and the delegated states have made broad use of the construction expertise of the Corps of Engineers to provide varied assistance in construction oversight and administrative matters. The mechanism for this expertise has been and continues to be an Interagency Agreement between the two agencies.

Nonpoint Sources

EPA will continue to work closely with its federal partners to achieve the ambitious strategic objective of reducing pollutant discharges, including at least 20 percent from 1992 erosion levels. Most significantly, EPA will continue to work with the U.S. Department of Agriculture (USDA), which has a key role in reducing sediment loadings through its continued implementation of the Environmental Quality Incentives Program, the Conservation Reserve Program, and the Conservation Operations. USDA also plays a major role in reducing nutrient discharges through these same programs. EPA will also work closely with the Forest Service and Bureau of Land Management, whose programs can contribute significantly to reduced pollutant loadings of sediment, especially on

the vast public lands that comprise 29% of all land in the United States. EPA will work with these agencies, USGS, and the states to document improvements in land management and water quality.

Air Deposition

EPA is working with NOAA, as well as with state air and water programs and National Estuary Programs where the impacts of air deposition are of concern. EPA plans to increase cooperation with other federal agencies such as USGS to address atmospheric deposition problems.

Research

Research addressing the ecosystem effects of Wet Weather Flows (WWFs) is divided into three categories: 1) watershed management for WWFs; 2) control technology for drainage systems; and 3) infrastructure improvement. Implementation of this work is guided by the “Risk Management Research Plan for Wet Weather Flows.” This research plan was peer reviewed by the Urban Water Resources Research Council of the American Society of Civil Engineers (ASCE) and the Water Environment Research Foundation of the Water Environment Federation. A portion of the WWF research plan’s projects are being conducted within EPA, with funding from Section 104(b)(3) of the Clean Water Act (CWA). This plan is also being used to coordinate relevant work being conducted by others such as the Water Environment Research Foundation’s Wet Weather Advisory Panel, the ASCE Urban Water Resources Research Council, the U.S. Department of Agriculture, the U.S. Centers for Disease Control (CDC), the Army Corps of Engineers (USACE), the U.S. Geological Survey (USGS), the Sanitary Sewer Overflow (SSO) Advisory Committee and Urban WWF Subcommittee, and numerous other national and international organizations involved with WWF research to improve coordination and minimize duplication.

EPA has numerous WWF research projects in which we partner with other federal and state agencies. For example, we have signed a four year interagency agreement (IAG) with CDC to evaluate the feasibility of applying CDC/National Center for Infectious Diseases (NCID)-developed techniques in determining the animal source type of *Cryptosporidium* oocysts found in water supplies. This is an important facet of our source water protection research program. Once the contamination source type is determined, subsequent investigative and corrective measures that will protect source waters can be more focused and efficient.

EPA has also signed a three year IAG with USACE at the Waterways Experiment Station (WES) in Vicksburg, Mississippi, to develop a numerical watershed model that will predict change in stream channels from land use change. Both organizations have an inherent interest in developing the tools to predict such morphologic changes. Land use changes alter stormwater runoff patterns which upsets the established equilibrium between the flow and the shape and course of the streambed (stream geomorphology). Under this IAG, the USACE will modify an existing river model to account for erosion in small streams.

Most recently, EPA signed a four year IAG with the Department of Defense to evaluate and improve intelligent systems technology (e.g., sensors; incorporation of sensors into structural materials, coatings, liners; correlation of sensor output with structural integrity and residual service life; integration of structural integrity and hydraulic and fluid quality monitoring) that will enable effective real-time measurement of the structural condition of infrastructure to utility managers. This structural condition information will provide the basis for optimizing maintenance planning, thus significantly reducing infrastructure replacement costs and preventing infrastructure failures and their attendant health, environmental, and economic hazards.

Finally, EPA is currently working toward collaborative research projects with the USGS on their National Ambient Water Quality Assessment (NAWQA) program, with discussion focusing on water quality results in urban areas. The USGS has data showing that urban streams have high levels of pesticides, higher than many agricultural area streams, which we can potentially use to develop a study of urban pesticide sources. EPA will also evaluate how the USGS data could be integrated into the GIS database system.

Statutory Authorities

Clean Water Act

Clean Air Act

Coastal Zone Act Reauthorization Amendments of 1990

Safe Drinking Water Act

Toxic Substances Control Act